

OFFICIAL COPY

INFORMATION SHEET

PRESIDING: Chairman Finley and Commissioners Brown-Bland, Dockham, Patterson, Gray, Clodfelter and Mitchell
PLACE: Dobbs Building, Raleigh, NC
DATE: October 16, 2018
TIME: 10:00 a.m. – 1:00 p.m.
DOCKET NO.: W-354, Sub 360
COMPANY: Carolina Water Service, Inc. of North Carolina
DESCRIPTION: Application by Carolina Water Service, Inc. of North Carolina, 4944 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina 28217, for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All of Its Service Areas in North Carolina, Except Corolla Light and Monteray Shores Service Area
VOLUME: 7

APPEARANCES

FOR CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA:
Jo Anne Sanford, Esq.
Robert H. Bennink, Jr., Esq.

FOR THE USING AND CONSUMING PUBLIC:
Margaret A. Force, Esq. - NC Department of Justice

Gina C. Holt, Esq. – Public Staff - NCUC
William E. Grantmyre, Esq.
John Little, Esq.

WITNESSES

Please see attached.

EXHIBITS

Please see attached.

EMAIL COPIES ORDERED: E-mail: Sanford – 1; Force – 1; Little – 1; Holt – 1; Grantmyre - 1 and Casselberry - 1
CONFIDENTIAL: See email copies ordered above.

REPORTED BY: Joann Bunze
TRANSCRIBED BY: Joann Bunze
DATE TRANSCRIBED: October 19, 2018

TRANSCRIPT PAGES: 141
PREFILED PAGES: 208
TOTAL PAGES: 349

FILED

OCT 19 2018

Clerk's Office
N.C. Utilities Commission

1 A P P E A R A N C E S:

2 FOR CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA:

3 Jo Anne Sanford, Esq.

4 Sanford Law Office, PLLC

5 Post Office Box 28085

6 Raleigh, North Carolina 27611-8085

7

8 Robert H. Bennink, Jr., Esq.

9 Bennink Law Office.

10 130 Murphy Drive.

11 Cary, North Carolina 27513

12

13 FOR COROLLA LIGHT COMMUNITY ASSOCIATION, INC.:

14 Brady Allen, Esq.

15 Allen Law Offices, PLLC

16 1514 Glenwood Avenue, Suite 200

17 Raleigh, North Carolina 27604

18

19 FOR THE USING AND CONSUMING PUBLIC:

20 Margaret A. Force, Esq.

21 Assistant Attorney General

22 North Carolina Department of Justice

23 Post Office Box 629

24 Raleigh, North Carolina 27602

1 A P P E A R A N C E S Cont'd:
2 FOR THE USING AND CONSUMING PUBLIC:
3 Gina C. Holt, Esq.
4 William E. Grantmyre, Esq.
5 John D. Little, Esq.
6 Public Staff - North Carolina Utilities Commission
7 4326 Mail Service Center
8 Raleigh, North Carolina 27699-4300

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

T A B L E O F C O N T E N T S
E X A M I N A T I O N S

DYLAN D'ASCENDIS	PAGE
Direct Examination By Mr. Bennink.....	12
Prefiled Direct Testimony.....	14
Cross Examination By Mr. Grantmyre.....	70
Redirect Examination By Mr. Bennink.....	102
Examination By Chairman Finley.....	106
Cross Examination By Ms. Force.....	111
Recross Examination By Mr. Grantmyre.....	112
Further Redirect Examination	113
By Mr. Bennink	
JOHN HINTON	PAGE
Direct Examination By Mr. Grantmyre.....	117
Prefiled Direct Testimony.....	120
Prefiled Supplemental Testimony.....	120
Examination By Commissioner Mitchell.....	174
Redirect Examination By Mr. Grantmyre.....	176
DYLAN D'ASCENDIS	PAGE
Direct Rebuttal Examination	178
By Mr. Bennink	
Prefiled Rebuttal Testimony.....	179
Cross Examination By Ms. Force.....	220
Cross Examination By Mr. Grantmyre.....	233

1	DEBORAH CLARK	PAGE
2	Direct Examination By Mr. Bennink.....	238
3	Prefiled Direct Testimony.....	239
4	Examination By Commissioner Brown-Bland...	251
5	Redirect Examination By Mr. Bennink.....	254
6	DANTE DESTEFANO	PAGE
7	Direct Examination By Ms. Sanford.....	256
8	Prefiled Direct Testimony of	259
9	Richard Linneman, As Adopted By	
	Dante DeStefano	
10	Cross Examination By Ms. Force.....	282
11	Examination By Commissioner Clodfelter....	289
12	GINA CASSELBERRY	PAGE
13	Direct Examination By Mr. Little.....	293
14	Prefiled Direct Testimony and	295
15	Prefiled Supplemental Testimony	
16	Cross Examination By Ms. Sanford.....	337
17		
18		
19		
20		
21		
22		
23		
24		

E X H I B I T S

IDENTIFIED/ADMITTED

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

D'Ascendis Direct Exhibit..... 14/117
Number 1, Schedules DWD-1 through
DWD-8

Public Staff D'Ascendis Direct Cross . 73/117
Examination Exhibit Number 1

Public Staff D'Ascendis Direct Cross . 76/117
Examination Exhibit Number 2

Public Staff D'Ascendis Direct Cross . 81/117
Examination Exhibit Number 3

Public Staff D'Ascendis Direct Cross . 94/117
Examination Exhibit Number 4

Public Staff D'Ascendis Direct Cross . 99/117
Examination Exhibit Number 5

Hinton Exhibit Numbers JRH-1 through . 119/176
JRH-5

Supplemental Hinton Exhibit Number ... 119/176
JRH-5

D'Ascendis Rebuttal Exhibit Number 1, .179/237
Schedules DWD-1R through DWD-10R

Clark Appendix Number 1, 239/256
Exhibit Numbers 1 through 4

Clark Appendix 2, Exhibit Numbers A1 . 239/256
through A3

Linneman Exhibit Number 1, as adopted .258/292
by Dante DeStefano

Casselberry Exhibit Numbers 1..... 295/ -
Through 23

NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 10-16-18
DOCKET #: W-354 Sub 360
NAME OF ATTORNEY Jo Anne Sanford
TITLE Attorney
FIRM NAME Sanford Law Office, PLLC
ADDRESS P.O. Box 28085
CITY RALEIGH NC
ZIP 27611-8085

APPEARING FOR: CWS NC

APPLICANT COMPLAINANT _____ INTERVENOR _____
PROTESTANT _____ RESPONDENT _____ DEFENDANT _____

PLEASE NOTE: Electronic Copies of the regular transcript can be obtained from the NCUC website at [HTTP://NCUC.commerce.state.nc.us/docksrch.html](http://NCUC.commerce.state.nc.us/docksrch.html) under the respective docket number.

There will be a charge of \$5.00 for each emailed copy of transcript.

Please check for an electronic copy of the transcript.

1 # of Copies

Email: sanford@sanfordlawoffice.com
(Required for distribution)

Please check for the confidential portion of the transcript, only if a confidentiality agreement has been signed.

____ # of Copies

Signature: Jo Anne Sanford
(Required for distribution)

NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE October 16, 2018
DOCKET # : W-354, Sub 360
NAME OF ATTORNEY Robert H. Benmink, Jr.
TITLE ATTORNEY
FIRM NAME BENMINK LAW OFFICE
ADDRESS 130 MURPHY DRIVE
CITY CHRY, NC
ZIP 27513

APPEARING FOR: CAROLINA WATER SERVICE, INC. OF NC

APPLICANT _____
COMPLAINANT _____
INTERVENOR R _____
PROTESTANT _____
RESPONDENT _____
DEFENDANT _____

PLEASE NOTE: Electronic copies of the regular transcript can be obtained from the NCU website at [HTTP://NCUC.commerce.state.nc.us/docksr.ch.html](http://ncuc.commerce.state.nc.us/docksr.ch.html) under the respective docket number.

There will be a charge of \$5.00 for each emailed copy of transcript.

Please check for an electronic copy of the transcript. _____ # of copies

Email: _____

(Required for distribution)

Please check for the confidential portion of the transcript, only if a confidentiality agreement has been signed. _____ # of copies

Signature: _____

(Required for distribution)

NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 10/16/2018
DOCKET #: W-354 sub 360
NAME OF ATTORNEY Brady W Allen
TITLE attorney
FIRM NAME Allen Law Offices, PLLC
ADDRESS 1514 Glenwood Ave Ste 200
CITY Raleigh, NC 27609
ZIP _____

APPEARING FOR: Carolla Light Community Association, Inc

APPLICANT _____ COMPLAINANT _____ INTERVENOR R ✓
PROTESTANT _____ RESPONDENT _____ DEFENDANT _____

PLEASE NOTE: Electronic Copies of the regular transcript can be obtained from the NCUC website at [HTTP://NCUC.commerce.state.nc.us/docksr ch.html](http://NCUC.commerce.state.nc.us/docksr ch.html) under the respective docket number.

There will be a charge of \$5.00 for each emailed copy of transcript.

Please check for an electronic copy of the transcript.
____ # of Copies

Email: _____
(Required for distribution)

Please check for the confidential portion of the transcript, only if a confidentiality agreement has been signed.
____ # of Copies

Signature: _____
(Required for distribution)

**NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP**

DATE 10/6/18
 DOCKET # : W-354 Sub 340
 NAME OF ATTORNEY Margaret Forre
 TITLE Assistant Attorney General
 FIRM NAME NJC Department of Justice
 ADDRESS P O Box 629
 CITY Raleigh
 ZIP 27602

APPEARING FOR:

APPLICANT _____
 COMPLAINANT _____
 INTERVENOR R _____
 PROTESTANT _____
 RESPONDENT _____
 DEFENDANT _____

PLEASE NOTE: Electronic copies of the regular transcript can be obtained from the NCU website at [HTTP://NCUC.commerce.state.nc.us/dockets.ch.html](http://ncuc.commerce.state.nc.us/dockets.ch.html) under the respective docket number.

There will be a charge of \$5.00 for each emailed copy of transcript.

Please check for an electronic copy of the transcript. 1 # of copies

Email: Plare@ncdj.gov (Required for distribution)

Please check for the confidential portion of the transcript, only if a confidentiality agreement has been signed. 1 # of copies

Signature: Margaret Forre (Required for distribution)

NORTH CAROLINA UTILITIES COMMISSION
PUBLIC STAFF - APPEARANCE SLIP

DATE 10-16-18 DOCKET # W-354, Sub 360

PUBLIC STAFF MEMBER Gina C. Holt

ORDER FOR TRANSCRIPT OF TESTIMONY TO BE **EMAILED** TO THE PUBLIC STAFF - PLEASE INDICATE YOUR DIVISION AS WELL AS YOUR EMAIL ADDRESS BELOW:

ACCOUNTING _____

WATER Gina.Casselberry@PSncuc.nc.gov

COMMUNICATIONS _____

ELECTRIC _____

GAS _____

TRANSPORTATION _____

ECONOMICS _____

LEGAL gina.holt@psncuc.nc.gov

CONSUMER SERVICES John.Little@psncuc.nc.gov

William.Grantmyre@psncuc.nc.gov

PLEASE NOTE: Electronic Copies of the regular transcript can be obtained from the NCUC web site at [HTTP://NCUC.commerce.state.nc.us/docksrch.html](http://NCUC.commerce.state.nc.us/docksrch.html) under the respective docket number.

Number of copies of Confidential portion of regular transcript (assuming a confidentiality agreement has been signed). Confidential pages will still be received in paper copies.

***PLEASE INDICATE BELOW WHO HAS SIGNED A CONFIDENTIALITY AGREEMENT. IF YOU DO NOT SIGN, YOU WILL NOT RECEIVE THE CONFIDENTIAL PORTIONS!!!!

Gina C. Holt

Signature of Public Staff Member

I/A

FILED 101-7

SEP 05 REC'D

Carolina Water Service, Inc. of North Carolina
Table of Contents
to D'Ascendis Direct Exhibit No. 1

Clerk's Office
N.C. Utilities Commission

	<u>Schedule</u>
Summary of Cost of Capital and Fair Rate of Return	DWD-1
Financial Profile of the Utility Proxy Group	DWD-2
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model	DWD-3
Indicated Common Equity Cost Rate Using the Risk Premium Model	DWD-4
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model	DWD-5
Basis of selection for the Non-Price Regulated Companies Comparable in Total Risk to the Utility Proxy Group	DWD-6
Cost of Common Equity Models Applied to the Comparable Risk Non-Price Regulated Companies	DWD-7
Estimated Market Capitalization for Carolina Water Service, Inc. of North Carolina and the Utility Proxy Group	DWD-8

Carolina Water Services, Inc. of North Carolina
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at December 31, 2017

<u>Type Of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	47.11%	6.00% (1)	2.83%
Common Equity	<u>52.89%</u>	11.50% - 11.90% (2)	<u>6.08%</u> - <u>6.29%</u>
Total	<u>100.00%</u>		<u>8.91%</u> <u>9.12%</u>

Notes:

(1) Company-Provided.

(2) From page 2 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Brief Summary of Common Equity Cost Rate

<u>Line No.</u>	<u>Principal Methods</u>	<u>Proxy Group of Six Water Companies</u>
1.	Discounted Cash Flow Model (DCF) (1)	9.10%
2.	Risk Premium Model (RPM) (2)	12.12%
3.	Capital Asset Pricing Model (CAPM) (3)	11.31%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>12.63%</u>
5.	Indicated Common Equity Cost Rate before Adjustment for Size Risk	11.50%
6.	Size Risk Adjustment (5)	<u>0.40%</u>
7.	Indicated Common Equity Cost Rate	<u>11.90%</u>
8.	Range of Common Equity Cost Rates	<u>11.50% - 11.90%</u>

- Notes: (1) From Schedule DWD-3.
(2) From page 1 of Schedule DWD-4.
(3) From page 1 of Schedule DWD-5.
(4) From page 1 of Schedule DWD-7.
(5) From Schedule DWD-8.

Proxy Group of Six Water Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2012-2016, Inclusive

	2017	2016	2015	2014	2013	
	(MILLIONS OF DOLLARS)					
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	\$3,164.203	\$2,984.170	\$2,830.411	\$2,686.017	\$2,572.465	
SHORT-TERM DEBT	\$211.958	\$175.773	\$118.223	\$94.412	\$123.719	
TOTAL CAPITAL EMPLOYED	<u>\$3,376.161</u>	<u>\$3,159.943</u>	<u>\$2,948.634</u>	<u>\$2,780.429</u>	<u>\$2,696.184</u>	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	4.78 %	4.927 %	5.02 %	5.162 %	5.33 %	
PREFERRED STOCK	5.91 %	5.91 %	5.91 %	5.67 %	6.09 %	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	45.27 %	45.38 %	45.90 %	44.69 %	45.25 %	45.30 %
PREFERRED STOCK	0.12	0.13	0.13	0.14	0.18	0.14
COMMON EQUITY	54.61	54.49	53.97	55.17	54.57	54.56
TOTAL	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	48.90 %	47.91 %	47.03 %	46.27 %	47.02 %	47.43 %
PREFERRED STOCK	0.11	0.12	0.13	0.14	0.16	0.13
COMMON EQUITY	50.99	51.97	52.84	53.60	52.82	52.44
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>
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.42 %	3.63 %	4.38 %	4.88 %	4.91 %	4.25 %
MARKET / AVERAGE BOOK RATIO	318.59	290.78	239.19	223.55	214.84	257.39
DIVIDEND YIELD	1.71	2.19	2.65	2.77	2.89	2.44
DIVIDEND PAYOUT RATIO	59.30	60.14	60.04	56.31	57.21	58.60
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.89 %	10.57 %	10.43 %	10.90 %	10.61 %	10.68 %
TOTAL DEBT / EBITDA (3)	3.56 X	3.51 X	3.43 X	3.31 X	3.45 X	3.45 X
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	22.69 %	22.50 %	26.10 %	26.48 %	24.11 %	24.38 %
TOTAL DEBT / TOTAL CAPITAL	48.90 %	47.91 %	47.03 %	46.27 %	47.02 %	47.42 %

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: Company Annual Forms 10-K

**Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Six Water Companies
2012 - 2016, Inclusive**

	2017	2016	2015	2014	2013	5 YEAR AVERAGE
<u>American States Water Co.</u>						
Long-Term Debt	37.75 %	39.40 %	41.15 %	39.15 %	40.30 %	39.55 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	62.25	60.60	58.85	60.85	59.70	60.45
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>American Water Works Company Inc</u>						
Long-Term Debt	55.81 %	54.74 %	53.89 %	52.70 %	52.42 %	53.91 %
Preferred Stock	0.07	0.09	0.11	0.15	0.17	0.12
Common Equity	44.12	45.17	46.00	47.15	47.41	45.97
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Aqua America Inc</u>						
Long-Term Debt	52.26 %	50.81 %	50.76 %	49.45 %	50.32 %	50.72 %
Preferred Stock	0.00	0.00	0.00	0.00	0.01	0.00
Common Equity	47.74	49.19	49.24	50.55	49.67	49.28
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>California Water Service Group</u>						
Long-Term Debt	44.12 %	45.83 %	44.69 %	40.46 %	42.03 %	43.43 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	55.88	54.17	55.31	59.54	57.97	56.57
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Middlesex Water Co.</u>						
Long-Term Debt	38.65 %	38.91 %	40.44 %	41.55 %	41.37 %	40.18 %
Preferred Stock	0.64	0.68	0.69	0.71	0.88	0.72
Common Equity	60.71	60.41	58.87	57.74	57.75	59.10
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>York Water Co.</u>						
Long-Term Debt	43.02 %	42.60 %	44.46 %	44.81 %	45.07 %	43.99 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	56.98	57.40	55.54	55.19	54.93	56.01
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Proxy Group of Six Water Companies</u>						
Long-Term Debt	45.27 %	45.38 %	45.90 %	44.69 %	45.25 %	45.30 %
Preferred Stock	0.12	0.13	0.13	0.14	0.18	0.14
Common Equity	54.61	54.49	53.97	55.17	54.57	54.56
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>

Source of Information
Annual Forms 10-K

Carolina Water Services, Inc. of North Carolina
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Six Water Companies</u>	<u>Average Dividend Yield (1)</u>	<u>Value Line Projected Five Year Growth In EPS (2)</u>	<u>Reuters Mean Consensus Projected Five Year Growth Rate in EPS</u>	<u>Zack's Five Year Projected Growth Rate in EPS</u>	<u>Yahoo! Finance Projected Five Year Growth In EPS</u>	<u>Average Projected Five Year Growth In EPS (3)</u>	<u>Adjusted Dividend Yield (4)</u>	<u>Indicated Common Equity Cost Rate (5)</u>
American States Water Co.	1.89 %	6.50 %	4.00 %	5.00 %	4.00 %	4.88 %	1.94 %	6.82 %
American Water Works Company Inc	2.04	8.50	10.60	7.50	8.20	8.70	2.13	10.83
Aqua America Inc	2.36	7.00	7.00	6.00	5.00	6.25	2.43	8.68
California Water Service Group	1.88	10.00	NA	6.00	9.80	8.60	1.96	10.56
Middlesex Water Co.	2.43	9.00	NA	NA	2.70	5.85	2.50	8.35
York Water Co.	2.18	9.50	NA	NA	4.90	7.20	2.26	9.46
							Average	<u>9.12 %</u>
							Median	<u>9.07 %</u>
							Average of Mean and Median	<u>9.10 %</u>

NA= Not Available

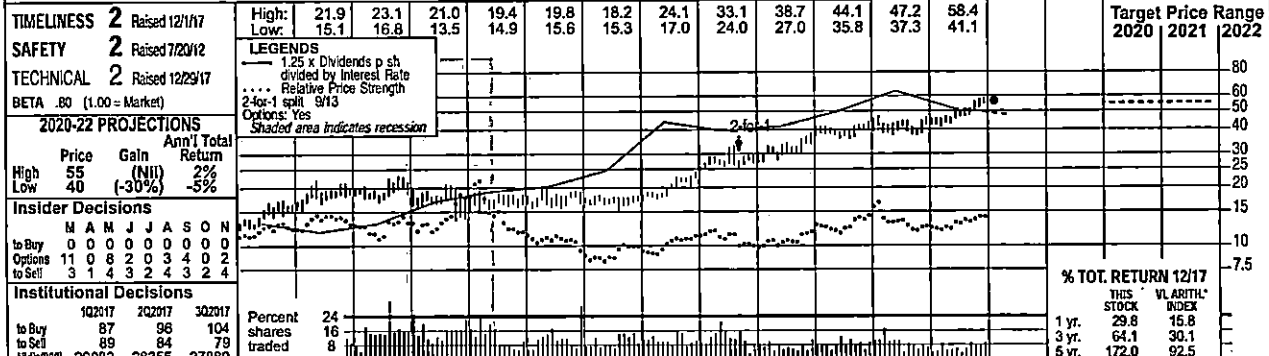
Notes:

- (1) Indicated dividend at 03/29/2018 divided by the average closing price of the last 60 trading days ending 03/29/2018 for each company.
- (2) From pages 2 through 7 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., $1.89\% \times (1 + (1/2 \times 4.88\%)) = 1.94\%$.
- (5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
www.reuters.com Downloaded on 03/29/2018
www.zacks.com Downloaded on 03/29/2018
www.yahoo.com Downloaded on 03/29/2018

AMER. STATES WATER NYSE-AWR										RECENT PRICE	56.40		P/E RATIO	32.0 (Trailing: 30.8 Median: 20.0)		RELATIVE P/E RATIO	1.56		DIV'D YLD	1.9%		VALUE LINE
------------------------------------	--	--	--	--	--	--	--	--	--	--------------	--------------	--	-----------	---	--	--------------------	-------------	--	-----------	-------------	--	------------



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
6.53	6.89	6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.40	12.65	12.17	12.56	11.92	12.40	12.65
1.26	1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.85	3.05	3.05	3.05	3.05	3.05	3.05
.67	.67	.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.60	1.62	1.85	1.85	1.85	1.85	1.85	1.85	1.85
.43	.44	.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.06	1.06	1.06	1.06	1.06
1.59	1.34	1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.42	2.13	1.77	2.52	1.89	2.39	3.55	3.15	3.15	3.15	3.15	3.15	3.15	3.15
6.61	7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.20	14.85	14.85	14.85	14.85	14.85	14.85
30.24	30.36	30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.70	36.80	36.80	36.80	36.80	36.80	36.80
16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	26.1	26.1	26.1	26.1	26.1	26.1	26.1
.86	1.00	1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.35	1.27	1.27	1.27	1.27	1.27	1.27	1.27
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%	2.6%	2.2%	2.2%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

CAPITAL STRUCTURE as of 9/30/17
Total Debt \$367.3 mill. Due in 5 Yrs \$41.7 mill.
LT Debt \$321.0 mill. LT Interest \$21.3 mill. (38% of Cap)

Leases, Uncapitalized: Annual rentals \$2.5 mill.
Pension Assets-12/16 \$150.9 mill.
Pfd Stock None. Oblig. \$180.4 mill.

Common Stock 36,679,175 shs. as of 10/1/17

MARKET CAP: \$2.1 billion (Mid Cap)

CURRENT POSITION	2015	2016	9/30/17 (\$MILL)
Cash Assets	4.4	4	6.7
Accts Receivable	18.9	20.0	29.4
Other	109.4	146.5	110.6
Current Assets	132.7	166.9	146.7
Accts Payable	50.6	43.7	53.8
Debt Due	28.3	90.3	46.3
Other	44.6	43.9	51.8
Current Liab.	123.5	177.9	151.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '21-'22
Revenues	5.5%	3.0%	4.5%
"Cash Flow"	7.5%	6.5%	6.0%
Earnings	10.0%	9.5%	6.5%
Dividends	7.0%	10.5%	7.5%
Book Value	5.5%	5.0%	4.0%

Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	102.0	115.6	138.3	109.9	465.8
2015	100.9	114.6	133.0	110.1	458.6
2016	93.5	112.0	123.8	106.8	436.1
2017	98.8	113.2	124.4	108.6	445
2018	102	118	135	115	470

Cal-endar	EARNINGS PER SHARE A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	.28	.39	.54	.36	1.57
2015	.32	.41	.56	.31	1.60
2016	.28	.45	.59	.30	1.62
2017	.34	.62	.57	.32	1.85
2018	.39	.48	.60	.38	1.85

Cal-endar	QUARTERLY DIVIDENDS PAID B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2014	.2025	.2025	.213	.213	.83
2015	.213	.213	.224	.224	.87
2016	.224	.224	.224	.242	.91
2017	.242	.242	.255	.255	.99
2018					

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to 261,002 customers in 75 cities and 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to 23,940 customers in the city of Big Bear Lake and in areas of San Bernardino County. Sold Chaparral City Water of Arizona (6/11). Has 736 employees. BlackRock, Inc. owns 11.7% of out shares; Vanguard, 9.5%; off. & dir. 1.5% (4/17 Proxy). Chairman: Lloyd Ross. President & Chief Executive Officer: Robert J. Sprows, Inc. CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water has solid earnings prospects. We estimate that the water utility earned \$1.85 per share in 2017, thanks, in part, to an unusual gain resulting from the sale of certain assets. Even without this windfall, however, the company would still have likely recorded a 6% increase in its share net. The positive momentum from its core water operations should enable the company's share net to reach \$1.85 once again in 2018. Our earnings forecasts are based upon constructive regulatory treatment. As is the protocol in California, a utility petitions state authorities for rate relief every three years. The company's Golden Gate Water subsidiary filed a general case in July of last year. The application is for the years 2019, 2020, and 2021. A final decision is expected by the end of 2018. The California Public Utility Commission has been reasonable in the past, as it has worked with utilities that have had to spend heavily to upgrade antiquated pipeline systems as well as successfully get customers to reduce consumption because of droughts. The nonregulated business provides

opportunity for growth. No matter how efficiently a utility is run, its profitability is limited to what state regulators allow. Through its ASUS business, which represents about 20% of net income, the company has been involved in taking over the management of water systems of major U.S. military installation. ASUS has already signed several 50-year contracts, and we expect to see more agreements reached in the coming years as privatization in this sector increases. Timely shares of American States have been doing well, of late. Since our last report three months ago, AWR has increased over 10%. By comparison, the S&P 500 has risen only about 6%. Typically, water stocks have been defensive investments for those seeking income. This pattern has changed, possibly due to the limited amount of shares available in the large-cap sector of the water industry. Indeed, AWR is now trading above our projected 2020-2022 Target Price Range. Also, potential interest rates hikes by the Federal Reserve may now make this group less suitable for conservative accounts. James A. Flood January 12, 2018

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7c; '05, 13c; '06, 3c; '08, (14c); '10, (23c); '11, 10c. Next earnings report due early February.

(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.

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

AMERICAN WATER NYSE-AWK		RECENT PRICE	89.08	PIE RATIO	28.1	(Trailing: 30.2 Median: NMF)	RELATIVE PIE RATIO	1.37	DIV YLD	2.0%	VALUE LINE				
TIMELINESS	2 Raised 11/17/17	High: 23.7	23.0	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	Target Price Range	2020	2021	2022
SAFETY	3 New 7/25/08	Low: 16.5	16.2	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0				
TECHNICAL	3 Lowered 1/12/18														
BETA	.65 (1.00 = Market)	LEGENDS - - - - 0.85 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession													
2020-22 PROJECTIONS		Ann'l Total Price Gain Return High 90 (Nil) 3% Low 60 (-35%) -6%													
Insider Decisions		M A M J J A S O N to Buy 0 0 0 0 0 0 0 0 0 0 to Sell 2 0 2 0 0 1 0 0 3													
Institutional Decisions		10/20/17 20/20/17 30/20/17 to Buy 269 281 262 to Sell 302 291 292 Net (000) 160388 158865 160782 Percent shares traded: 21, 14, 7													
% TOT. RETURN 12/17		THIS STOCK VS. S&P 500 INDEX 1 yr. 29.0 15.8 3 yr. 83.1 30.1 5 yr. 175.2 92.5													
CAPITAL STRUCTURE as of 9/30/17		Total Debt \$7462.0 mil. Due in 5 Yrs \$1698.0 mil. LT Debt \$6672.0 mil. LT Interest \$349.0 mil. (55% of Cap'l) Leases, Uncapitalized: Annual rentals \$14.0 mil. Pension Assets 12/16 \$1443.0 mil. Oblig. \$1864.0 mil. Pfd Stock \$9.0 mil. Pfd Div'd \$5.5 mil. Common Stock 178,375,400 shs. as of 10/26/17 MARKET CAP: \$15.9 billion (Large Cap)													
CURRENT POSITION		2015 2016 9/30/17 Cash Assets 45.0 75.0 93.0 Accts Receivable 255.0 269.0 312.0 Other 357.0 440.0 455.0 Current Assets 657.0 784.0 860.0 Accts Payable 126.0 154.0 144.0 Debt Due 682.0 1423.0 790.0 Other 725.0 815.0 813.0 Current Liab. 1533.0 2392.0 1747.0													
ANNUAL RATES of change (per sh)		Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-'22 Revenues 3.0% 3.5% 4.5% "Cash Flow" 23.0% 8.5% 6.5% Earnings -- 11.0% 8.5% Dividends -- 9.0% 10.0% Book Value 1.5% 4.0% 5.5%													
QUARTERLY REVENUES (\$ mil.)		Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 679.0 754.8 846.1 731.4 3011.3 2015 698.0 782.0 896.0 783.0 3159.0 2016 743.0 827.0 930.0 802.0 3302.0 2017 756.0 844.0 936.0 844 3380 2018 770 895 1040 895 3600													
EARNINGS PER SHARE		Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .39 .62 .86 .52 2.39 2015 .44 .68 .96 .56 2.64 2016 .46 .77 .83 .57 2.62 2017 .52 .73 1.13 .62 3.00 2018 .58 .84 1.19 .69 3.30													
QUARTERLY DIVIDENDS PAID		Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .28 .31 .31 .31 1.21 2015 .31 .34 .34 .34 1.33 2016 .34 .375 .375 .375 1.47 2017 .375 .415 .415 .415 1.62 2018													
BUSINESS: American Water Works Company, Inc.		is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in over 47 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86.5% of 2016 revenues.													
American Water Works' prospects are bright.		In a December investor presentation, management stated once again that the in-house target for annual growth over the next five-year period for both earnings and dividends is at the high end of the 7% to 10% range. This is well above the projected industry average.													
Acquisitions and cost controls will likely remain the twin pillars of the utility's operating strategy.		The water industry in the United States is very fragmented and inefficient. As a result, there are many small and midsize water authorities that do not have the funds required to make the necessary upgrades to their aging water facilities. Hence, American Water has a continual pipeline of purchases in the works. The company is able to integrate these new additions into its asset base while achieving substantial cost savings. Moreover, regulators are happy (more below) when utilities can provide better service at a lower price.													
Regulators will probably have a major say in the company's future performance.		As the utility continues to expand, its relationship with different state water authorities should become even more important as it will have to file more rate cases. On the positive side of the ledger, American Water's internal (non-GAAP) operating expense margin continues to decline. Indeed, the ratio has decreased from 44% in 2010 to about 34% this year. The goal is 32.5% by 2020-2022. In any case, being able to quantify savings keeps a utility in the good graces of those ruling on rate filings.													
The capital budget has been raised substantially.		Even though the company is already in the midst of a major construction program, management just increased the estimated outlays by about \$1 billion to bring the new expected five-year total to somewhere between \$8.0 billion and \$8.6 billion. American Water's finances are average, and probably will remain so for the next several years.													
These timely shares will most likely not interest long-term investors.		AWK has outperformed the broader market averages, of late. Indeed, the stock recently traded above our projected 2020-2022 Target Price Range.													
James A. Flood		January 12, 2018													

(A) Diluted earnings. Excludes nonrecurring losses: '08, \$4.62; '09, \$2.63; '11, \$0.07. Discontinued operations: '06, (\$0.04); '11, \$0.03; '12, (\$0.10); '13, (\$0.01). GAAP used as of 2014. Next earnings report due mid-February. Quarterly earnings do not sum in '16 due to rounding. (B) Dividends paid in March, June, September, and December. = Div. reinvest. ment available. (C) In millions. (D) Includes intangibles. On 9/30/17: \$1.373 billion, \$7.70/share. (E) Pro forma numbers for '06 & '07. Company's Financial Strength B+ Stock's Price Stability 100 Price Growth Persistence 85 Earnings Predictability 90

To subscribe call 1-800-VALUELINE

AQUA AMERICA NYSE-WTR		RECENT PRICE 38.65		P/E RATIO 27.4 (Trailing: 29.1 Median: 22.0)		RELATIVE P/E RATIO 1.34		DIVD YLD 2.2%		VALUE LINE							
TIMELINESS 2 Raised 11/17/17	High: 23.8	21.3	17.6	17.2	18.4	19.0	21.5	28.1	28.2	31.1	35.8	39.6	Target Price 2020	2021	2022		
SAFETY 2 Raised 4/20/12	Low: 16.1	15.1	9.8	12.3	13.2	15.4	16.8	20.6	22.4	24.4	28.0	29.4					
TECHNICAL 3 Lowered 1/5/18	LEGENDS - - - - 1.60 x Dividends p sh divided by Interest Rate Relative Price Strength 4-for-3 split 12/05 5-for-4 split 9/13 Options: Yes Shaded area indicates recession																
BETA .75 (1.00 = Market)																	
2020-22 PROJECTIONS												Ann'l Total Return High 45 (+15%) Low 35 (-10%)		6% Nil			
Insider Decisions												to Buy 7 0 0 0 0 0 0 0 0 0		Options 7 0 1 7 0 1 8 0		to Sell 0 0 0 2 0 1 0 1	
Institutional Decisions												to Buy 179 172 187		to Sell 180 165 120		Net's (000) 103594 104564 105796	
Percent shares traded 15 10 5												% TOT. RETURN 12/17 1 yr. 33.8 3 yr. 58.1 5 yr. 118.0		V. ASSTH. INDEX 15.8 30.1 92.5			
2011 2.16 2.28 2.38 2.78 3.08 3.23 3.61 3.71 3.93 4.21 4.10 4.32 4.32 4.37 4.61 4.62 4.50 4.70 2012 .69 .76 .77 .87 .97 1.01 1.10 1.14 1.29 1.42 1.45 1.51 1.82 1.89 1.87 2.07 2.15 2.25 2013 .41 .43 .46 .51 .57 .56 .57 .58 .62 .72 .83 .87 1.16 1.20 1.14 1.32 1.36 1.45 2014 .24 .26 .28 .29 .32 .35 .38 .41 .44 .47 .50 .54 .58 .63 .69 .74 .79 1.15 2015 .87 .96 1.06 1.23 1.47 1.64 1.43 1.58 1.66 1.89 1.90 1.98 1.73 1.84 2.07 2.16 2.55 2.45 2016 3.32 3.49 4.27 4.71 5.04 5.57 5.85 6.26 6.50 6.81 7.21 7.90 8.63 9.27 9.78 10.43 11.10 11.75 2017 142.47 141.49 154.31 158.97 161.21 165.41 166.75 169.21 170.61 172.46 173.60 175.43 177.93 178.59 176.54 177.39 178.00 178.50 2018 23.6 23.6 24.5 25.1 31.8 34.7 32.0 24.9 23.1 21.1 21.3 21.9 21.2 20.8 23.5 23.9 24.5 24.5 2019 1.21 1.29 1.40 1.33 1.69 1.87 1.70 1.50 1.54 1.34 1.34 1.39 1.19 1.09 1.18 1.26 1.20 1.20 2020 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% 2.6% 2.6% 2.3% 2.4% 2.4%												Revenues per sh 6.05 "Cash Flow" per sh 2.75 Earnings per sh A 1.85 Div'd Decl'd per sh B 1.15 Cap'l Spending per sh 2.25 Book Value per sh 14.85 Common Shs Outs'tg C 160.00 Avg Ann'l P/E Ratio 21.0 Relative P/E Ratio 1.30 Avg Ann'l Div'd Yield 2.9%					
CAPITAL STRUCTURE as of 9/30/17												Total Debt \$2058.2 mill. Due in 5 Yrs \$430.5 mill. LT Debt \$1952.5 mill. LT Interest \$80.0 mill. (50% of Cap'l)		Revenues (\$mill) 1065 Net Profit (\$mill) 335 Income Tax Rate 10.0% AFUDC % to Net Profit 3.5%			
Pension Assets-12/16 \$242.4 mill.												55.4% 54.1% 55.6% 56.6% 52.7% 52.7% 48.9% 48.5% 50.3% 48.4% 47.0% 49.0% 44.6% 45.9% 44.4% 43.4% 47.3% 47.3% 51.1% 51.5% 49.7% 51.6% 53.0% 51.0%		Long-Term Debt Ratio 51.0% Common Equity Ratio 49.0%			
Pfd Stock None												2191.4 2306.6 2485.5 2706.2 2646.8 2929.7 3003.6 3216.0 3469.5 3587.7 3735 4100 2792.8 2997.4 3227.3 3469.3 3612.9 3936.2 4167.3 4402.0 4688.9 5001.6 5080 5275		Total Capital (\$mill) 5500 Net Plant (\$mill) 5800			
Common Stock 177,690,598 shares as of 10/20/17												5.9% 5.7% 5.6% 5.9% 6.9% 6.6% 8.0% 7.8% 6.9% 7.6% 7.5% 7.5% 9.7% 9.3% 9.4% 10.6% 11.6% 11.0% 13.4% 12.9% 11.7% 12.7% 12.5% 12.5%		Return on Total Cap'l 7.5% Return on Shr. Equity 12.5% Return on Com Equity 12.5%			
MARKET CAP: \$6.9 billion (Large Cap)												9.7% 9.3% 9.4% 10.6% 11.6% 11.0% 13.4% 12.9% 11.7% 12.7% 12.5% 12.5%		Retained to Com Eq 4.5% All Div'ds to Net Prof 62%			
CURRENT POSITION (MILL)												2015 3.2 2.8 2.7 3.7 4.6 4.3 6.7 6.1 2016 6.7 7.0 7.2 6.5 6.0 6.1 5.0 5.2		2015 3.2 3.7 4.1 2016 99.1 97.4 104.9 Inventory (AvgCst) 12.4 13.0 16.6 Other 13.7 14.6 12.7 Current Assets 128.4 128.7 138.3 Acc'ts Payable 56.5 59.9 63.4 Debt Due 52.3 157.2 105.7 Other 84.4 84.4 83.9 Current Liab. 193.2 301.5 253.0			
ANNUAL RATES of change (per sh)												10 Yrs. 4.0% 2.0% 5.0% 5 Yrs. 7.5% 7.0% 6.0% Est'd '14-'16 8.5% 11.0% 7.0% Dividends 8.0% 8.0% 9.0% Book Value 7.0% 7.5% 6.5%		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. Has 1,551 employees. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues '2016: residential, 59%; commercial, 16%; industrial, wastewater & other, 25%. Off. & dir. own less than 1% of the common stock; Vanguard Group, 8.9%; Blackrock, Inc, 8.1%; State Street Capital, 6.0% (3/17 Proxy). President & Chief Executive Officer: Christopher Franklin. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Tel: 610-525-1400. Internet: www.aquaamerica.com.			
Our earnings estimates for Aqua America remain unchanged. But we have lowered our revenue forecast for both last year's fourth quarter and 2018 as water sales have been declining. On the positive side, the water utility's operating expenses have been decreasing at a higher rate thanks to lower power and chemical costs. Indeed, we think Aqua's 2017 share net came in at \$1.36, versus 2016's tough \$1.32 comparison. Rate relief granted by several states over the past 12 months will be in effect all of this year. This, plus expected new hikes in Virginia and Indiana, should enable Aqua's share earning to climb a healthy 7%, to \$1.45.												to realize significant cost saving because the industry is rife with redundancies. The company's acquisitions made through September of last year combined with organic growth, led to only a 0.8% increase in the customer base. Management has targeted annual growth to be approximately 1.5%-2.0%, so we expect the pace to possible accelerate here.					
Acquisitions are being made at a modest pace. Due to the fragmentation in the market (there are over 100,000 separate water districts in the U.S.), large-cap water utilities such as Aqua are continuously buying small water entities. Also, most of these authorities do not have the funds required to replace and upgrade their aging network of pipes and waste systems. Not only do the bigger water entities have the funds available for the needed capital outlays, they are also able												Aqua has a healthy balance sheet. Of the nine members in this group, only two merit an "A" Financial Strength rating. This leaves the company with the capacity to borrow to buy more water assets. In addition, Aqua's policy of hardly issuing any new equity is a real positive. With the stock near its all-time high, a new equity offering would probably be well received, as institutional demand for large-cap water utilities stock remains strong.					
These shares are timely. Also, even though WTR's long-term total return potential isn't great, it is more attractive than most other mid- and large-cap stocks in this group. So, investors that must own a water utility equity may find WTR of interest.												James A. Flood January 12, 2018					
Cal-endar QUARTERLY REVENUES (\$mill.) Full Year Mar.31 Jun.30 Sep.30 Dec.31 2014 182.7 195.3 210.5 191.4 779.9 2015 190.3 205.8 221.0 197.1 814.2 2016 192.6 203.9 226.6 196.8 819.9 2017 187.8 203.4 215.0 193.8 800 2018 195 215 225 205 840				Cal-endar EARNINGS PER SHARE A Full Year Mar.31 Jun.30 Sep.30 Dec.31 2014 .24 .31 .38 .27 1.20 2015 .27 .32 .38 .17 1.14 2016 .29 .34 .41 .28 1.32 2017 .28 .34 .43 .31 1.36 2018 .30 .37 .46 .32 1.45				Cal-endar QUARTERLY DIVIDENDS PAID B Full Year Mar.31 Jun.30 Sep.30 Dec.31 2014 .152 .152 .165 .165 .63 2015 .165 .165 .178 .178 .69 2016 .178 .178 .1913 .1913 .74 2017 .1913 .1913 .2047 .2047 .79 2018									
(A) Diluted egs. Excl. nonrec. gains: '01, 2¢; '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. 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 A Stock's Price Stability 95 Price Growth Persistence 65 Earnings Predictability 90																	

CALIFORNIA WATER NYSE-CWT										RECENT PRICE	P/E RATIO 30.0 (Trailing: 31.5 Median: 20.0)					RELATIVE P/E RATIO 1.46	DIV'D YLD 1.6%	VALUE LINE						
TIMELINESS 2	Raised 9/1/17	High: 22.9	22.7	23.3	24.1	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2											
SAFETY 3	Lowered 7/27/17	Low: 16.4	17.1	13.8	16.7	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4											
TECHNICAL 2	Raised 12/22/17											Target Price 2020	2021	2022										
BETA .80	(1.00 = Market)	LEGENDS 1.33 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 8/11 Options: Yes Shaded area indicates recession																						
2020-22 PROJECTIONS Ann'l Total High Price 50 (+10%) Low Price 35 (-20%) Gain 10% Return 5% Options: Yes Shaded area indicates recession																								
Insider Decisions N A N J J A S O N to Buy 1 1 1 1 1 1 1 1 Options 22 0 0 0 0 0 0 0 to Sell 1 0 1 1 0 0 1 0																								
Institutional Decisions to Buy 102/17 97 to Sell 83 Hds*(000) 36886 202/17 88 38422 302/17 90 38931																								
Percent shares traded 18 12 6																								
% TOT. RETURN 12/17 THIS STOCK INDEX 1 yr. 36.4 3 yr. 98.1 5 yr. 181.9 PUB. 15.8 30.1 92.5																								
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22						
8.13	6.67	8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.70	14.10	Revenues per sh 15.00						
1.10	1.32	1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	2.70	2.90	"Cash Flow" per sh 3.25						
.47	.63	.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.55	Earnings per sh A 1.85						
.56	.56	.56	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	Div'd Decl'd per sh B 1.02						
2.04	2.91	2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	3.85	3.65	Cap'l Spending per sh 3.65						
6.48	6.56	7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.30	14.75	Book Value per sh C 16.50						
30.36	30.36	33.66	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.25	48.50	Common Shs Outs'g D 50.00						
27.1	19.8	22.7	20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	26.9	Avg Ann'l P/E Ratio 23.0						
1.39	1.08	1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.56	1.31	1.31	Relative P/E Ratio 1.45						
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%	2.8%	2.9%	2.3%	1.9%	1.9%	Avg Ann'l Div'd Yield 2.4%						
CAPITAL STRUCTURE as of 9/30/17 Total Debt \$750.8 mill. Due in 5 Yrs \$174.0 mill. LT Debt \$519.7 mill. LT Interest \$35.0 mill. (44% of Cap'l)																								
Pension Assets-12/16 \$376.5 mill. Obl'g. \$564.8 mill.																								
Pfd Stock None																								
Common Stock 48,015,000 shs.																								
MARKET CAP: \$2.1 billion (Mid Cap)																								
CURRENT POSITION 2015 2016 9/30/17 (\$ MILL)																								
Cash Assets 8.8 25.5 28.3 Other 118.8 116.6 152.2 Current Assets 127.6 142.1 180.5 Accts Payable 66.4 77.8 89.4 Debt Due 40.2 123.3 231.1 Other 41.9 49.1 59.9 Current Liab. 148.5 250.2 380.4																								
ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh) to '20-'22																								
Revenues 4.0% 2.0% 3.0% "Cash Flow" 5.0% 3.5% 5.5% Earnings 4.0% 3.0% 10.0% Dividends 1.5% 2.0% 7.5% Book Value 5.0% 5.0% 3.5%																								
QUARTERLY REVENUES (\$ MILL)																								
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																			
2014	110.5	158.4	191.2	137.4	597.5																			
2015	122.0	144.4	183.5	138.4	588.3																			
2016	121.7	152.4	184.3	151.0	609.4																			
2017	122.0	171.1	211.7	155.2	660																			
2018	130	175	215	165	685																			
EARNINGS PER SHARE A																								
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																			
2014	d.11	.36	.70	.24	1.19																			
2015	.03	.21	.52	.18	.94																			
2016	d.02	.24	.48	.31	1.01																			
2017	.02	.39	.70	.29	1.40																			
2018	.08	.42	.72	.33	1.55																			
QUARTERLY DIVIDENDS PAID B																								
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																			
2014	.1625	.1625	.1625	.1625	.65																			
2015	.1675	.1675	.1675	.1675	.67																			
2016	.1725	.1725	.1725	.1725	.69																			
2017	.18	.18	.18	.18	.72																			
2018																								
BUSINESS: California Water Service Group provides regulated and nonregulated water service to 482,400 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '16: residential, 72%; business, 20%; industrial, 4%; public authorities, 3%; other 1%. Off. and dir. own 1% of common stock (4/17 proxy). Has 1,163 employees. Pres. and CEO: Martin A. Kropelnicki Inc. DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.																								
California Water Service Group stock is trading around recently established all-time highs. The regulated water utility wrapped up 2017 by surging through the \$45-per-share price threshold on more than one occasion, with shares rising 33% on the year. Since our previous review, the equity is up more than 10% in value. Indeed, the investment community has handsomely rewarded the company for delivering consistent top- and bottom-line growth, quarter to quarter. However, fourth-quarter share-net may slip by two cents. For 2018, our ranking system suggests another strong performance may be in store, as CWT shares are poised to outpace the year-ahead broader market averages (Timeliness: 2). We think the positives will continue to outweigh the negatives here. California Water Service is enjoying the fruits of recent rate increases by the California regulatory authority. In fact, the decision has added more than \$30 million in incremental revenues so far. In addition, favorable changes to the corporate tax rate should help lift profits this year. To address the latter, the company's operating expenses are still on the rise, despite some progress in the second quarter. Water costs (only investment upgrades can be recouped) from greater customer usage, as well as periodic increases in wholesale supplier rates, are pushing expenses higher. Overall, we are adding \$10 million and \$0.10 to our 2018 revenue and earnings estimates, to \$685 million and \$1.55 a share, respectively. Aggressive infrastructure spending remains on tap through next decade. As previously noted, California has close to \$500 million left on its investment budget, and has earmarked the funds for upgrades to its aging infrastructure and water systems. On top of that, these improvements are likely to be accompanied by bolt-on acquisitions. This issue is best suited for short-term accounts. On the other hand, CWT shares have been on a multiyear price ascent and, as a result, total return potential 3 to 5 years out is unappealing. Thus, we think investors with a longer-term holding period can find more-attractive options elsewhere, at this time.																								
Nicholas P. Patrikis January 12, 2018																								
(A) Basic EPS. Excl. nonrecurring gain (loss): '01, '2; '02, '4; '11, '4. Next earnings report due late February.					(B) Dividends historically paid in late Feb.,					(C) Incl. intangible assets. In '16 : \$21.9 mill., \$0.46/sh.					(D) In millions, adjusted for splits.					(E) Excludes non-reg. rev.				
Company's Financial Strength B++ Stock's Price Stability 80 Price Growth Persistence 35 Earnings Predictability 65																								
To subscribe call 1-800-VALUELINE																								

© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

MIDDLESEX WATER NDQ-MSEX										RECENT PRICE	39.09		P/E RATIO	25.9 (Trailing: 31.3 Median: 20.0)		RELATIVE P/E RATIO	1.26		DIV'D YLD	2.3%		VALUE LINE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
TIMELINESS 4 Lowered 7/7/17	SAFETY 2 New 10/21/11	TECHNICAL 1 Raised 1/12/18	BETA .80 (1.00 = Market)	High: 20.5 Low: 16.5	20.2 16.9	19.8 12.0	17.9 11.6	19.3 14.7	19.4 16.5	19.6 17.5	22.5 18.6	23.7 19.1	28.0 21.2	44.5 25.0	46.7 32.2	Target Price 2020	Range 2021	2022																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
2020-22 PROJECTIONS <table border="1"> <tr> <th>Price</th> <th>Gain</th> <th>Ann'l Total Return</th> </tr> <tr> <td>High 50</td> <td>(+30%)</td> <td>9%</td> </tr> <tr> <td>Low 35</td> <td>(-10%)</td> <td>Nil</td> </tr> </table>																		Price	Gain	Ann'l Total Return	High 50	(+30%)	9%	Low 35	(-10%)	Nil																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Price	Gain	Ann'l Total Return																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
High 50	(+30%)	9%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Low 35	(-10%)	Nil																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Insider Decisions <table border="1"> <tr> <th>M</th><th>A</th><th>M</th><th>J</th><th>J</th><th>A</th><th>S</th><th>O</th><th>N</th> </tr> <tr> <td>to Buy</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td> </tr> <tr> <td>Options</td><td>0</td><td>7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td> </tr> <tr> <td>to Sell</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td> </tr> </table>																		M	A	M	J	J	A	S	O	N	to Buy	0	0	0	0	0	0	0	0	Options	0	7	0	0	0	0	0	0	to Sell	1	0	0	0	0	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
M	A	M	J	J	A	S	O	N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
to Buy	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Options	0	7	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
to Sell	1	0	0	0	0	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Institutional Decisions <table border="1"> <tr> <th>10/21/17</th> <th>7/27/17</th> <th>3/20/17</th> <th>Percent shares traded</th> </tr> <tr> <td>to Buy</td> <td>45</td> <td>60</td> <td>46</td> </tr> <tr> <td>to Sell</td> <td>51</td> <td>44</td> <td>41</td> </tr> <tr> <td>Hld's (000)</td> <td>9400</td> <td>9201</td> <td>9500</td> </tr> </table>																		10/21/17	7/27/17	3/20/17	Percent shares traded	to Buy	45	60	46	to Sell	51	44	41	Hld's (000)	9400	9201	9500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
10/21/17	7/27/17	3/20/17	Percent shares traded																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
to Buy	45	60	46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
to Sell	51	44	41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Hld's (000)	9400	9201	9500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
<table border="1"> <tr> <th>2001</th><th>2002</th><th>2003</th><th>2004</th><th>2005</th><th>2006</th><th>2007</th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>20-22</th> </tr> <tr> <td>5.87</td><td>5.98</td><td>6.12</td><td>6.25</td><td>6.44</td><td>6.16</td><td>6.50</td><td>6.79</td><td>6.75</td><td>6.60</td><td>6.50</td><td>6.98</td><td>7.19</td><td>7.28</td><td>7.77</td><td>8.16</td><td>8.10</td><td>8.55</td><td>Revenues per sh</td><td>9.40</td> </tr> <tr> <td>1.18</td><td>1.20</td><td>1.15</td><td>1.28</td><td>1.33</td><td>1.33</td><td>1.49</td><td>1.53</td><td>1.40</td><td>1.55</td><td>1.46</td><td>1.56</td><td>1.72</td><td>1.84</td><td>1.97</td><td>2.17</td><td>2.25</td><td>2.55</td><td>"Cash Flow" per sh</td><td>3.15</td> </tr> <tr> <td>.66</td><td>.73</td><td>.61</td><td>.73</td><td>.71</td><td>.82</td><td>.87</td><td>.89</td><td>.72</td><td>.96</td><td>.84</td><td>.90</td><td>1.03</td><td>1.13</td><td>1.22</td><td>1.38</td><td>1.40</td><td>1.65</td><td>Earnings per sh A</td><td>2.10</td> </tr> <tr> <td>.62</td><td>.63</td><td>.65</td><td>.66</td><td>.67</td><td>.68</td><td>.69</td><td>.70</td><td>.71</td><td>.72</td><td>.73</td><td>.74</td><td>.75</td><td>.76</td><td>.78</td><td>.81</td><td>.85</td><td>.91</td><td>Div'd Decl'd per sh B=C</td><td>1.06</td> </tr> <tr> <td>1.25</td><td>1.59</td><td>1.87</td><td>2.54</td><td>2.18</td><td>2.31</td><td>1.66</td><td>2.12</td><td>1.49</td><td>1.90</td><td>1.50</td><td>1.36</td><td>1.26</td><td>1.40</td><td>1.59</td><td>2.91</td><td>1.80</td><td>1.90</td><td>Cap'l Spending per sh</td><td>2.05</td> </tr> <tr> <td>7.11</td><td>7.39</td><td>7.60</td><td>8.02</td><td>8.26</td><td>9.52</td><td>10.05</td><td>10.03</td><td>10.33</td><td>11.13</td><td>11.27</td><td>11.48</td><td>11.82</td><td>12.24</td><td>12.74</td><td>13.40</td><td>13.95</td><td>14.65</td><td>Book Value per sh</td><td>16.75</td> </tr> <tr> <td>10.17</td><td>10.36</td><td>10.48</td><td>11.31</td><td>11.58</td><td>13.17</td><td>13.25</td><td>13.40</td><td>13.52</td><td>15.57</td><td>15.70</td><td>15.82</td><td>15.96</td><td>16.12</td><td>16.23</td><td>16.30</td><td>16.50</td><td>16.75</td><td>Common Shs Outs'g C</td><td>17.00</td> </tr> <tr> <td>24.6</td><td>23.5</td><td>30.0</td><td>26.4</td><td>27.4</td><td>22.7</td><td>21.6</td><td>19.8</td><td>21.0</td><td>17.8</td><td>21.7</td><td>20.8</td><td>19.7</td><td>18.5</td><td>19.1</td><td>25.6</td><td>28.0</td><td></td><td>Avg Ann'l P/E Ratio</td><td>21.0</td> </tr> <tr> <td>1.26</td><td>1.28</td><td>1.71</td><td>1.39</td><td>1.46</td><td>1.23</td><td>1.15</td><td>1.19</td><td>1.40</td><td>1.13</td><td>1.36</td><td>1.32</td><td>1.11</td><td>.97</td><td>.96</td><td>1.35</td><td>1.37</td><td></td><td>Relative P/E Ratio</td><td>1.30</td> </tr> <tr> <td>3.8%</td><td>3.7%</td><td>3.5%</td><td>3.4%</td><td>3.5%</td><td>3.7%</td><td>3.7%</td><td>4.0%</td><td>4.7%</td><td>4.2%</td><td>4.0%</td><td>4.0%</td><td>3.7%</td><td>3.7%</td><td>3.3%</td><td>2.3%</td><td>2.2%</td><td></td><td>Avg Ann'l Div'd Yield</td><td>2.5%</td> </tr> <tr> <td colspan="18"> CAPITAL STRUCTURE as of 9/30/17 Total Debt \$166.8 mill. Due In 5 Yrs \$32.1 mill. LT Debt \$135.8 mill. LT Interest \$6.0 mill. (Total interest coverage: 10.9x) (38% of Cap'l) Pension Assets-12/16 \$59.4 mill. Oblig. \$78.6 mill. Pfd Stock \$2.4 mill. Pfd Div'd: \$.1 mill. Common Stock 16,346,036 shs. as of 10/31/17 MARKET CAP: \$650 million (Small Cap) </td> </tr> <tr> <td colspan="18"> <table border="1"> <tr> <th>2007</th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>20-22</th> </tr> <tr> <td>86.1</td><td>91.0</td><td>91.2</td><td>102.7</td><td>102.1</td><td>110.4</td><td>114.8</td><td>117.1</td><td>126.0</td><td>132.9</td><td>134</td><td>143</td><td>160</td> </tr> <tr> <td>11.8</td><td>12.2</td><td>10.0</td><td>14.3</td><td>13.4</td><td>14.4</td><td>16.6</td><td>18.4</td><td>20.0</td><td>22.7</td><td>23.0</td><td>27.5</td><td>35.5</td> </tr> <tr> <td>32.6%</td><td>33.2%</td><td>34.1%</td><td>32.1%</td><td>32.7%</td><td>33.9%</td><td>34.1%</td><td>35.0%</td><td>34.5%</td><td>34.0%</td><td>32.0%</td><td>21.0%</td><td>21.0%</td> </tr> <tr> <td>--</td><td>--</td><td>--</td><td>6.8%</td><td>6.1%</td><td>3.4%</td><td>1.9%</td><td>1.7%</td><td>1.9%</td><td>2.7%</td><td>2.0%</td><td>2.0%</td><td>2.5%</td> </tr> <tr> <td>49.0%</td><td>45.6%</td><td>46.6%</td><td>43.1%</td><td>42.3%</td><td>41.5%</td><td>40.4%</td><td>40.5%</td><td>39.4%</td><td>37.9%</td><td>37.5%</td><td>37.0%</td><td>37.0%</td> </tr> <tr> <td>49.6%</td><td>51.8%</td><td>52.1%</td><td>55.8%</td><td>56.6%</td><td>57.4%</td><td>58.7%</td><td>58.8%</td><td>59.8%</td><td>61.5%</td><td>62.0%</td><td>62.5%</td><td>62.5%</td> </tr> <tr> <td>268.8</td><td>259.4</td><td>267.9</td><td>310.5</td><td>312.5</td><td>316.5</td><td>321.4</td><td>335.8</td><td>345.4</td><td>355.4</td><td>370</td><td>390</td><td>460</td> </tr> <tr> <td>333.9</td><td>366.3</td><td>376.5</td><td>405.9</td><td>422.2</td><td>435.2</td><td>446.5</td><td>465.4</td><td>481.9</td><td>517.8</td><td>525</td><td>535</td><td>575</td> </tr> <tr> <td>5.6%</td><td>5.8%</td><td>5.0%</td><td>5.7%</td><td>5.2%</td><td>5.4%</td><td>5.9%</td><td>6.3%</td><td>6.6%</td><td>7.1%</td><td>7.0%</td><td>7.5%</td><td>8.5%</td> </tr> <tr> <td>8.6%</td><td>8.6%</td><td>7.0%</td><td>8.1%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.2%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>12.5%</td> </tr> <tr> <td>8.7%</td><td>8.9%</td><td>7.0%</td><td>8.2%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.3%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>12.5%</td> </tr> <tr> <td>1.8%</td><td>2.0%</td><td>.1%</td><td>2.1%</td><td>1.0%</td><td>1.4%</td><td>2.4%</td><td>3.1%</td><td>3.5%</td><td>4.3%</td><td>4.0%</td><td>5.0%</td><td>6.0%</td> </tr> <tr> <td>79%</td><td>78%</td><td>98%</td><td>75%</td><td>87%</td><td>83%</td><td>73%</td><td>67%</td><td>63%</td><td>58%</td><td>61%</td><td>55%</td><td>50%</td> </tr> </table> </td> </tr> <tr> <td colspan="18"> CURRENT POSITION 2015 2016 9/30/17 (\$ MILL) Cash Assets 3.5 3.9 2.7 Other 20.9 22.8 27.4 Current Assets 24.4 26.7 30.1 Accts Payable 6.5 12.3 12.1 Debt Due 8.7 18.2 31.0 Other 13.1 16.6 15.9 Current Liab. 28.3 47.1 59.0 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 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2016, the Middlesex System accounted for 60% of operating revenues. At 12/31/16, the company had 309 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 7.2% (4/17 proxy). Add: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com. </td> </tr> <tr> <td colspan="18"> Middlesex Water Company's battle with mother nature has yet to subside. The story hasn't changed much over the past three months, as weather-related disruptions took a toll on its top line once again. Operating in the Northeast region of the U.S. leaves MSEX vulnerable to extremely volatile weather conditions, which can noticeably impact customer water consumption. Specifically, its Middlesex New Jersey operations saw revenues contract \$1.8 million, year over year, due to softer consumption, while its Delaware utility system was essentially flat, thanks to contributions from added residential customers during the period. Overall, Middlesex generated \$36.2 million in revenues for the September period, \$1.6 million less than last year's haul. This has spurred us to trim \$3.0 million off our 2017 top-line forecast, to \$134 million. The outlook for profit growth in 2018 is good. Operating margins ought to remain relatively steady, with few changes to the cost structure expected. Meantime, a reduced income tax rate (new tax act and various investment spending deductions) is the main driver behind our im- </td> </tr> <tr> <td colspan="18"> proved perspective. All told, we look for earnings to expand 18% this year, to \$1.65 a share (+0.05), on revenues of \$143 million (-\$2.0 million). Long-term, infrastructure upgrades ought to bear fruit. Approximately \$12 million per year (for the next three years) is earmarked for the replacement of aging water mains, valves, and other infrastructure upgrades. The company boosted its quarterly dividend payout by about 6%, to \$0.224 per share. Shareholders have enjoyed 45 years of consecutive dividend increases, and we don't think this streak will be broken anytime soon. At present, MSEX shares offer a yield that fractionally outpaces the average of all dividend paying stocks in <i>The Value Line Investment Survey</i>. This issue is still a subpar selection for relative year-ahead price performance (Timeliness: 4). What's more, total return potential over the pull to 2020-2022 is nothing to write home about. Thus, we think investors can find better options elsewhere, at this juncture. <i>Nicholas P. Patrikis</i> January 12, 2018 </td> </tr> <tr> <td colspan="18"> <table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">QUARTERLY REVENUES (\$ MILL)</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>27.1</td> <td>29.2</td> <td>32.7</td> <td>28.1</td> <td>117.1</td> </tr> <tr> <td>2015</td> <td>28.8</td> <td>31.7</td> <td>34.7</td> <td>30.8</td> <td>126.0</td> </tr> <tr> <td>2016</td> <td>30.6</td> <td>32.7</td> <td>37.8</td> <td>31.8</td> <td>132.9</td> </tr> <tr> <td>2017</td> <td>30.1</td> <td>33.0</td> <td>36.2</td> <td>34.7</td> <td>134</td> </tr> <tr> <td>2018</td> <td>33.0</td> <td>37.0</td> <td>38.0</td> <td>35.0</td> <td>143</td> </tr> </table> </td> </tr> <tr> <td colspan="18"> <table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">EARNINGS PER SHARE A</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>.20</td> <td>.29</td> <td>.42</td> <td>.22</td> <td>1.13</td> </tr> <tr> <td>2015</td> <td>.22</td> <td>.31</td> <td>.41</td> <td>.28</td> <td>1.22</td> </tr> <tr> <td>2016</td> <td>.29</td> <td>.36</td> <td>.54</td> <td>.19</td> <td>1.38</td> </tr> <tr> <td>2017</td> <td>.27</td> <td>.33</td> <td>.46</td> <td>.34</td> <td>1.40</td> </tr> <tr> <td>2018</td> <td>.33</td> <td>.38</td> <td>.60</td> <td>.34</td> <td>1.65</td> </tr> </table> </td> </tr> <tr> <td colspan="18"> <table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">QUARTERLY DIVIDENDS PAID P=B</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>.19</td> <td>.19</td> <td>.19</td> <td>.1925</td> <td>.76</td> </tr> <tr> <td>2015</td> <td>.1925</td> <td>.1925</td> <td>.1925</td> <td>.19875</td> <td>.78</td> </tr> <tr> <td>2016</td> <td>.19875</td> <td>.19875</td> <td>.19875</td> <td>.21125</td> <td>.81</td> </tr> <tr> <td>2017</td> <td>.21125</td> <td>.21125</td> <td>.21125</td> <td>.22375</td> <td>.86</td> </tr> <tr> <td>2018</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> </td> </tr> <tr> <td colspan="18"> (A) Diluted earnings. Next earnings report due early February. (B) Dividends historically paid in mid-Feb., May, Aug., and November. Div'd reinvestment plan available. (C) In millions, adjusted for split. </td> </tr> <tr> <td colspan="18"> <table border="1"> <tr> <td>Company's Financial Strength</td> <td>B++</td> </tr> <tr> <td>Stock's Price Stability</td> <td>70</td> </tr> <tr> <td>Price Growth Persistence</td> <td>40</td> </tr> <tr> <td>Earnings Predictability</td> <td>80</td> </tr> </table> </td> </tr> <tr> <td colspan="18"> To subscribe call 1-800-VALUELINE </td> </tr> </table>																		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22	5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.28	7.77	8.16	8.10	8.55	Revenues per sh	9.40	1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.25	2.55	"Cash Flow" per sh	3.15	.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.40	1.65	Earnings per sh A	2.10	.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.85	.91	Div'd Decl'd per sh B=C	1.06	1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	1.80	1.90	Cap'l Spending per sh	2.05	7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	13.95	14.65	Book Value per sh	16.75	10.17	10.36	10.48	11.31	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.50	16.75	Common Shs Outs'g C	17.00	24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.0		Avg Ann'l P/E Ratio	21.0	1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.35	1.37		Relative P/E Ratio	1.30	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%	3.7%	3.3%	2.3%	2.2%		Avg Ann'l Div'd Yield	2.5%	CAPITAL STRUCTURE as of 9/30/17 Total Debt \$166.8 mill. Due In 5 Yrs \$32.1 mill. LT Debt \$135.8 mill. LT Interest \$6.0 mill. (Total interest coverage: 10.9x) (38% of Cap'l) Pension Assets-12/16 \$59.4 mill. Oblig. \$78.6 mill. Pfd Stock \$2.4 mill. Pfd Div'd: \$.1 mill. Common Stock 16,346,036 shs. as of 10/31/17 MARKET CAP: \$650 million (Small Cap)																		<table border="1"> <tr> <th>2007</th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>20-22</th> </tr> <tr> <td>86.1</td><td>91.0</td><td>91.2</td><td>102.7</td><td>102.1</td><td>110.4</td><td>114.8</td><td>117.1</td><td>126.0</td><td>132.9</td><td>134</td><td>143</td><td>160</td> </tr> <tr> <td>11.8</td><td>12.2</td><td>10.0</td><td>14.3</td><td>13.4</td><td>14.4</td><td>16.6</td><td>18.4</td><td>20.0</td><td>22.7</td><td>23.0</td><td>27.5</td><td>35.5</td> </tr> <tr> <td>32.6%</td><td>33.2%</td><td>34.1%</td><td>32.1%</td><td>32.7%</td><td>33.9%</td><td>34.1%</td><td>35.0%</td><td>34.5%</td><td>34.0%</td><td>32.0%</td><td>21.0%</td><td>21.0%</td> </tr> <tr> <td>--</td><td>--</td><td>--</td><td>6.8%</td><td>6.1%</td><td>3.4%</td><td>1.9%</td><td>1.7%</td><td>1.9%</td><td>2.7%</td><td>2.0%</td><td>2.0%</td><td>2.5%</td> </tr> <tr> <td>49.0%</td><td>45.6%</td><td>46.6%</td><td>43.1%</td><td>42.3%</td><td>41.5%</td><td>40.4%</td><td>40.5%</td><td>39.4%</td><td>37.9%</td><td>37.5%</td><td>37.0%</td><td>37.0%</td> </tr> <tr> <td>49.6%</td><td>51.8%</td><td>52.1%</td><td>55.8%</td><td>56.6%</td><td>57.4%</td><td>58.7%</td><td>58.8%</td><td>59.8%</td><td>61.5%</td><td>62.0%</td><td>62.5%</td><td>62.5%</td> </tr> <tr> <td>268.8</td><td>259.4</td><td>267.9</td><td>310.5</td><td>312.5</td><td>316.5</td><td>321.4</td><td>335.8</td><td>345.4</td><td>355.4</td><td>370</td><td>390</td><td>460</td> </tr> <tr> <td>333.9</td><td>366.3</td><td>376.5</td><td>405.9</td><td>422.2</td><td>435.2</td><td>446.5</td><td>465.4</td><td>481.9</td><td>517.8</td><td>525</td><td>535</td><td>575</td> </tr> <tr> <td>5.6%</td><td>5.8%</td><td>5.0%</td><td>5.7%</td><td>5.2%</td><td>5.4%</td><td>5.9%</td><td>6.3%</td><td>6.6%</td><td>7.1%</td><td>7.0%</td><td>7.5%</td><td>8.5%</td> </tr> <tr> <td>8.6%</td><td>8.6%</td><td>7.0%</td><td>8.1%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.2%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>12.5%</td> </tr> <tr> <td>8.7%</td><td>8.9%</td><td>7.0%</td><td>8.2%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.3%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>12.5%</td> </tr> <tr> <td>1.8%</td><td>2.0%</td><td>.1%</td><td>2.1%</td><td>1.0%</td><td>1.4%</td><td>2.4%</td><td>3.1%</td><td>3.5%</td><td>4.3%</td><td>4.0%</td><td>5.0%</td><td>6.0%</td> </tr> <tr> <td>79%</td><td>78%</td><td>98%</td><td>75%</td><td>87%</td><td>83%</td><td>73%</td><td>67%</td><td>63%</td><td>58%</td><td>61%</td><td>55%</td><td>50%</td> </tr> </table>																		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22	86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	134	143	160	11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	23.0	27.5	35.5	32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.0%	21.0%	21.0%	--	--	--	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	2.0%	2.0%	2.5%	49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.0%	37.0%	49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	62.0%	62.5%	62.5%	268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370	390	460	333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	525	535	575	5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	7.0%	7.5%	8.5%	8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	10.0%	11.5%	12.5%	8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	10.0%	11.5%	12.5%	1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	4.0%	5.0%	6.0%	79%	78%	98%	75%	87%	83%	73%	67%	63%	58%	61%	55%	50%	CURRENT POSITION 2015 2016 9/30/17 (\$ MILL) Cash Assets 3.5 3.9 2.7 Other 20.9 22.8 27.4 Current Assets 24.4 26.7 30.1 Accts Payable 6.5 12.3 12.1 Debt Due 8.7 18.2 31.0 Other 13.1 16.6 15.9 Current Liab. 28.3 47.1 59.0 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 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2016, the Middlesex System accounted for 60% of operating revenues. At 12/31/16, the company had 309 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 7.2% (4/17 proxy). Add: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.																		Middlesex Water Company's battle with mother nature has yet to subside. The story hasn't changed much over the past three months, as weather-related disruptions took a toll on its top line once again. Operating in the Northeast region of the U.S. leaves MSEX vulnerable to extremely volatile weather conditions, which can noticeably impact customer water consumption. Specifically, its Middlesex New Jersey operations saw revenues contract \$1.8 million, year over year, due to softer consumption, while its Delaware utility system was essentially flat, thanks to contributions from added residential customers during the period. Overall, Middlesex generated \$36.2 million in revenues for the September period, \$1.6 million less than last year's haul. This has spurred us to trim \$3.0 million off our 2017 top-line forecast, to \$134 million. The outlook for profit growth in 2018 is good. Operating margins ought to remain relatively steady, with few changes to the cost structure expected. Meantime, a reduced income tax rate (new tax act and various investment spending deductions) is the main driver behind our im-																		proved perspective. All told, we look for earnings to expand 18% this year, to \$1.65 a share (+0.05), on revenues of \$143 million (-\$2.0 million). Long-term, infrastructure upgrades ought to bear fruit. Approximately \$12 million per year (for the next three years) is earmarked for the replacement of aging water mains, valves, and other infrastructure upgrades. The company boosted its quarterly dividend payout by about 6%, to \$0.224 per share. Shareholders have enjoyed 45 years of consecutive dividend increases, and we don't think this streak will be broken anytime soon. At present, MSEX shares offer a yield that fractionally outpaces the average of all dividend paying stocks in <i>The Value Line Investment Survey</i> . This issue is still a subpar selection for relative year-ahead price performance (Timeliness: 4). What's more, total return potential over the pull to 2020-2022 is nothing to write home about. Thus, we think investors can find better options elsewhere, at this juncture. <i>Nicholas P. Patrikis</i> January 12, 2018																		<table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">QUARTERLY REVENUES (\$ MILL)</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>27.1</td> <td>29.2</td> <td>32.7</td> <td>28.1</td> <td>117.1</td> </tr> <tr> <td>2015</td> <td>28.8</td> <td>31.7</td> <td>34.7</td> <td>30.8</td> <td>126.0</td> </tr> <tr> <td>2016</td> <td>30.6</td> <td>32.7</td> <td>37.8</td> <td>31.8</td> <td>132.9</td> </tr> <tr> <td>2017</td> <td>30.1</td> <td>33.0</td> <td>36.2</td> <td>34.7</td> <td>134</td> </tr> <tr> <td>2018</td> <td>33.0</td> <td>37.0</td> <td>38.0</td> <td>35.0</td> <td>143</td> </tr> </table>																		Cal-endar	QUARTERLY REVENUES (\$ MILL)				Full Year		Mar.31	Jun.30	Sep.30	Dec.31		2014	27.1	29.2	32.7	28.1	117.1	2015	28.8	31.7	34.7	30.8	126.0	2016	30.6	32.7	37.8	31.8	132.9	2017	30.1	33.0	36.2	34.7	134	2018	33.0	37.0	38.0	35.0	143	<table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">EARNINGS PER SHARE A</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>.20</td> <td>.29</td> <td>.42</td> <td>.22</td> <td>1.13</td> </tr> <tr> <td>2015</td> <td>.22</td> <td>.31</td> <td>.41</td> <td>.28</td> <td>1.22</td> </tr> <tr> <td>2016</td> <td>.29</td> <td>.36</td> <td>.54</td> <td>.19</td> <td>1.38</td> </tr> <tr> <td>2017</td> <td>.27</td> <td>.33</td> <td>.46</td> <td>.34</td> <td>1.40</td> </tr> <tr> <td>2018</td> <td>.33</td> <td>.38</td> <td>.60</td> <td>.34</td> <td>1.65</td> </tr> </table>																		Cal-endar	EARNINGS PER SHARE A				Full Year		Mar.31	Jun.30	Sep.30	Dec.31		2014	.20	.29	.42	.22	1.13	2015	.22	.31	.41	.28	1.22	2016	.29	.36	.54	.19	1.38	2017	.27	.33	.46	.34	1.40	2018	.33	.38	.60	.34	1.65	<table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">QUARTERLY DIVIDENDS PAID P=B</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>.19</td> <td>.19</td> <td>.19</td> <td>.1925</td> <td>.76</td> </tr> <tr> <td>2015</td> <td>.1925</td> <td>.1925</td> <td>.1925</td> <td>.19875</td> <td>.78</td> </tr> <tr> <td>2016</td> <td>.19875</td> <td>.19875</td> <td>.19875</td> <td>.21125</td> <td>.81</td> </tr> <tr> <td>2017</td> <td>.21125</td> <td>.21125</td> <td>.21125</td> <td>.22375</td> <td>.86</td> </tr> <tr> <td>2018</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																		Cal-endar	QUARTERLY DIVIDENDS PAID P=B				Full Year		Mar.31	Jun.30	Sep.30	Dec.31		2014	.19	.19	.19	.1925	.76	2015	.1925	.1925	.1925	.19875	.78	2016	.19875	.19875	.19875	.21125	.81	2017	.21125	.21125	.21125	.22375	.86	2018						(A) Diluted earnings. Next earnings report due early February. (B) Dividends historically paid in mid-Feb., May, Aug., and November. Div'd reinvestment plan available. (C) In millions, adjusted for split.																		<table border="1"> <tr> <td>Company's Financial Strength</td> <td>B++</td> </tr> <tr> <td>Stock's Price Stability</td> <td>70</td> </tr> <tr> <td>Price Growth Persistence</td> <td>40</td> </tr> <tr> <td>Earnings Predictability</td> <td>80</td> </tr> </table>																		Company's Financial Strength	B++	Stock's Price Stability	70	Price Growth Persistence	40	Earnings Predictability	80	To subscribe call 1-800-VALUELINE																	
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.28	7.77	8.16	8.10	8.55	Revenues per sh	9.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.25	2.55	"Cash Flow" per sh	3.15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.40	1.65	Earnings per sh A	2.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.85	.91	Div'd Decl'd per sh B=C	1.06																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	1.80	1.90	Cap'l Spending per sh	2.05																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	13.95	14.65	Book Value per sh	16.75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
10.17	10.36	10.48	11.31	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.50	16.75	Common Shs Outs'g C	17.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.0		Avg Ann'l P/E Ratio	21.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.35	1.37		Relative P/E Ratio	1.30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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%	3.7%	3.3%	2.3%	2.2%		Avg Ann'l Div'd Yield	2.5%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
CAPITAL STRUCTURE as of 9/30/17 Total Debt \$166.8 mill. Due In 5 Yrs \$32.1 mill. LT Debt \$135.8 mill. LT Interest \$6.0 mill. (Total interest coverage: 10.9x) (38% of Cap'l) Pension Assets-12/16 \$59.4 mill. Oblig. \$78.6 mill. Pfd Stock \$2.4 mill. Pfd Div'd: \$.1 mill. Common Stock 16,346,036 shs. as of 10/31/17 MARKET CAP: \$650 million (Small Cap)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
<table border="1"> <tr> <th>2007</th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>20-22</th> </tr> <tr> <td>86.1</td><td>91.0</td><td>91.2</td><td>102.7</td><td>102.1</td><td>110.4</td><td>114.8</td><td>117.1</td><td>126.0</td><td>132.9</td><td>134</td><td>143</td><td>160</td> </tr> <tr> <td>11.8</td><td>12.2</td><td>10.0</td><td>14.3</td><td>13.4</td><td>14.4</td><td>16.6</td><td>18.4</td><td>20.0</td><td>22.7</td><td>23.0</td><td>27.5</td><td>35.5</td> </tr> <tr> <td>32.6%</td><td>33.2%</td><td>34.1%</td><td>32.1%</td><td>32.7%</td><td>33.9%</td><td>34.1%</td><td>35.0%</td><td>34.5%</td><td>34.0%</td><td>32.0%</td><td>21.0%</td><td>21.0%</td> </tr> <tr> <td>--</td><td>--</td><td>--</td><td>6.8%</td><td>6.1%</td><td>3.4%</td><td>1.9%</td><td>1.7%</td><td>1.9%</td><td>2.7%</td><td>2.0%</td><td>2.0%</td><td>2.5%</td> </tr> <tr> <td>49.0%</td><td>45.6%</td><td>46.6%</td><td>43.1%</td><td>42.3%</td><td>41.5%</td><td>40.4%</td><td>40.5%</td><td>39.4%</td><td>37.9%</td><td>37.5%</td><td>37.0%</td><td>37.0%</td> </tr> <tr> <td>49.6%</td><td>51.8%</td><td>52.1%</td><td>55.8%</td><td>56.6%</td><td>57.4%</td><td>58.7%</td><td>58.8%</td><td>59.8%</td><td>61.5%</td><td>62.0%</td><td>62.5%</td><td>62.5%</td> </tr> <tr> <td>268.8</td><td>259.4</td><td>267.9</td><td>310.5</td><td>312.5</td><td>316.5</td><td>321.4</td><td>335.8</td><td>345.4</td><td>355.4</td><td>370</td><td>390</td><td>460</td> </tr> <tr> <td>333.9</td><td>366.3</td><td>376.5</td><td>405.9</td><td>422.2</td><td>435.2</td><td>446.5</td><td>465.4</td><td>481.9</td><td>517.8</td><td>525</td><td>535</td><td>575</td> </tr> <tr> <td>5.6%</td><td>5.8%</td><td>5.0%</td><td>5.7%</td><td>5.2%</td><td>5.4%</td><td>5.9%</td><td>6.3%</td><td>6.6%</td><td>7.1%</td><td>7.0%</td><td>7.5%</td><td>8.5%</td> </tr> <tr> <td>8.6%</td><td>8.6%</td><td>7.0%</td><td>8.1%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.2%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>12.5%</td> </tr> <tr> <td>8.7%</td><td>8.9%</td><td>7.0%</td><td>8.2%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.3%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>12.5%</td> </tr> <tr> <td>1.8%</td><td>2.0%</td><td>.1%</td><td>2.1%</td><td>1.0%</td><td>1.4%</td><td>2.4%</td><td>3.1%</td><td>3.5%</td><td>4.3%</td><td>4.0%</td><td>5.0%</td><td>6.0%</td> </tr> <tr> <td>79%</td><td>78%</td><td>98%</td><td>75%</td><td>87%</td><td>83%</td><td>73%</td><td>67%</td><td>63%</td><td>58%</td><td>61%</td><td>55%</td><td>50%</td> </tr> </table>																		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22	86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	134	143	160	11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	23.0	27.5	35.5	32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.0%	21.0%	21.0%	--	--	--	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	2.0%	2.0%	2.5%	49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.0%	37.0%	49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	62.0%	62.5%	62.5%	268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370	390	460	333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	525	535	575	5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	7.0%	7.5%	8.5%	8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	10.0%	11.5%	12.5%	8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	10.0%	11.5%	12.5%	1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	4.0%	5.0%	6.0%	79%	78%	98%	75%	87%	83%	73%	67%	63%	58%	61%	55%	50%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	134	143	160																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	23.0	27.5	35.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.0%	21.0%	21.0%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
--	--	--	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	2.0%	2.0%	2.5%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.0%	37.0%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	62.0%	62.5%	62.5%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370	390	460																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	525	535	575																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	7.0%	7.5%	8.5%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	10.0%	11.5%	12.5%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	10.0%	11.5%	12.5%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	4.0%	5.0%	6.0%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
79%	78%	98%	75%	87%	83%	73%	67%	63%	58%	61%	55%	50%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CURRENT POSITION 2015 2016 9/30/17 (\$ MILL) Cash Assets 3.5 3.9 2.7 Other 20.9 22.8 27.4 Current Assets 24.4 26.7 30.1 Accts Payable 6.5 12.3 12.1 Debt Due 8.7 18.2 31.0 Other 13.1 16.6 15.9 Current Liab. 28.3 47.1 59.0 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 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2016, the Middlesex System accounted for 60% of operating revenues. At 12/31/16, the company had 309 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 7.2% (4/17 proxy). Add: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Middlesex Water Company's battle with mother nature has yet to subside. The story hasn't changed much over the past three months, as weather-related disruptions took a toll on its top line once again. Operating in the Northeast region of the U.S. leaves MSEX vulnerable to extremely volatile weather conditions, which can noticeably impact customer water consumption. Specifically, its Middlesex New Jersey operations saw revenues contract \$1.8 million, year over year, due to softer consumption, while its Delaware utility system was essentially flat, thanks to contributions from added residential customers during the period. Overall, Middlesex generated \$36.2 million in revenues for the September period, \$1.6 million less than last year's haul. This has spurred us to trim \$3.0 million off our 2017 top-line forecast, to \$134 million. The outlook for profit growth in 2018 is good. Operating margins ought to remain relatively steady, with few changes to the cost structure expected. Meantime, a reduced income tax rate (new tax act and various investment spending deductions) is the main driver behind our im-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
proved perspective. All told, we look for earnings to expand 18% this year, to \$1.65 a share (+0.05), on revenues of \$143 million (-\$2.0 million). Long-term, infrastructure upgrades ought to bear fruit. Approximately \$12 million per year (for the next three years) is earmarked for the replacement of aging water mains, valves, and other infrastructure upgrades. The company boosted its quarterly dividend payout by about 6%, to \$0.224 per share. Shareholders have enjoyed 45 years of consecutive dividend increases, and we don't think this streak will be broken anytime soon. At present, MSEX shares offer a yield that fractionally outpaces the average of all dividend paying stocks in <i>The Value Line Investment Survey</i> . This issue is still a subpar selection for relative year-ahead price performance (Timeliness: 4). What's more, total return potential over the pull to 2020-2022 is nothing to write home about. Thus, we think investors can find better options elsewhere, at this juncture. <i>Nicholas P. Patrikis</i> January 12, 2018																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
<table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">QUARTERLY REVENUES (\$ MILL)</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>27.1</td> <td>29.2</td> <td>32.7</td> <td>28.1</td> <td>117.1</td> </tr> <tr> <td>2015</td> <td>28.8</td> <td>31.7</td> <td>34.7</td> <td>30.8</td> <td>126.0</td> </tr> <tr> <td>2016</td> <td>30.6</td> <td>32.7</td> <td>37.8</td> <td>31.8</td> <td>132.9</td> </tr> <tr> <td>2017</td> <td>30.1</td> <td>33.0</td> <td>36.2</td> <td>34.7</td> <td>134</td> </tr> <tr> <td>2018</td> <td>33.0</td> <td>37.0</td> <td>38.0</td> <td>35.0</td> <td>143</td> </tr> </table>																		Cal-endar	QUARTERLY REVENUES (\$ MILL)				Full Year		Mar.31	Jun.30	Sep.30	Dec.31		2014	27.1	29.2	32.7	28.1	117.1	2015	28.8	31.7	34.7	30.8	126.0	2016	30.6	32.7	37.8	31.8	132.9	2017	30.1	33.0	36.2	34.7	134	2018	33.0	37.0	38.0	35.0	143																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Cal-endar	QUARTERLY REVENUES (\$ MILL)				Full Year																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	Mar.31	Jun.30	Sep.30	Dec.31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
2014	27.1	29.2	32.7	28.1	117.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2015	28.8	31.7	34.7	30.8	126.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2016	30.6	32.7	37.8	31.8	132.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2017	30.1	33.0	36.2	34.7	134																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2018	33.0	37.0	38.0	35.0	143																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
<table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">EARNINGS PER SHARE A</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>.20</td> <td>.29</td> <td>.42</td> <td>.22</td> <td>1.13</td> </tr> <tr> <td>2015</td> <td>.22</td> <td>.31</td> <td>.41</td> <td>.28</td> <td>1.22</td> </tr> <tr> <td>2016</td> <td>.29</td> <td>.36</td> <td>.54</td> <td>.19</td> <td>1.38</td> </tr> <tr> <td>2017</td> <td>.27</td> <td>.33</td> <td>.46</td> <td>.34</td> <td>1.40</td> </tr> <tr> <td>2018</td> <td>.33</td> <td>.38</td> <td>.60</td> <td>.34</td> <td>1.65</td> </tr> </table>																		Cal-endar	EARNINGS PER SHARE A				Full Year		Mar.31	Jun.30	Sep.30	Dec.31		2014	.20	.29	.42	.22	1.13	2015	.22	.31	.41	.28	1.22	2016	.29	.36	.54	.19	1.38	2017	.27	.33	.46	.34	1.40	2018	.33	.38	.60	.34	1.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Cal-endar	EARNINGS PER SHARE A				Full Year																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	Mar.31	Jun.30	Sep.30	Dec.31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
2014	.20	.29	.42	.22	1.13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2015	.22	.31	.41	.28	1.22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2016	.29	.36	.54	.19	1.38																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2017	.27	.33	.46	.34	1.40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2018	.33	.38	.60	.34	1.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
<table border="1"> <tr> <th>Cal-endar</th> <th colspan="4">QUARTERLY DIVIDENDS PAID P=B</th> <th>Full Year</th> </tr> <tr> <td></td> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <td></td> </tr> <tr> <td>2014</td> <td>.19</td> <td>.19</td> <td>.19</td> <td>.1925</td> <td>.76</td> </tr> <tr> <td>2015</td> <td>.1925</td> <td>.1925</td> <td>.1925</td> <td>.19875</td> <td>.78</td> </tr> <tr> <td>2016</td> <td>.19875</td> <td>.19875</td> <td>.19875</td> <td>.21125</td> <td>.81</td> </tr> <tr> <td>2017</td> <td>.21125</td> <td>.21125</td> <td>.21125</td> <td>.22375</td> <td>.86</td> </tr> <tr> <td>2018</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																		Cal-endar	QUARTERLY DIVIDENDS PAID P=B				Full Year		Mar.31	Jun.30	Sep.30	Dec.31		2014	.19	.19	.19	.1925	.76	2015	.1925	.1925	.1925	.19875	.78	2016	.19875	.19875	.19875	.21125	.81	2017	.21125	.21125	.21125	.22375	.86	2018																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Cal-endar	QUARTERLY DIVIDENDS PAID P=B				Full Year																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	Mar.31	Jun.30	Sep.30	Dec.31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
2014	.19	.19	.19	.1925	.76																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2015	.1925	.1925	.1925	.19875	.78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2016	.19875	.19875	.19875	.21125	.81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2017	.21125	.21125	.21125	.22375	.86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
2018																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
(A) Diluted earnings. Next earnings report due early February. (B) Dividends historically paid in mid-Feb., May, Aug., and November. Div'd reinvestment plan available. (C) In millions, adjusted for split.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
<table border="1"> <tr> <td>Company's Financial Strength</td> <td>B++</td> </tr> <tr> <td>Stock's Price Stability</td> <td>70</td> </tr> <tr> <td>Price Growth Persistence</td> <td>40</td> </tr> <tr> <td>Earnings Predictability</td> <td>80</td> </tr> </table>																		Company's Financial Strength	B++	Stock's Price Stability	70	Price Growth Persistence	40	Earnings Predictability	80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Company's Financial Strength	B++																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Stock's Price Stability	70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Price Growth Persistence	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Earnings Predictability	80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
To subscribe call 1-800-VALUELINE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

YORK WATER NDQ-YORW		RECENT PRICE	33.35	P/E RATIO	30.0 (Trailing: 34.4 Median: 24.0)	RELATIVE P/E RATIO	1.46	DIV'D YLD	2.0%	VALUE LINE						
TIMELINESS 3 Raised 11/7/17	High: 21.0	18.5	16.5	18.0	18.0	18.1	18.5	22.0	24.3	26.7	39.8	39.9		Target Price	Range	
SAFETY 3 Lowered 7/17/15	Low: 15.3	15.5	6.2	9.7	12.8	15.8	16.8	17.6	18.8	19.7	23.8	31.7		2020	2021	2022
TECHNICAL 2 Raised 15/18	LEGENDS 1.10 x Dividends p sh divided by Interest Rate Relative Price Strength 3-for-2 split 9/06 Options: Yes Shaded area indicates recession															
BETA .80 (1.00 = Market)	2020-22 PROJECTIONS Price Gain Return High 45 (+35%) 10% Low 30 (-10%) Nil															
Insider Decisions	M A M J J A S O N to Buy 1 13 2 2 13 2 2 13 2 Options 0 0 13 0 0 0 0 0 0 to Sell 0 0 0 0 0 0 0 0 0															
Institutional Decisions	10/20/17 2020/17 30/2017 to Buy 38 42 40 to Sell 33 33 30 Hld's(000) 5127 5206 5125 Percent shares traded 12 8 4															
% TOT. RETURN 12/17 THIS STOCK VS. ARITH. INDEX 1 yr. -9.6 15.8 3 yr. 55.7 30.1 5 yr. 115.9 92.5																
VALUE LINE PUB. LLC 20-22 Revenues per sh 5.40 "Cash Flow" per sh 2.25 Earnings per sh ^A 1.60 Div'd Decl'd per sh ^B .96 Cap'l Spending per sh .95 Book Value per sh 11.20 Common Shs Outst'g ^C 12.50 Avg Ann'l P/E Ratio 22.5 Relative P/E Ratio 1.40 Avg Ann'l Div'd Yield 2.6%																
CAPITAL STRUCTURE as of 9/30/17 Total Debt \$88.9 mill. Due in 5 Yrs \$30.5 mill. LT Debt \$88.9 mill. LT Interest \$5.4 mill. (43% of Cap'l)																
Pension Assets 12/16 \$35.5 mill. Oblig. \$40.8 mill.																
Pfd Stock None																
Common Stock 12,859,432 shs.																
MARKET CAP: \$425 million (Small Cap)																
CURRENT POSITION 2015 2016 9/30/17 (\$MILL) Cash Assets 2.9 4.2 -- Accounts Receivable 3.5 4.3 4.4 Inventory (Avg. Cost) .8 .7 .9 Other 4.6 3.4 3.3 Current Assets 11.8 12.6 8.6 Accs Payable 1.8 3.7 4.0 Debt Due -- -- -- Other 4.4 4.5 6.1 Current Liab. 6.2 8.2 10.1																
ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-'22 Revenues 4.0% 3.5% 6.5% "Cash Flow" 6.5% 6.5% 8.0% Earnings 5.5% 6.0% 9.5% Dividends 3.5% 3.0% 8.0% Book Value 5.0% 3.5% 4.5%																
QUARTERLY REVENUES (\$ MILL) Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 10.6 11.8 12.0 11.5 45.9 2015 11.2 11.9 12.4 11.6 47.1 2016 11.3 11.8 12.6 11.9 47.6 2017 11.3 12.3 12.7 12.2 48.5 2018 12.0 12.5 13.3 12.7 50.5																
EARNINGS PER SHARE ^A Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .16 .22 .23 28 .89 2015 .20 .22 .28 27 .97 2016 .19 .23 .27 23 .92 2017 .20 .23 .31 31 1.05 2018 .24 .25 .34 32 1.15																
QUARTERLY DIVIDENDS PAID ^B Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .1431 .1431 .1431 .1431 .572 2015 .1495 .1495 .1495 .1555 .604 2016 .1555 .1555 .1555 .1602 .627 2017 .1602 .1602 .1602 .1666 .647 2018																
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, 2016, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 196,000. Has more than 67,000 customers. Residential customers accounted for 63% of 2016 revenues; commercial and industrial (29%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 105 full-time employees at 12/31/16. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (3/17 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.																
York Water delivered a better-than-expected bottom-line performance in the third quarter. The regulated water utility earned \$0.31 a share for the September period (+15% year over year), besting our \$0.29 call by two cents. The advance can be largely attributed to a lower effective tax rate (asset improvements qualify for deductions), higher surcharges to customers, and an increased allowance for funds used during construction (interest deduction). Meanwhile, operation and maintenance expenses as a percentage of revenues rose 200 basis points, on an annual basis, which makes the share-net showing even more encouraging. On the other hand, revenue growth was essentially nonexistent, dragged down by generally lower consumption.																
We are adjusting our 2018 top- and bottom-line estimates. Despite an expanding customer base (acquisition-driven), York's top line is under some pressure. We now look for revenues of \$50.5 million in 2018, down from our prior forecast of \$52.0 million. Conversely, we are adding a dime to our earnings-per-share estimate, to \$1.15.																
Capital expenditures ought to remain par for the course going forward. Management estimates it spent approximately \$25 million in 2017 on aging infrastructure, raw water pumping stations, and pipe replacements, more than double the year-earlier total. With plenty of its footprint still needing to be brought up to speed, we anticipate at least several years of aggressive investment spending.																
York Water raised its quarterly dividend by 4%, to \$0.17 a share. This marks 21 consecutive years that the company has increased its annual dividend payout. The current yield is fractionally above that of the Value Line median, but should trend higher into next decade thanks to additional dividend hikes.																
York Water shares have moved up one notch for Timeliness, to 3, and are now pegged to track the year-ahead broader market averages. Prospects out to the 2020-2022 time frame are bright, though most of the benefits we envision appear to already be baked into the stock price. Capital appreciation potential does not stand out at the recent quotation.																
<i>Nicholas P. Patrikis January 12, 2018</i>																
Company's Financial Strength B+ Stock's Price Stability 60 Price Growth Persistence 55 Earnings Predictability 90																

(A) Diluted earnings. Next earnings report due late February.
(B) Dividends historically paid in late February, June, September, and December.

(C) In millions, adjusted for split.

© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

To subscribe call 1-800-VALUELINE

Carolina Water Services, Inc. of North Carolina
Summary of Risk Premium Models for the
Proxy Group of Six Water Companies

	<u>Proxy Group of Six Water Companies</u>
Predictive Risk Premium Model (PRPM) (1)	13.43 %
Risk Premium Using an Adjusted Total Market Approach (2)	<u>10.80 %</u>
Average	<u><u>12.12 %</u></u>

Notes:

(1) From page 2 of this Schedule.

(2) From page 3 of this Schedule.

Carolina Water Services, Inc. of North Carolina
 Indicated ROE
 Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
<u>Proxy Group of Six Water Companies</u>	<u>LT Average Predicted Variance</u>	<u>Spot Predicted Variance</u>	<u>Average Predicted Variance</u>	<u>GARCH Coefficient</u>	<u>Predicted Risk Premium (2)</u>	<u>Risk-Free Rate (3)</u>	<u>Indicated ROE (4)</u>
American States Water Co.	0.38%	0.33%	0.36%	1.77802	7.96%	3.69%	11.65%
American Water Works Company Inc	NMF	NMF	NMF	4.90988	NMF	3.69%	NMF
Aqua America Inc	0.45%	0.32%	0.39%	2.26697	11.14%	3.69%	14.83%
California Water Service Group	0.32%	0.42%	0.37%	1.86909	8.62%	3.69%	12.31%
Middlesex Water Co.	0.30%	0.52%	0.41%	1.87709	9.64%	3.69%	13.33%
York Water Co.	0.47%	0.47%	0.47%	1.98492	11.79%	3.69%	15.48%
						Average	<u>13.52%</u>
						Median	<u>13.33%</u>
					Average of Mean and Median		<u>13.43%</u>

NMF = Not Meaningful Figure

Notes:

- (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 Bloomberg Professional Service.
- (2) $(1 + (\text{Column [3]} * \text{Column [4]})^{12}) - 1$.
- (3) From note 2 on page 2 of Schedule DWD-5.
- (4) Column [5] + Column [6].

Carolina Water Services, Inc. of North Carolina
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 Six Water Companies</u>
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	4.66 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.28 (2)</u>
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	4.94 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.06 (3)</u>
5.	Adjusted Prospective Bond Yield	5.00 %
6.	Equity Risk Premium (4)	<u>5.80</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.80 %</u></u>

- Notes:
- (1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10-11 of this Schedule).
 - (2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.28% from page 4 of this Schedule.
 - (3) Adjustment to reflect the A2 / A3 Moody's LT issuer rating of the proxy group of eight water companies as shown on page 5 of this Schedule. The 0.06% upward adjustment is derived by taking 1/6 of the spread between A2 and A3 Public Utility Bonds ($1/6 * 0.34\% = 0.06\%$) as derived from page 4 of this Schedule.
 - (4) From page 7 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1]	[2]	[3]
	<u>Aaa Rated Corporate Bond</u>	<u>A Rated Public Utility Bond</u>	<u>Baa Rated Public Utility Bond</u>
Feb-2018	3.87 %	4.13 %	4.52 %
Jan-2018	3.82	4.09	4.42
Dec-2017	<u>3.55</u>	<u>3.86</u>	<u>4.18</u>
Average	<u>3.75 %</u>	<u>4.03 %</u>	<u>4.37 %</u>

Selected Bond Spreads

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:

0.28 % (1)

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

0.34 % (2)

Notes:

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

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

Source of Information:

Bloomberg Professional Service

Carolina Water Services, Inc. of North Carolina
Comparison of Long-Term Issuer Ratings for
Proxy Group of Six Water Companies

	<u>Moody's</u>		<u>Standard & Poor's</u>	
	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting(1)</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting(1)</u>
<u>Proxy Group of Six Water Companies</u>				
American States Water Co. (2)	A2	6.0	A+	5.0
American Water Works Company Inc (3)	A3	7.0	A	6.0
Aqua America Inc (4)	NR	--	A+	5.0
California Water Service Group (5)	NR	--	A+	5.0
Middlesex Water Co.	NR	--	A	6.0
York Water Co.	NR	--	A-	7.0
Average	<u>A2/A3</u>	<u>6.5</u>	<u>A</u>	<u>5.7</u>

Notes:

- (1) From page 6 of this Schedule.
- (2) Ratings that of Golden State Water Company.
- (3) Ratings that of New Jersey and Pennsylvania American Water Companies.
- (4) Ratings that of Aqua Pennsylvania, Inc.
- (5) Ratings that of California Water Service Company.

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

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-
B1	14	B+
B2	15	B
B3	16	B-

Carolina Water Services, Inc. of North Carolina
Judgment of Equity Risk Premium for
Proxy Group of Six Water Companies

<u>Line No.</u>		<u>Proxy Group of Six Water Companies</u>
1.	Calculated equity risk premium based on the total market using the beta approach (1)	6.64 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	<u>4.95</u>
3.	Average equity risk premium	<u><u>5.80 %</u></u>

Notes: (1) From page 8 of this Schedule.
(2) From page 12 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Six Water Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.56 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.31
3.	Ibbotson Equity Risk Premium based on PRPM (3)	<u>6.66</u>
4.	Average Ibbotson Equity Risk Premium	<u><u>6.51</u></u>
<u>Value Line-Based Equity Risk Premiums:</u>		
5.	Equity Risk Premium Based on Value Line Summary and Index (4)	4.68
6.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	<u>11.07</u>
7.	Average Value Line Equity Risk Premium	<u><u>7.87</u></u>
<u>Bloomberg-Based Equity Risk Premium:</u>		
8.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u><u>9.93</u></u>
9.	Conclusion of Equity Risk Premium (7)	8.10 %
10.	Adjusted Beta (8)	<u>0.82</u>
11.	Forecasted Equity Risk Premium	<u><u>6.64 %</u></u>

Notes provided on page 9 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

Notes:

- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2017 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2016.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2017 referenced in Note 1 above.
- (3) The Predictive Risk Premium Model (PRPM) is discussed in the 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 and average Aaa and Aa corporate monthly bond yields, from January 1928 through March 2018.
- (4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 4.66% (from page 3 of this Schedule) from the projected 3-5 year total annual market return of 9.34% (described fully in note 1 on page 2 of Schedule DWD-5).
- (5) Using data from Value Line for the S&P 500, an expected total return of 15.73% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.66% results in an expected equity risk premium of 11.07%.
- (6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 14.59% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.66% results in an expected equity risk premium of 9.93%.
- (7) Average of lines 4, 7, and 8.
- (8) Average of mean and median beta from Schedule DWD-5.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2017 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2017 and April 1, 2018
Bloomberg Professional Service

2 ■ BLUE CHIP FINANCIAL FORECASTS ■ APRIL 1, 2018

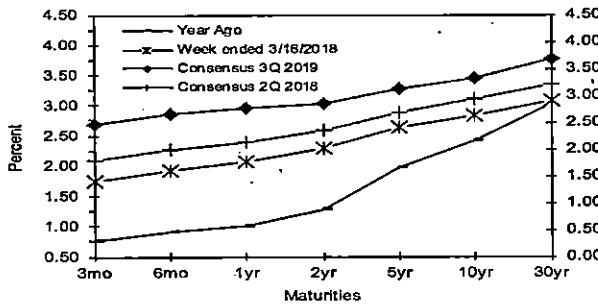
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions¹

Interest Rates	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month				Latest Qtr	2Q 2018	3Q 2018	4Q 2018	1Q 2019	2Q 2019
	Mar. 16	Mar. 9	Mar. 2	Feb. 23	Feb	Jan	Dec	1Q 2018*	2018	2018	2018	2019	2019	2019
Federal Funds Rate	1.42	1.42	1.41	1.42	1.42	1.41	1.29	1.42	1.7	2.0	2.2	2.4	2.6	2.7
Prime Rate	4.50	4.50	4.50	4.50	4.50	4.50	4.38	4.50	4.8	5.0	5.2	5.4	5.6	5.8
LIBOR, 3-mo.	2.15	2.06	2.01	1.92	1.84	1.73	1.59	1.88	2.1	2.3	2.5	2.7	2.9	3.1
Commercial Paper, 1-mo.	1.79	1.68	1.64	1.56	1.52	1.50	1.38	1.57	1.8	2.0	2.3	2.5	2.7	2.9
Treasury bill, 3-mo.	1.75	1.68	1.65	1.64	1.56	1.43	1.33	1.56	1.8	2.0	2.2	2.3	2.5	2.7
Treasury bill, 6-mo.	1.93	1.88	1.86	1.85	1.76	1.62	1.49	1.76	2.0	2.2	2.3	2.5	2.7	2.9
Treasury bill, 1 yr.	2.06	2.05	2.06	2.02	1.94	1.80	1.69	1.93	2.1	2.3	2.5	2.7	2.8	3.0
Treasury note, 2 yr.	2.28	2.25	2.24	2.25	2.16	2.02	1.83	2.15	2.4	2.5	2.7	2.8	2.9	3.0
Treasury note, 5 yr.	2.63	2.65	2.63	2.66	2.59	2.36	2.17	2.53	2.7	2.8	2.9	3.1	3.2	3.3
Treasury note, 10 yr.	2.84	2.88	2.86	2.91	2.84	2.56	2.40	2.75	2.9	3.1	3.2	3.3	3.4	3.4
Treasury note, 30 yr.	3.08	3.15	3.14	3.19	3.11	2.86	2.77	3.03	3.2	3.3	3.5	3.6	3.7	3.8
Corporate Aaa bond	3.97	4.00	3.97	3.99	3.91	3.68	3.63	3.86	4.1	4.2	4.4	4.6	4.7	4.8
Corporate Baa bond	4.58	4.61	4.56	4.56	4.47	4.24	4.21	4.43	4.8	5.0	5.1	5.3	5.4	5.5
State & Local bonds	3.61	3.60	3.60	3.59	3.57	3.42	3.46	3.53	3.8	3.9	4.1	4.2	4.3	4.4
Home mortgage rate	4.44	4.46	4.43	4.40	4.33	4.03	3.95	4.27	4.5	4.6	4.8	4.9	5.0	5.2

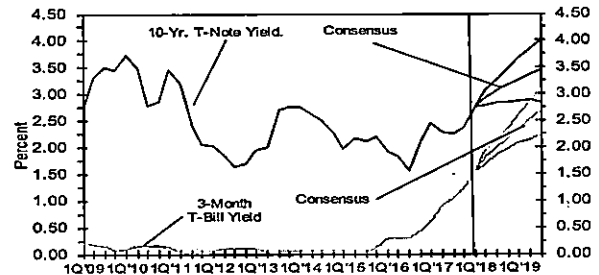
Key Assumptions	History								Consensus Forecasts-Quarterly					
	2Q 2016	3Q 2016	4Q 2016	1Q 2017	2Q 2017	3Q 2017	4Q 2017	1Q*	2Q 2018	3Q 2018	4Q 2018	1Q 2019	2Q 2019	3Q 2019
Major Currency Index	89.6	90.3	93.7	94.4	93.0	88.3	88.9	86.3	86.4	86.4	86.5	86.5	86.6	86.7
Real GDP	2.2	2.8	1.8	1.2	3.1	3.2	2.6	2.2	3.1	3.0	2.8	2.5	2.4	2.1
GDP Price Index	2.4	1.4	2.0	2.0	1.0	2.1	2.4	2.3	2.0	2.2	2.1	2.2	2.1	2.2
Consumer Price Index	2.3	1.8	3.0	3.1	-0.3	2.0	3.7	3.3	1.9	2.2	2.1	2.2	2.2	2.3

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data is sourced from Haver Analytics. Historical data for Fed's Major Currency Index is from FRSR H.10. 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). *Interest rate data for 1Q 2018 based on historical data through the week ended March 16th. Data for 1Q 2018 Major Currency Index is based on data through week ended March 16th. Figures for 1Q 2018 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question asked of the panelists' this month.

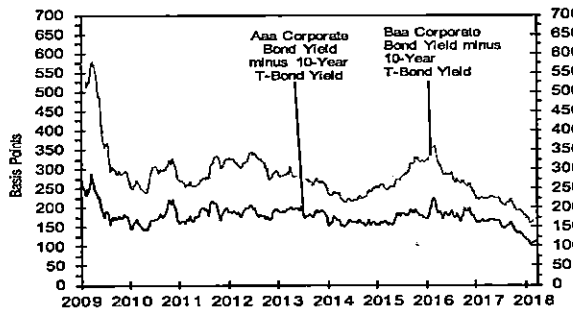
U.S. Treasury Yield Curve
Week ended March 16, 2018 and Year Ago v.s.
2Q 2018 and 3Q 2019 Consensus Forecasts



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



Corporate Bond Spreads
As of week ended March 16, 2018



U.S. Treasury Yield Curve
As of week March 16, 2018



14 ■ BLUE CHIP FINANCIAL FORECASTS ■ DECEMBER 1, 2017

Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2019 through 2023 and averages for the five-year periods 2019-2023 and 2024-2028. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

Interest Rates		Average For The Year					Five-Year Averages	
		2019	2020	2021	2022	2023	2019-2023	2024-2028
1. Federal Funds Rate	CONSENSUS	2.5	2.7	2.9	2.9	2.9	2.8	3.0
	Top 10 Average	2.9	3.2	3.4	3.4	3.5	3.3	3.5
	Bottom 10 Average	2.1	2.0	2.3	2.3	2.4	2.2	2.4
2. Prime Rate	CONSENSUS	5.5	5.8	5.9	5.9	5.9	5.8	5.9
	Top 10 Average	5.9	6.3	6.4	6.5	6.6	6.3	6.5
	Bottom 10 Average	5.0	5.1	5.2	5.2	5.2	5.1	5.3
3. LIBOR, 3-Mo.	CONSENSUS	2.8	3.1	3.2	3.1	3.2	3.1	3.2
	Top 10 Average	3.2	3.6	3.8	3.8	3.9	3.7	3.8
	Bottom 10 Average	2.4	2.6	2.6	2.5	2.6	2.5	2.6
4. Commercial Paper, 1-Mo.	CONSENSUS	2.6	2.9	3.0	3.0	3.1	2.9	3.1
	Top 10 Average	3.1	3.5	3.6	3.7	3.8	3.5	3.8
	Bottom 10 Average	2.2	2.5	2.6	2.5	2.5	2.5	2.6
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	2.5	2.8	2.9	2.9	2.9	2.8	2.9
	Top 10 Average	2.9	3.3	3.4	3.4	3.5	3.3	3.5
	Bottom 10 Average	2.1	2.3	2.4	2.3	2.3	2.3	2.4
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	2.6	2.9	3.0	3.0	3.0	2.9	3.1
	Top 10 Average	3.0	3.4	3.5	3.6	3.7	3.5	3.7
	Bottom 10 Average	2.2	2.4	2.5	2.4	2.4	2.4	2.5
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	2.7	3.0	3.1	3.1	3.2	3.0	3.2
	Top 10 Average	3.2	3.6	3.7	3.7	3.8	3.6	3.9
	Bottom 10 Average	2.3	2.5	2.6	2.5	2.5	2.5	2.6
8. Treasury Note Yield, 2-Yr.	CONSENSUS	2.8	3.1	3.3	3.2	3.3	3.1	3.3
	Top 10 Average	3.3	3.8	3.8	3.8	3.9	3.7	4.0
	Bottom 10 Average	2.4	2.6	2.7	2.6	2.6	2.6	2.7
10. Treasury Note Yield, 5-Yr.	CONSENSUS	3.1	3.4	3.5	3.5	3.5	3.4	3.6
	Top 10 Average	3.6	3.9	4.1	4.1	4.1	3.9	4.3
	Bottom 10 Average	2.6	2.8	2.9	2.9	2.9	2.8	3.0
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.3	3.6	3.7	3.7	3.8	3.6	3.8
	Top 10 Average	3.9	4.2	4.3	4.3	4.3	4.2	4.5
	Bottom 10 Average	2.8	2.9	3.1	3.1	3.1	3.0	3.2
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	3.8	4.1	4.2	4.2	4.2	4.1	4.3
	Top 10 Average	4.4	4.7	4.7	4.7	4.8	4.7	5.0
	Bottom 10 Average	3.3	3.5	3.6	3.5	3.6	3.5	3.7
13. Corporate Aaa Bond Yield	CONSENSUS	4.9	5.1	5.2	5.2	5.3	5.1	5.4
	Top 10 Average	5.5	5.9	5.9	6.0	6.0	5.9	6.2
	Bottom 10 Average	4.3	4.5	4.5	4.5	4.6	4.5	4.7
13. Corporate Baa Bond Yield	CONSENSUS	5.7	6.0	6.0	6.0	6.1	6.0	6.2
	Top 10 Average	6.4	6.8	6.8	6.9	6.9	6.8	7.0
	Bottom 10 Average	5.0	5.2	5.3	5.2	5.3	5.2	5.4
14. State & Local Bonds Yield	CONSENSUS	4.4	4.5	4.6	4.5	4.6	4.5	4.8
	Top 10 Average	5.0	5.2	5.2	5.3	5.3	5.2	5.5
	Bottom 10 Average	3.9	4.0	4.0	3.9	4.1	4.0	4.1
15. Home Mortgage Rate	CONSENSUS	5.0	5.2	5.3	5.3	5.4	5.2	5.5
	Top 10 Average	5.5	5.8	5.9	6.0	6.0	5.8	6.1
	Bottom 10 Average	4.5	4.7	4.7	4.6	4.7	4.6	4.9
A. FRB - Major Currency Index	CONSENSUS	90.4	90.0	89.9	89.9	90.0	90.0	90.4
	Top 10 Average	94.7	94.8	95.0	95.1	95.3	95.0	95.4
	Bottom 10 Average	86.9	85.8	85.4	85.5	85.6	85.8	86.1
B. Real GDP		Year-Over-Year, % Change					Five-Year Averages	
	CONSENSUS	2.2	1.9	2.0	2.0	2.0	2.0	2.0
C. GDP Chained Price Index	Top 10 Average	2.5	2.4	2.5	2.4	2.3	2.4	2.4
	Bottom 10 Average	1.8	1.4	1.7	1.6	1.7	1.6	1.7
	CONSENSUS	2.2	2.1	2.1	2.1	2.1	2.1	2.1
D. Consumer Price Index	Top 10 Average	2.5	2.3	2.3	2.3	2.3	2.3	2.3
	Bottom 10 Average	1.8	1.9	1.9	2.0	1.9	1.9	1.9
	CONSENSUS	2.3	2.3	2.3	2.2	2.2	2.3	2.2
	Top 10 Average	2.7	2.6	2.6	2.4	2.4	2.5	2.4
	Bottom 10 Average	1.9	1.9	2.0	2.0	2.0	2.0	2.0

Carolina Water Services, Inc. of North Carolina
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

<u>Line No.</u>		<u>Implied Equity Risk Premium</u>
	<u>Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):</u>	
1.	Historical Equity Risk Premium	4.04 %
2.	Regression of Historical Equity Risk Premium (2)	5.61
3.	Forecasted Equity Risk Premium Based on PRPM (3)	<u>4.18</u>
4.	Average Equity Risk Premium Using S&P Holding Period Returns	<u><u>4.61 %</u></u>
	<u>Equity Risk Premium based on Projected Market Appreciation of the S&P Utility Index</u>	
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	<u><u>4.86</u></u>
6.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	<u><u>5.37</u></u>
7.	Average Equity Risk Premium (6)	<u><u>4.95 %</u></u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2017. 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.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A rated public utility bond yields from 1928 - 2017 referenced in note 1 above.
- (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 January 1928 - March 2018.
- (4) Using data from Value Line for the S&P Utilities Index, an expected return of 9.80% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A rated public utility bond yield of 4.94%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 4.86%. (9.80% - 4.94% = 4.86%)
- (5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 10.31% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A rated public utility bond yield of 4.94%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 5.37%. (10.31% - 4.94% = 5.37%)
- (6) Average of lines 4 through 6.

Carolina Water Services Inc. of North Carolina
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Six Water Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Bloomberg Adjusted Beta</u>	<u>Average Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate</u>	<u>ECAPM Cost Rate</u>	<u>Indicated Common Equity Cost Rate (3)</u>
American States Water Co.	0.80	0.79	0.80	9.12 %	3.69 %	10.99 %	11.44 %	11.21 %
American Water Works Company Inc	0.65	0.71	0.68	9.12	3.69	9.89	10.62	10.26
Aqua America Inc	0.75	0.79	0.77	9.12	3.69	10.71	11.24	10.97
California Water Service Group	0.80	0.88	0.84	9.12	3.69	11.35	11.72	11.53
Middlesex Water Co.	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
York Water Co.	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
Mean			<u>0.81</u>			<u>11.03 %</u>	<u>11.48 %</u>	<u>11.25 %</u>
Median			<u>0.82</u>			<u>11.17 %</u>	<u>11.58 %</u>	<u>11.37 %</u>
Average of Mean and Median			<u>0.82</u>			<u>11.10</u>	<u>11.53</u>	<u>11.31 %</u>

Notes on page 2 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

- (1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2016)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2016:	11.97 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	<u>5.17</u>
MRP based on Ibbotson Historical Data:	<u>6.80</u> %

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2016)

8.49 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - March 2018)

7.55 %

Average Historical Data MRP 7.61 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending March 30, 2018)

Total projected return on the market 3-5 years hence*:	9.34 %
Projected Risk-Free Rate (see note 2):	<u>3.69</u>
MRP based on Value Line Summary & Index:	<u>5.65</u> %
*Forecasted 3-5 year capital appreciation plus expected dividend yield	

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	15.73 %
Projected Risk-Free Rate (see note 2):	<u>3.69</u>
MRP based on Value Line data	<u>12.04</u> %

Average Value Line MRP: 8.84 %

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	14.59 %
Projected Risk-Free Rate (see note 2):	<u>3.69</u>
MRP based on Bloomberg data	<u>10.90</u> %

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.12 %

- (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 Blue Chip Financial Forecasts. (See pages 10-11 of Schedule DWD-4.) The projection of the risk-free rate is illustrated below:

Second Quarter 2018	3.20 %
Third Quarter 2018	3.30
Fourth Quarter 2018	3.50
First Quarter 2019	3.60
Second Quarter 2019	3.70
Third Quarter 2019	3.80
2019-2023	4.10
2024-2028	<u>4.30</u>
	<u>3.69</u> %

- (3) Average of Column 6 and Column 7.

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2017 and April 1, 2018
Stocks, Bonds, Bills, and Inflation - 2017 SBB! Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Carolina Water Service, Inc. of North Carolina
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group was then selected based on the unadjusted beta range of 0.38 – 0.78 and residual standard error of the regression range of 2.4465 – 2.9177 of the Utility 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 Utility Proxy Group's residual standard error of the regression is 0.1178. 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

$$\text{Thus, } 0.1178 = \frac{2.6821}{\sqrt{518}} = \frac{2.6821}{22.7596}$$

Source of Information: Value Line, Inc., March 2018
Value Line Investment Survey (Standard Edition)

Carolina Water Services, Inc. of North Carolina
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Six 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.	0.75	0.62	2.7925	0.1058
American Water Works Company Inc	0.65	0.42	2.0354	0.0771
Aqua America Inc	0.70	0.54	2.1992	0.0833
California Water Service Group	0.75	0.62	2.6641	0.1010
Middlesex Water Co.	0.80	0.63	3.1066	0.1177
York Water Co.	0.80	0.67	3.2949	0.1249
Average	<u>0.74</u>	<u>0.58</u>	<u>2.6821</u>	<u>0.1016</u>
Beta Range (+/- 2 std. Devs. of Beta) 2 std. Devs. of Beta	0.38 0.20	0.78		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.4465	2.9177		
Std. dev. of the Res. Std. Err.	0.1178			
2 std. devs. of the Res. Std. Err.	0.2356			

Source of Information: Valueline Proprietary Database, March 2018

Carolina Water Services, Inc. of North Carolina
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Seventeen 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>
ABM Industries Inc.	0.80	0.67	2.5536	0.0968
AutoZone Inc.	0.80	0.69	2.6223	0.0994
Cheesecake Factory	0.75	0.55	2.7238	0.1032
CBOE Holdings	0.70	0.49	2.5467	0.0965
Chemed Corp.	0.80	0.63	2.9158	0.1105
C.H. Robinson	0.85	0.71	2.6970	0.1022
Cigna Corp.	0.85	0.76	2.7306	0.1035
Darden Restaurants	0.85	0.74	2.7669	0.1049
DaVita Inc.	0.85	0.77	2.7539	0.1044
Forrester Research	0.70	0.48	2.6673	0.1011
Hormel Foods	0.75	0.56	2.5540	0.0968
IQVIA Holdings	0.85	0.75	2.5724	0.0989
Mercury General	0.80	0.62	2.4507	0.0929
Vail Resorts	0.80	0.69	2.5050	0.0949
Pinnacle Foods	0.80	0.66	2.5411	0.0973
Spectrum Brands	0.85	0.70	2.8926	0.1096
West Pharmac. Svcs.	0.85	0.74	2.6305	0.0997
Average	<u>0.80</u>	<u>0.66</u>	<u>2.6500</u>	<u>0.1000</u>
Proxy Group of Six Water Companies	<u>0.74</u>	<u>0.58</u>	<u>2.6821</u>	<u>0.1016</u>

Source of Information:

Valueline Proprietary Database, March 2018

Carolina Water Services, Inc. of North Carolina
Summary of Cost of Equity Models Applied to
Proxy Group of Seventeen Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

<u>Principal Methods</u>	<u>Proxy Group of Seventeen Non- Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	14.15 %
Risk Premium Model (RPM) (2)	12.46
Capital Asset Pricing Model (CAPM) (3)	<u>11.78</u>
	Mean <u>12.80</u> %
	Median <u>12.46</u> %
	Average of Mean and Median <u>12.63</u> %

Notes:

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

Carolina Water Services, Inc. of North Carolina
 DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seventeen 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 (1)
ABM Industries Inc.	1.91 %	15.00 %	16.00 %	NA %	16.00 %	15.67 %	2.06 %	17.73 %
AutoZone Inc.	-	11.50	11.68	12.70	11.68	11.89	-	NA
Cheesecake Factory	2.42	7.00	10.88	14.40	10.88	10.79	2.55	13.34
CBOE Holdings	0.89	16.50	17.90	17.60	17.90	17.48	0.97	18.45
Chemed Corp.	0.42	13.50	10.00	10.00	10.00	10.88	0.44	11.32
C.H. Robinson	2.00	9.50	9.86	9.00	9.86	9.56	2.10	11.66
Cigna Corp.	0.02	12.50	13.92	12.90	13.92	13.31	0.02	13.33
Darden Restaurants	2.66	13.00	13.52	10.90	13.53	12.74	2.83	15.57
DaVita Inc.	-	9.00	23.74	16.80	23.74	18.32	-	NA
Forrester Research	1.88	8.00	12.00	12.00	12.00	11.00	1.98	12.98
Hormel Foods	2.22	10.50	NA	9.30	0.53	6.78	2.30	9.08
IQVIA Holdings	-	14.50	16.65	13.80	16.15	15.28	-	NA
Mercury General	5.25	14.00	25.30	25.30	25.30	22.48	5.84	28.32
Vail Resorts	2.68	18.00	23.70	NA	23.70	21.80	2.97	24.77
Pinnacle Foods	2.25	10.50	9.60	8.00	9.60	9.43	2.36	11.79
Spectrum Brands	1.56	12.00	5.05	14.60	5.05	9.18	1.63	10.81
West Pharmac. Svcs.	0.60	14.00	10.20	13.70	10.20	12.03	0.64	12.67
							Mean	<u>15.13 %</u>
							Median	<u>13.16 %</u>
							Average of Mean and Median	<u>14.15 %</u>

NA= Not Available
 NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of March 30, 2018. The dividend yield is then adjusted by 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 03/29/2018
 www.zacks.com Downloaded on 03/29/2018
 www.yahoo.com Downloaded on 03/29/2018

Carolina Water Services, Inc. of North Carolina
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 Seventeen Non- Price Regulated Companies</u>
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	5.41 %
2.	Equity Risk Premium (2)	<u>7.05</u>
3.	Risk Premium Derived Common Equity Cost Rate	<u>12.46 %</u>

Notes: (1) Average forecast of Baa corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated December 1, 2017 and April 1, 2018 (see pages 10 and 11 of Schedule DWD-4). The estimates are detailed below.

Second Quarter 2018	4.80 %
Third Quarter 2018	5.00
Fourth Quarter 2018	5.10
First Quarter 2019	5.30
Second Quarter 2019	5.40
Third Quarter 2019	5.50
2019-2023	6.00
2024-2028	<u>6.20</u>
Average	<u>5.41 %</u>

(2) From page 5 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Moody's</u> <u>Long-Term Issuer Rating</u> <u>March 2018</u>		<u>Standard & Poor's</u> <u>Long-Term Issuer Rating</u> <u>March 2018</u>	
	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>
ABM Industries Inc.	NR	--	NR	--
AutoZone Inc.	Baa1	8.0	BBB	9.0
Cheesecake Factory	NR	--	NR	--
CBOE Holdings	Baa1	8.0	BBB+	8.0
Chemed Corp.	WR	--	NR	--
C.H. Robinson	NR	--	BBB+	8.0
Cigna Corp.	Baa1	8.0	A	--
Darden Restaurants	Baa2	9.0	BBB	9.0
DaVita Inc.	Ba3	13.0	BB	12.0
Forrester Research	NR	--	NR	--
Hormel Foods	A1	5.0	A	6.0
IQVIA Holdings	NR	--	BBB-	10.0
Mercury General	Baa2	9.0	NR	--
Vail Resorts	NR	--	NR	--
Pinnacle Foods	NR	--	BB-	13.0
Spectrum Brands	NR	--	NR	--
West Pharmac. Svcs.	NR	--	NR	--
Average	Baa2	8.6	BBB	9.4

Notes:

(1) From page 6 of Schedule DWD-4.

Source of Information:

Bloomberg Professional Services

Carolina Water Services, Inc. of North Carolina
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Seventeen Non- Price Regulated Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.56 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.31
3.	Ibbotson Equity Risk Premium based on PRPM (3)	<u>6.66</u>
4.	Average Ibbotson Equity Risk Premium	<u><u>6.51</u></u>
<u>Value Line-Based Equity Risk Premiums:</u>		
5.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	4.68
6.	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies (5)	<u>11.07</u>
7.	Average <u>Value Line</u> Equity Risk Premium	<u><u>7.87</u></u>
<u>Bloomberg-Based Equity Risk Premium:</u>		
8.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>9.93</u>
9.	Conclusion of Equity Risk Premium (7)	8.10 %
10.	Adjusted Beta (8)	<u>0.87</u>
11.	Forecasted Equity Risk Premium	<u><u>7.05 %</u></u>

Notes:

- (1) From note 1 of page 9 of Schedule DWD-4.
- (2) From note 2 of page 9 of Schedule DWD-4.
- (3) From note 3 of page 9 of Schedule DWD-4.
- (4) From note 4 of page 9 of Schedule DWD-4.
- (5) From note 5 of page 9 of Schedule DWD-4.
- (6) From note 6 of page 9 of Schedule DWD-4.
- (7) Average of lines 4, 7, and 8.
- (8) Average of mean and median beta from page 6 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2017 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2017 and April 1, 2018
Bloomberg Professional Services

Carolina Water Services, Inc. of North Carolina
 Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Bloomberg Beta</u>	<u>Average Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate</u>	<u>ECAPM Cost Rate</u>	<u>Indicated Common Equity Cost Rate (3)</u>
ABM Industries Inc.	0.80	1.17	0.98	9.12 %	3.69 %	12.63 %	12.67 %	12.65 %
AutoZone Inc.	0.80	0.83	0.81	9.12	3.69	11.08	11.51	11.29
Cheesecake Factory	0.75	0.96	0.86	9.12	3.69	11.53	11.85	11.69
CBOE Holdings	0.70	1.11	0.91	9.12	3.69	11.99	12.19	12.09
Chemed Corp.	0.80	0.97	0.89	9.12	3.69	11.81	12.06	11.93
C.H. Robinson	0.85	0.90	0.87	9.12	3.69	11.62	11.92	11.77
Cigna Corp.	0.85	0.91	0.88	9.12	3.69	11.72	11.99	11.85
Darden Restaurants	0.85	0.91	0.88	9.12	3.69	11.72	11.99	11.85
DaVita Inc.	0.85	0.94	0.89	9.12	3.69	11.81	12.06	11.93
Forrester Research	0.70	1.06	0.88	9.12	3.69	11.72	11.99	11.85
Hormel Foods	0.75	0.61	0.68	9.12	3.69	9.89	10.62	10.26
IQVIA Holdings	0.85	1.07	0.96	9.12	3.69	12.45	12.54	12.49
Mercury General	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
Vail Resorts	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
Pinnacle Foods	0.80	0.71	0.75	9.12	3.69	10.53	11.10	10.82
Spectrum Brands	0.85	0.70	0.78	9.12	3.69	10.80	11.31	11.05
West Pharm. Svcs.	0.85	0.92	0.88	9.12	3.69	11.72	11.99	11.85
Mean			<u>0.86</u>			<u>11.54 %</u>	<u>11.86 %</u>	<u>11.70 %</u>
Median			<u>0.88</u>			<u>11.72 %</u>	<u>11.99 %</u>	<u>11.86 %</u>
Average of Mean and Median			<u>0.87</u>			<u>11.63 %</u>	<u>11.93 %</u>	<u>11.78 %</u>

Notes:

- (1) From Schedule DWD-5, note 1.
- (2) From Schedule DWD-5, note 2.
- (3) Average of CAPM and ECAPM cost rates.

Carolina Water Services, Inc. of North Carolina
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 29, 2018 (1)		Applicable Decile of the NYSE/AMEX/NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)
		(millions)	(times larger)			
1.	<u>Carolina Water Services, Inc. of North Carolina</u>	\$ 182.481		10	5.59%	
2.	<u>Proxy Group of Six Water Companies</u>	\$ 4,240.418	23.2 x	4	0.98%	4.61%

	[A]	[B]	[C]	[D]	[E]
	Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market Capitalization (millions)	Size Premium (Return in Excess of CAPM)
Largest	1	191	\$15,290,475.30	\$80,054.84	-0.35%
	2	200	\$3,010,671.02	\$15,053.36	0.61%
	3	202	\$1,609,575.62	\$7,968.20	0.89%
	4	221	\$1,010,851.81	\$4,573.99	0.98%
	5	227	\$677,120.07	\$2,982.91	1.51%
	6	259	\$541,038.00	\$2,088.95	1.66%
	7	283	\$384,129.20	\$1,357.35	1.72%
	8	361	\$297,164.94	\$823.17	2.08%
	9	487	\$212,609.64	\$436.57	2.68%
Smallest	10	790	\$92,882.17	\$117.57	5.59%

*From 2017 Stocks, Bonds, Bills, and Inflation (SBBBI) 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. 1 Column 3 - Line No. 2 Column 3. For example, the 4.61% in Column 4, Line No. 2 is derived as follows 4.61% = 5.59% - 0.98%.

Carolina Water Services, Inc. of North Carolina
Market Capitalization of Carolina Water Services, Inc. of North Carolina and
Proxy Group of Six Water Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2017 (millions)	[2] Book Value per Share at Fiscal Year End 2017 (1)	[3] Total Common Equity at Fiscal Year End 2017 (millions)	[4] Closing Stock Market Price on March 29, 2018	[5] Market-to- Book Ratio on March 29, 2018 (2)	[6] Market Capitalization on March 29, 2018 (3) (millions)
<u>Carolina Water Services, Inc. of North Carolina</u>		NA	NA	\$ 60.726 (4)	NA		
<u>Based upon Proxy Group of Six Water Companies</u>						300.5 (5)	\$ 182.481 (6)
<u>Proxy Group of Six Water Companies</u>							
American States Water Co.	NYSE	36.681	\$ 14.447	\$ 529.945	\$ 53.060	367.3 %	\$ 1,946.283
American Water Works Company Inc	NYSE	178.445	30.177	\$ 5,385.000	82.130	272.2	14,655.651
Aqua America Inc	NYSE	177.714	11.016	\$ 1,957.621	34.060	309.2	6,052.937
California Water Service Group	NYSE	48.012	14.443	\$ 693.462	37.250	257.9	1,788.463
Middlesex Water Co.	NASDAQ	16.352	14.015	\$ 229.175	36.700	261.9	600.118
York Water Co.	NASDAQ	12.873	9.276	\$ 119.405	31.000	334.2	399.055
Average		<u>78.346</u>	<u>\$ 15.562</u>	<u>\$ 1,485.768</u>	<u>\$ 45.700</u>	<u>300.5 %</u>	<u>\$ 4,240.418</u>

NA= Not Available

Notes: (1) Column 3 / Column 1.

(2) Column 4 / Column 2.

(3) Column 1 * Column 4.

(4) Equals Company-requested rate base multiplied by the Company-requested equity ratio.

(5) The market-to-book ratio of Carolina Water Services, Inc. of North Carolina on March 29, 2018 is assumed to be equal to the market-to-book ratio of Proxy Group of Six Water Companies on March 29, 2018.

(6) Carolina Water Services, Inc. of North Carolina's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at March 29, 2018 of the Proxy Group of Six Water Companies, 300.5%, and Carolina Water Services, Inc. of North Carolina's market capitalization on March 29, 2018 would therefore have been \$182.48 million.

Source of Information: 2017 Annual Forms 10K
Bloomberg Financial Services

I/A
W
7

**Utilities, Inc. Market Capitalization Compared to Proxy Group
Companies American States Water, California Water Service Group,
Middlesex Water Company, and York Water Company**

Utilities Inc.
Equity June 30, 2018
\$252.2 Million

Proxy Group
Market to Book Ratio
March 29, 2018
300.5 (1)

Utilities Inc.
Market Capitalization
\$758 Million

	<u>Market Capitalization</u>
American States Water	\$1,946 Million (2)
California Water Service Group	\$1,788 Million (2)
Middlesex Water Company	\$600 Million (2)
York Water Company	\$399 Million (2)

(1) D'Ascendis Direct Exhibit No. 1, Schedule DWD – 8, page 2, column 5

(2) D'Ascendis Direct Exhibit No. 1, Schedule DWD – 8, page 2, column 6

I/A

Vol 7 I/A

Public Staff D'Ascendis
Direct Cross Examination Exhibit 2

Company Name	Case Number	State	Date Filed	Subject	Recommended ROE	Recommended Structure (Debt / Equity)	Date Authorized	Authorized ROE	Authorized Structure (Debt / Equity)
Middlesex Water Company	WR15030391	NJ	Mar-15	Rate of Return	10.40%	47.00%/53.00%	7/27/2015	9.75%	(1)48.36%/51.64% (1)
Utility Services of Illinois, Inc.	14-0741	IL	Apr-15	Rate of Return	N/A	N/A (3)	9/22/2015	N/A (1)	N/A (1)
Carolina Water Service, Inc.	2015-199-WS	SC	Jun-15	Rate of Return	10.00% - 10.50%	49.29% / 50.71%	12/22/2015	9.34%	(1)8.99% / 51.01% (1)
Aqua Indiana, Inc. Aboite Wastewater Division	44752	IN	Mar-16	Rate of Return	10.15% - 10.70%	49.99% / 50.01%	8/4/2016	9.70%	(1)9.99% / 50.01% (1)
Aqua Ohio, Inc.	16-0907-WW-AIR	OH	May-16	Rate of Return	10.25% - 10.65%	48.05% - 51.95%	2/14/2017	9.87%	(1)8.05% - 51.95% (1)
Raccoon Creek Utility Operating Company, Inc.	SR-2016-0202	MO	Sep-16	Rate of Return	15.75%	88.60% / 11.40%	10/17/2016	12.15%	(1) NA (1)
Aqua Illinois, Inc.	17-0259	IL	May-17	Rate of Return	10.85%	46.83% / 53.17%	3/2/2018	9.60%	(1)46.48%/53.22% (1)
Aqua Virginia, inc.	PUR-2017-00082	VA	Aug-17	Rate of Return	10.60%	49.05% / 50.95%	Ongoing		
Columbia Water Company	R-2017-2598203	PA	Sep-17	Rate of Return	11.30%	41.73%/58.27%	3/1/2018	N/A (1)	N/A (1)
Middlesex Water Company	WR17101049	NJ	Oct-17	Rate of Return	10.70%	47.00%/53.00%	3/6/2018	9.60%	(1)47.00%/53.00% (1)
Indian Hills Utility Operating Company, Inc.	WR-2017-0259	MO	Oct-17	Rate of Return	15.20%	77.12%/22.88%	11/21/2017	12.00%	(1)5.00% / 35.00% (1)
Kaupulehu Water Company	2016-0363	HI	Feb-18	Rate of Return	11.60%	46.00%/54.00%	Ongoing		
Carolina Water Service, Inc.	2017-292-WS	SC	Feb-18	Rate of Return	10.45%-10.95%	48.11%/51.89%	5/26/2018	10.50%	48.11%/51.89%
SUEZ Water Pennsylvania Inc.	R-2018-3000834	PA	Apr-18	Rate of Return	10.40%-11.50%	45.82%/54.18%	Ongoing		
Arizona Water - Northern Group	W-01445A-18-0164	AZ	Jul-18	Rate of Return	10.80%-11.35%	42.75%/57.25%	Ongoing		
Aqua North Carolina, Inc.	W-218, Sub 497	NC	Jul-18	Rate of Return	10.90%	50.00%/50.00%	Ongoing		
Carolina Water Service, Inc. of North Carolina	W-354, Sub 360	NC	Sep-18	Rate of Return	11.50%-11.90%	47.11%/52.89%	Ongoing		

N/A = Not applicable
NA = Not available

Notes:

- (1) Result is a product of a settlement / stipulation.
- (2) Testimony in this area was provided by Pauline M. Ahern.
- (3) Rebuttal Testimony only, no independent analysis.
- (4) Testimony in this area was provided by another witness.

Note: Aqua Virginia in Case Number PUR-2017-00085 with a Stipulation ROE 9.25%

RRA Water Advisory Major Rate Case Decisions January – June 2018

The return on equity authorized in water utility rate cases averaged 9.41%, for the six months ended June 30, 2018, below the 9.56% average ROE authorized water utilities nationwide in rate cases decided in calendar-2017, as monitored by Regulatory Research Associates, an offering of S&P Global Market Intelligence.

During the second quarter, just two water utility rate cases were finalized. In a litigated proceeding in South Carolina, Utilities Inc. subsidiary Carolina Water Service, Inc. was authorized a 10.5% ROE, which marks the highest authorized ROE of the year. In a black box settlement for Missouri American Water Co., which was silent regarding cost of capital parameters, the order noted that the parties had recommended returns on equity in the range of 9.5% to 10%. This case is not included the rate case in the year-to date average, as no ROE determination was made by the commission. If the midpoint of the range in the Missouri case were included, the average for rate cases completed during the first two quarters would have been 9.46%.

In water utility rate cases decided during 2017 the ROE average for decisions that included cost of capital parameters was 9.56%, falling within a range of 9 % to 10.4%.

Water utility rate case decisions — January to June 2018

Date	Company	State	ROR (%)	ROE (%)	Common equity as % of capital	Rate base (\$M)	Test year
03/07/18	Aqua Illinois	IL	7.52	9.60	53.22	268	12/2018
03/22/18	California American Water Co.*	CA	7.61	9.20	55.39	NA	NA
03/22/18	California Water Service Co.*	CA	7.48	9.20	53.40	NA	NA
03/22/18	Golden State Water Co.*	CA	7.91	8.90	57.00	NA	NA
03/22/18	San Jose Water Co.*	CA	7.84	8.90	53.28	NA	NA
03/24/18	Middlesex Water Co.	NJ	6.5	9.60	52.75	245	12/2017
05/02/18	Missouri American Water Co.**	MO	NA	NA	NA	NA	05/2019
05/02/18	Carolina Water Service, Inc.	NC	8.4	10.50	51.89	55.5	08/2017
Average rate award			7.58	9.41	53.85		

As of July 24, 2018.

* This was a cost-of-capital proceeding and no other ratemaking issues were addressed.

** Case was resolved by a black box settlement with no traditional rate case parameters specified in the order. However the parties recommended ROEs ranging from 9.5% to 10%.

NA = Not applicable

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Heike Doerr
 Principal Analyst

Sales & subscriptions
 Sales_NorthAm@spglobal.com

Enquiries
 support.mi@spglobal.com

The 2018 average was driven lower by the ROEs authorized in a California Public Utilities Commission decision impacting the state's four largest water utilities, representing half of the ROEs observed during the period. On March 22, the California Public Utilities Commission approved a revised proposed decision in a cost-of-capital proceeding for California American Water Co., California Water Service Co., Golden State Water Co. and San Jose Water Co. authorizing ROEs ranging from 8.9% to 9.2%. California Water is a subsidiary of California Water Service Group. California American is a subsidiary of American Water Works Co. Inc. Golden State Water is a subsidiary of American States Water Co., and San Jose Water is a subsidiary of SJW Group.

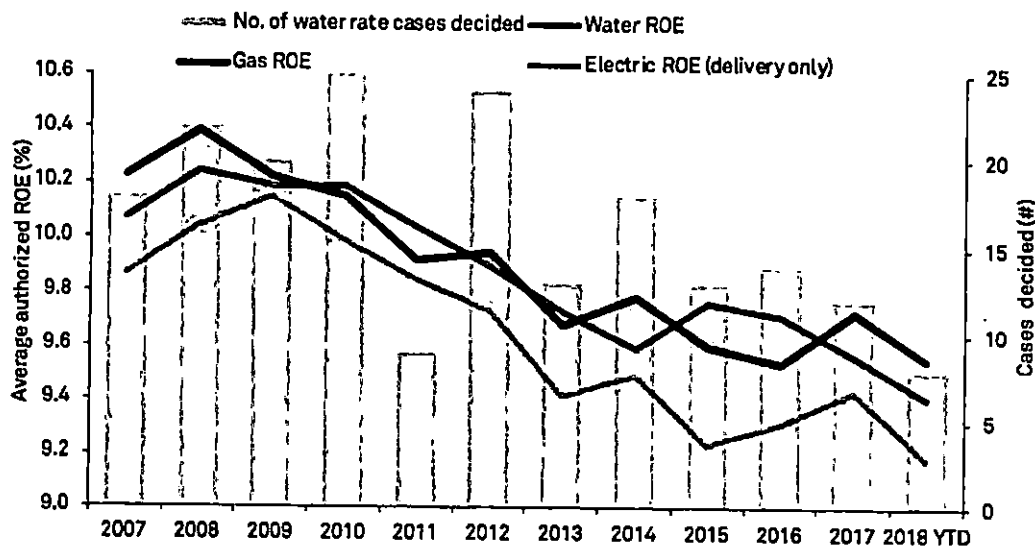
Water rate case activity has been a bit more robust in 2018 as compared to 2017. There have been eight water utility rate proceedings decided in 2018 through June 30, compared to six in the comparable 2017 period. Additionally, a final decision was recently issued in New York and two Virginia proceedings are awaiting a final decision. An additional 23 rate cases are pending, and RRA expects an additional final decisions to be issued during 2018 in seven to ten of those proceedings. During 2017, 12 rate cases were completed with an ROE disclosed in nine of those proceedings.

Utility sector comparison

ROE trends for electric distribution and natural gas utilities similarly declined in 2018. For electric distribution-only utilities, the average ROE authorized in the first half of 2018 was 9.18% versus 9.43% in 2017. The average ROE authorized gas utilities was 9.55% in cases decided during the first two quarters of 2018 versus 9.72% in full year 2017.

As shown in the graph below, the annual average ROE, for all three utility subsectors, has been below 10% since 2012, as the persistently low interest rate environment has put a downward pressure on authorized ROEs.

Average electric, gas and water authorized ROEs



As of July 24, 2018.
 Note: Electric ROE includes rate cases from distribution utilities only
 Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

For additional details on rate case trends for electric and gas utilities, refer to the July 17, 2018 report titled Major Rate Case Decisions – January – June 2018.

Rate case trends

Since 2012, the number of water rate cases has moderated somewhat. Many water utilities have consolidated their smaller operating companies, decreasing the frequency of rate filings. California Water Service Group had previously requested rate changes for its 24 systems on a cycle of eight systems per year, but starting with its 2009 general rate case, now files for all its jurisdictions in a single filing every three years. The two other large, multi-system water utilities in California similarly transitioned to consolidated rate proceedings.

By consolidating its small subsidiaries in each of the sixteen states in which Utilities Inc. operates, the company has also decreased the frequency of base rate case filings. These actions streamline the rate case process and result in lower rate case expenses that are passed on to customers.

During the 2010-to-2012 time frame, American Water Works Company, Inc. and Aqua America, Inc. swapped assets in four states, leaving each company's customer count largely unchanged, while allowing for a more targeted approach to managing regulated operations and optimizing cost structures. Aqua America gained customers in Texas and Ohio in exchange for its New York and Missouri customers. As these systems were consolidated, rate case frequency declined in these jurisdictions.

Lastly, the expansion of infrastructure surcharge mechanisms, has slowed the frequency of base rates case in some jurisdictions. Commonly referred to as a distribution system improvement charge, or DSIC, the mechanism allows water utilities to earn a return on incremental qualifying, non-revenue producing infrastructure replacement in between general rate cases. DSIC mechanisms for water utilities are utilized in sixteen states, with varying parameters regarding: qualifying investments; surcharge caps and frequencies; and, program oversight. Not all infrastructure surcharge programs are created equal.

The water utility sector faces increasing capital investment needs, driven by increasing environmental standards and aging infrastructure, namely distribution pipes. Widely-cited estimates of the spending needed to upgrade, replace, and expand water & wastewater infrastructure over the next 20 years range from \$600 billion to \$1.3 trillion. It stands to reason that this accelerated spending would warrant the continuation of an active rate case agenda over the next few years.

Historical rate case details

RRA currently evaluates water utility regulation in 25 state jurisdictions and monitors rate proceedings involving rate change requests of \$0.5 million or greater for the thirteen largest investor-owned and privately-held water utilities. As RRA broadens its water utility coverage to encompass all 44 states that currently regulate water utilities, this data set will continue to expand, which will likely result in some adjustments to the historical water industry averages, as historical data is backfilled.

The individual water utility rate cases for 2014 through 2017 are listed on pages 5 through 6, with the decision date shown first, followed by the company name, the abbreviation for the state issuing the decision, the authorized rate of return, or ROR, ROE, and percentage of common equity in the adopted capital structure. The following columns show the month and year in which the adopted test year ended, and the rate base. Additional details regarding rate requests and rate rewards pertaining to 2018 proceedings are detailed on page 7.

The simple mean is utilized for the return averages. In addition, the average equity returns indicated in this report reflect the cases decided in the specified time periods and are not necessarily representative of the returns actually earned by utilities industry wide.

Average ROEs authorized 2007 - H1 2018

Year	Period	Water utilities		Electric utilities **		Gas utilities	
		ROE %	(# Cases)*	ROE %	(# Cases)*	ROE %	(# Cases)*
2007	Full year	10.07	(15)	9.91	(11)	10.22	(35)
2008	Full year	10.24	(15)	9.86	(9)	10.39	(32)
2009	Full year	10.18	(17)	10.04	(10)	10.22	(30)
2010	Full year	10.18	(25)	10.15	(17)	10.15	(39)
2011	Full year	10.04	(8)	9.98	(12)	9.92	(16)
2012	Full year	9.90	(21)	9.85	(13)	9.94	(35)
2013	Full year	9.73	(11)	9.73	(11)	9.68	(21)
	1st quarter	9.60	(4)	9.38	(3)	9.54	(6)
	2nd quarter	9.58	(5)	9.65	(3)	9.84	(8)
	3rd quarter	9.77	(3)	9.64	(4)	9.45	(6)
	4th quarter	9.20	(1)	9.22	(3)	10.28	(6)
2014	Full year	9.59	(13)	9.49	(13)	9.78	(26)
	1st quarter	9.74	(4)	9.75	(1)	9.47	(3)
	2nd quarter	10.05	(2)	9.00	(2)	9.43	(3)
	3rd quarter	9.75	(3)	NA	0	9.75	(1)
	4th quarter	9.55	(2)	9.09	(3)	9.88	(9)
2015	Full year	9.78	(11)	9.17	(6)	9.60	(16)
	1st quarter	9.60	(5)	NA	0	9.48	(6)
	2nd quarter	9.75	(1)	9.39	(4)	9.42	(6)
	3rd quarter	9.93	(2)	9.83	(2)	9.47	(4)
	4th quarter	9.79	(1)	9.09	(6)	9.88	(10)
2016	Full year	9.71	(9)	9.31	(12)	9.54	(28)
	1st quarter	9.56	(4)	9.40	(3)	9.60	(3)
	2nd quarter	9.18	(2)	9.53	(3)	9.47	(7)
	3rd quarter	10.40	(1)	9.63	(3)	10.14	(6)
	4th quarter	9.55	(2)	9.26	(5)	9.65	(8)
2017	Full year	9.58	(9)	9.43	(14)	9.72	(24)
	1st quarter	9.23	(6)	9.00	(1)	9.68	(6)
	2nd quarter	10.50	(1)	9.23	(4)	9.43	(7)
2018	1st half	9.41	(7)	9.18	(5)	9.55	(13)

As of June 30, 2018.

* (# cases) identifies the amount of ROE datapoints available, not the amount of rate cases completed during the period.

** Electric ROE includes distribution-only rate proceedings

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

© 2018 S&P Global Market Intelligence. All rights reserved. Regulatory Research Associates is a group within S&P Global Market Intelligence, a division of S&P Global (NYSE:SPGI). Confidential Subject Matter. WARNING! This report contains copyrighted subject matter and confidential information owned solely by S&P Global Market Intelligence (SPGMI). Reproduction, distribution or use of this report in violation of this license constitutes copyright infringement in violation of federal and state law. SPGMI hereby provides consent to use the "email this story" feature to redistribute articles within the subscriber's company. Although the information in this report has been obtained from sources that SPGMI believes to be reliable, SPGMI does not guarantee its accuracy.

Water utility decisions (2014-2015)

Date	Company	State	Return on rate base (%)	Return on equity (%)	Common equity as % of capital	Rate base (\$M)	Test year
01/09/14	The York Water Co.	PA	NA	NA	NA	NA	02/15
02/21/14	Aqua Virginia Utilities, Inc.	VA	7.24	9.75	NA	NA	12/12
02/28/14	Iowa American Water Co.	IA	8.47	9.41	52.57	101	12/12
03/10/14	Carolina Water Service of North Carolina	NC	8.18	9.75	50.27	36	12/12
03/04/14	Carolina Water Services, Inc.	SC	7.97	9.50	NA	27	12/12
04/15/14	Golden States Water	CA	NA	NA	NA	695	12/10
05/02/14	Aqua North Carolina	NC	7.52	9.75	50.00	128	03/13
05/23/14	Waikoloa Utilities	HI	7.75	9.90	50.00	17	08/13
06/18/14	Middlesex Water Co.	NJ	6.72	9.75	50.71	209	03/14
06/24/14	SUEZ Water New York Inc.	NY	6.88	9.20	44.00	273	05/16
06/24/14	SUEZ Water Westchester	NY	7.52	9.20	47.00	38	05/16
08/14/14	San Jose Water	CA	NA	NA	NA	517	12/13
08/18/14	California Water	CA	NA	NA	NA	861	12/14
08/19/14	Tidewater Utilities, Inc.	DE	7.92	9.75	50.96	NA	09/13
08/20/14	Aqua New Jersey	NJ	7.70	9.75	52.47	115	04/14
09/10/14	Aqua Ohio Water Co.	OH	7.47	9.80	51.80	152	03/14
11/14/14	SUEZ Water New Rochelle, Inc.	NY	7.52	9.20	47.00	207	10/15
12/18/14	Suburban Water	CA	NA	NA	NA	120	12/15
2014 Averages/total			7.60	9.59	49.69		
Observations			13	13	11		
01/28/15	Indiana American Water Co.	IN	6.60	9.75	41.55	842	11/16
02/19/15	Waikoloa Water	HI	7.75	9.89	50.00	NA	06/13
03/11/15	Maine Water	ME	7.20	9.50	48.50	18	12/13
03/25/15	Aqua Illinois	IL	8.09	9.81	53.28	87	12/15
04/09/15	California American Water Co.	CA	NA	NA	NA	443	12/15
05/26/15	Maryland American Water	MD	NA	10.00	NA	NA	09/14
06/29/15	Kona Water Service	HI	7.75	10.10	53.00	11	08/15
08/19/15	SUEZ Toms River	NJ	7.65	9.75	53.00	99	12/15
08/19/15	Middlesex Water Co.	NJ	6.73	9.75	51.36	219	06/15
09/11/15	New Jersey American Water Co. Inc	NJ	7.55	9.75	52.00	2,390	07/15
10/29/15	SUEZ Water Pennsylvania	PA	NA	NA	NA	NA	10/16
12/07/15	Carolina Water Service of North Carolina	NC	8.20	9.75	51.00	59	12/14
12/22/15	Carolina Water Services, Inc.	SC	7.99	9.34	NA	51	10/16
2015 Averages/total			7.55	9.76	50.41		
YTD Observations			10	11	9		

As of June 30, 2018.

NA: Data unavailable

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Water utility decisions (2016-2017)

Date	Company	State	Return on rate base (%)	Return on equity (%)	Common equity as % of capital	Rate base (\$M)	Test year
01/07/16	Aqua Virginia, Inc.	VA	6.84	9.25	49.20	60	12/14
01/19/16	Artesian Water	DE	7.82	9.75	50.54	217	12/17
01/25/16	Utilities, Inc. of Central Nevada (UICN)	NV	6.94	9.50	49.45	60	NA
02/24/16	West Virginia American Water Co.	WV	7.31	9.75	45.84	529	02/16
02/24/16	CWS Systems, Inc.	NC	8.20	9.75	51.00	14	12/14
04/27/16	SUEZ New Jersey Inc.	NJ	7.60	9.75	53.00	735	06/16
05/26/16	Missouri American Water Co.	MO	NA	NA	NA	NA	12/14
06/16/16	San Jose Water Co.	CA	NA	NA	NA	659	12/16
08/09/16	Aqua New Jersey	NJ	7.48	9.75	52.86	133	04/16
08/23/16	Kentucky American Water Co.	KY	NA	NA	NA	NA	08/17
09/12/16	Hawaii Water Service K'Anapali Division	HI	7.75	10.10	53.00	12	12/16
12/13/16	Illinois American Water Co.	IL	7.47	9.79	49.80	883	12/17
12/15/16	Golden States Water	CA	NA	NA	NA	700	12/16
12/15/16	California Water Co.	CA	NA	NA	NA	996	12/17
2016	Averages/total		7.50	9.71	50.52		
	Observations		9	9	9		
01/27/17	SUEZ Water New York	NY	8.82	9.00 ¹	46.00	332	01/18
02/24/17	SUEZ Water Delaware	DE	NA	9.75	NA	NA	06/16
02/27/17	Iowa American Water	IA	8.28	9.60	52.04	108	12/15
03/22/17	Aqua Ohio, Inc.	OH	7.47	9.87	NA	169	12/16
05/18/17	New York American Water Co.	NY	6.56	9.10	46.00	276	03/18
05/24/17	Virginia-American Water	VA	7.13	9.25	46.09	148	06/15
08/21/17	Monarch Utilities	TX	NA	NA	NA	82	06/15
09/21/17	Great Basin Water Co.	NV	NA	NA	NA	NA	10/16
09/25/17	Utilities Inc. of Florida ²	FL	7.09	10.40 ²	41.92	82	12/15
11/08/17	Carolina Water Service, Inc. of North Carolina	NC	7.84	9.60	52.00	98	12/16
12/18/17	Pennsylvania American Water Co.	PA	NA	NA	NA	NA	12/18
12/18/17	The Maine Water Co.	ME	NA	9.50	NA	NA	12/16
2017	Averages/total		7.33	9.56	47.34		
	YTD Observations		7	7	6		

As of June 30, 2018.

NA: Data unavailable

¹An ROE of 7.8% was authorized for investment in the Haverstraw project, making the effective equity return nominally lower.

²Effective equity return is lower, due to punitive returns in 3 systems for unsatisfactory service quality

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

2018 Water utility decisions

State	Company	Initial filing date	Increase requested						Increase authorized											
			Rate change requested (\$M)	Rate change requested (%)	Return on rate base (%)	Return on equity (%)	Common equity/total cap (%)	Rate base (\$M)	Order date	Decision type	Rate change authorized (\$M)	Rate change authorized (%)	Return on rate base (%)	Return on equity (%)	Common equity/total cap (%)	Test year end	Rate base (\$M)			
Illinois	Aqua Illinois	05/01/17	10.5 W	1.5 WW	NA	8.18	10.85	53.17	238 W	31 WW	3/7/18	Litigated	6.5 W	19.1 W	7.52	9.6	53.22	12/2018	237 W	31WW
California	California American Water Co.*	04/03/17	4.9	NA	8.41	10.80	55.39	NA	NA	3/22/18	Litigated	NA	NA	7.61	9.2	55.39	NA	NA	NA	NA
California	California Water Service Co.*	04/03/17	8.2	1.4	8.31	10.75	53.40	NA	NA	3/22/18	Litigated	NA	NA	7.48	9.2	53.40	NA	NA	NA	NA
California	Golden State Water Co.**	04/03/17	12.1	4.0	9.11	11.00	57.00	NA	NA	3/22/18	Litigated	NA	NA	7.91	8.9	57.00	NA	NA	NA	NA
California	San Jose Water Co.*	04/03/17	7.6	2.1	8.63	10.75	53.28	NA	NA	3/22/18	Litigated	NA	NA	7.64	8.9	53.28	NA	NA	NA	NA
New Jersey	Middlesex Water Co.	09/11/17	15.3	19.8	7.07	10.70	52.75	263	1,341 W	3/24/18	Settled	5.486	7.2	6.496	9.6	52.75	12/2017	245	NA	
Missouri	Missouri American Water Co.**	06/30/17	89.0 W	0.4 WW	NA	8.07	10.80	51.03	30 WW	5/2/18	Settled	24	8.16	NA	NA	NA	05/2019	NA	NA	
South Carolina	Carolina Water Service, Inc.	11/14/17	2.3 W	23.0	8.62	NA	51.89	25 W	30 WW	5/2/18	Litigated	2.8	NA	8.42	10.5	51.89	08/2017	56	NA	

As of July 24, 2018.

* This was a cost-of-capital proceeding and no other ratemaking issues were addressed.

** Case was resolved by a black box settlement with no traditional rate case parameters specified in the order. However the parties recommended ROEs ranging from 9.5% to 10%.

NA = Not applicable

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

I/A

I/A
w/7

2018 Water Utility
Decisions D'Ascendis
Proxy Group

(Source RRA Water Advisory dated July 27, 2018
Major Rate Case Decisions January – June 2018)

<u>Company</u>	<u>State</u>	<u>Order Date</u>	<u>Approved ROE %</u>	<u>Type Case</u>
Aqua Illinois	Illinois	March 7, 2018	9.6	Litigated
California America Water	California	March 22, 2018	9.2	Litigated
California Water Service	California	March 22, 2018	9.2	Litigated
Golden State Water (a subsidiary of American States Water)	California	March 22, 2018	8.9	Litigated
Middlesex Water	New Jersey	March 24, 2018	<u>9.6</u>	Settled

Average Approved ROE of these six = 9.30%

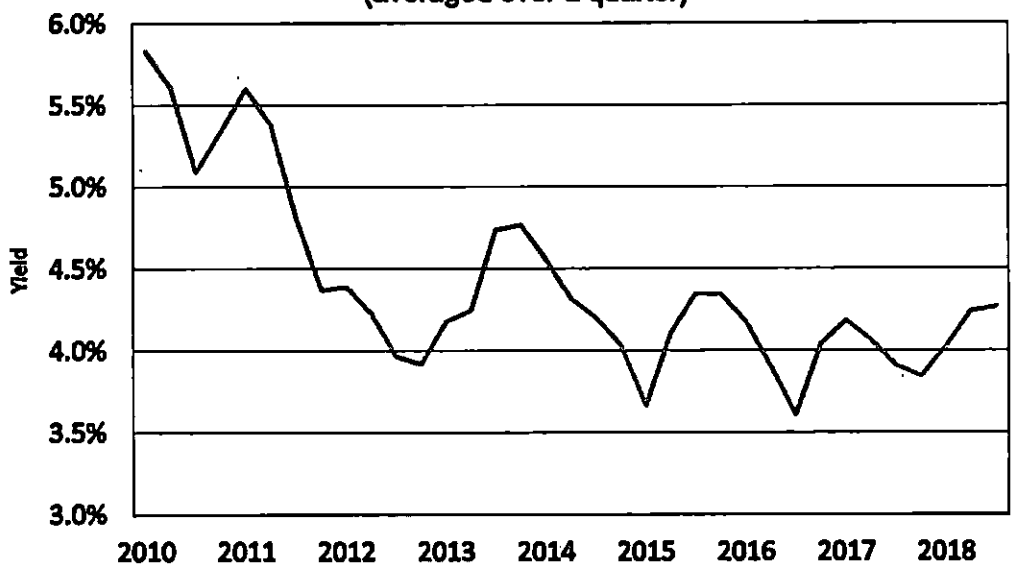
(Note:) Aqua Virginia entered into a Joint Stipulation in rate increase Case No. PUR-2017-00082 presented on the Virginia State Corporate Commission at the evidentiary hearing in Richmond on April 24, 2018, which stipulated to use an ROE range of 8.75% to 9.75%, as stated on page 73 of the Report of D. Mathis Roussy, Jr., Hearing Examiner dated August 16, 2018. Aqua Virginia filed a Response to Report of D. Mathis Roussy, Jr., Hearing Examiner dated September 6, 2018, which on page 4 states that the Commission should adopt the Hearing Examiner's Report, and adopt the parties' Stipulation. This Aqua Virginia Response further states on page 11, that Aqua Virginia agrees that the Hearing Examiner proposed 9.25%, Aqua Virginia's current ROE, is the appropriate ROE.

I/A

Vol 7

Public Staff
Hinton Exhibit JRH-1
Docket No. W-354, Sub 360

Moody's A-Rated Utility Bond Yields
(averaged over a quarter)



I/A
Vol. 7

Public Staff
Hinton Exhibit JRH-2
Docket No. W-354, Sub 360

RISK MEASURES
Group of Water Companies

Company Name	Value Line ¹					S&P		
	Safety	Beta	Financial Strength	Earnings Predict.	Price Stability	Bond Rating ²	Stock Rating ³	Beta ⁴
1 American States Water	2	0.80	A	95	75	A+	A+	0.27
2 American Water Works	3	0.65	B+	90	100	A	B	0.17
3 Aqua America	2	0.75	A	90	95	A+	A+	0.42
4 California Water Service	3	0.80	B++	65	75	A+	A+	0.60
5 Middlesex Water	2	0.80	B++	80	65	A	A-	0.45
6 York Water	3	0.80	B+	90	60	A-	A	0.37
Average	2.5	0.77		85	78			0.38

Sources:

¹ Value Line Reports for July 13, 2018.

² S&P Global Ratings, various issues.

³ S&P Global, CFPR Quantitative Stock Report, dated August 17, 2018 and August 18, 2018.

⁴ ibid.

Connecticut Water	3	0.65	B+	85	85	A	A
SJW Corp.	3	0.75	B+	45	65	A	B+

2. Value Line Reports for March 3, 2017.

DCF ANALYSIS
Group of Water Utility Companies

Company Name	Yield ¹	Value Line ²						Yahoo ³				Average ⁴ Forecast Growth Rate
		Value Line ²			Value Line Forecast ²			Forecast				
		EPS 10-Yr	DPS 10-Yr	BPS 10-Yr	EPS 5-Yr	DPS 5-Yr	BPS 5-Yr	EPS 5-Yr	DPS 5-Yr	BPS 5-Yr	EPS 5-Yr	
1 American States Water	1.9	9.0	7.0	5.0	7.0	10.5	4.5	6.0	8.0	4.0	4.0	5.5
2 American Water Works	2.2	NA	NA	1.0	7.5	8.5	4.0	10.0	10.0	6.0	8.1	8.5
3 Aqua America	2.5	8.5	7.5	6.5	9.5	8.0	7.5	7.5	9.0	5.5	5.0	6.8
4 California Water	1.9	4.5	2.0	4.5	4.0	2.5	5.0	9.5	6.5	3.0	9.8	7.2
5 Middlesex Water	2.1	5.0	2.0	3.5	8.0	2.0	3.5	8.0	5.5	4.0	2.7	5.1
6 York Water	2.1	5.5	3.5	5.0	6.5	3.5	3.5	9.0	8.0	5.0	4.9	6.7
Average	2.1	6.5	4.4	4.3	7.1	5.8	4.7	8.3	7.8	4.6	5.8	6.6
DCF Result		8.6	6.5	6.4	9.2	7.9	6.8	10.4	9.9	6.7	7.9	8.7

Source:

¹ Value Line Summary and Index for June 29, 2018 through September 21, 2018.

² July 13, 2018 Value Line Reports.

³ Yahoo Finance reporting of 5-Yr consensus EPS forecasts, downloaded on September 24, 2018.

⁴ The average calculation includes all four measures of predicted growth rate.

Note: Connecticut Water Service, Inc. and the SJW Group were excluded from the Value Line sample due to a merger.

W1.7
I/A

I/A
vol 7

**Market Prices – California Water Companies-
California Public Utilities Commission
Order Dated March 22, 2018**

<u>Company</u>	<u>Approved ROE</u>
California American Water Co.(1)	9.20%
California Water Service Co.	9.20%
Golden State Water Co.(2)	8.90%
San Jose Water Co.	8.90%

Stock Prices – Market Close (3)

	<u>March 22, 2018</u>	<u>March 26, 2018</u>	<u>October 15, 2018</u>
American Water Works (AWK)	\$80.15	\$79.87	\$88.00
American States Water (AWR)	\$54.45	\$52.86	\$59.01
California Water Service (CWT)	\$37.70	\$36.90	\$40.47
San Jose Water (SJW)	\$53.21	\$52.69	\$58.25

- (1) California American Water Co. is a wholly owned subsidiary of American Water Works.
- (2) Golden State Water Co. is a wholly owned subsidiary of American States Water.
- (3) Source: MSN Money

I/A

Vol. 7

REGRESSION ANALYSIS OF ALLOWED RETURNS ON EQUITY

Year	[A] Water Utilities Approved Returns on Equity ¹	[B] Moody's A-Rated Bond Yields ²	[C]=[A]-[B] Water Utility Risk Premium
2006	10.23%	6.07%	4.16%
2007	10.07%	6.05%	4.02%
2008	10.24%	6.51%	3.73%
2009	10.18%	6.04%	4.15%
2010	10.18%	5.47%	4.71%
2011	10.04%	5.04%	5.00%
2012	9.90%	4.13%	5.77%
2013	9.73%	4.48%	5.25%
2014	9.59%	4.28%	5.31%
2015	9.76%	4.12%	5.65%
2016	9.71%	3.93%	5.78%
2017	9.56%	4.00%	5.56%
2018	9.41%	4.17%	5.24%
		Average	4.95%
		Maximum	5.78%
		Minimum	3.73%

Sources:

¹ Regulatory Research Associates, Water Advisory, June 8, 2017 and July 27, 2018.

² Moody's Creditrends with yield data as of August 31, 2018.

I/A

FILED Vol-7

SEP 05 REC'D

Clerk's Office
N.C. Utilities Commission

Carolina Water Service, Inc. of North Carolina
Table of Contents
to D'Ascendis Direct Exhibit No. 1

	<u>Schedule</u>
Summary of Cost of Capital and Fair Rate of Return	DWD-1
Financial Profile of the Utility Proxy Group	DWD-2
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model	DWD-3
Indicated Common Equity Cost Rate Using the Risk Premium Model	DWD-4
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model	DWD-5
Basis of selection for the Non-Price Regulated Companies Comparable in Total Risk to the Utility Proxy Group	DWD-6
Cost of Common Equity Models Applied to the Comparable Risk Non-Price Regulated Companies	DWD-7
Estimated Market Capitalization for Carolina Water Service, Inc. of North Carolina and the Utility Proxy Group	DWD-8

Carolina Water Services, Inc. of North Carolina
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at December 31, 2017

<u>Type Of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	47.11%	6.00% (1)	2.83%
Common Equity	<u>52.89%</u>	11.50% - 11.90% (2)	<u>6.08%</u> - <u>6.29%</u>
Total	<u>100.00%</u>		<u>8.91%</u> <u>9.12%</u>

Notes:

- (1) Company-Provided.
- (2) From page 2 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Brief Summary of Common Equity Cost Rate

<u>Line No.</u>	<u>Principal Methods</u>	<u>Proxy Group of Six Water Companies</u>
1.	Discounted Cash Flow Model (DCF) (1)	9.10%
2.	Risk Premium Model (RPM) (2)	12.12%
3.	Capital Asset Pricing Model (CAPM) (3)	11.31%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>12.63%</u>
5.	Indicated Common Equity Cost Rate before Adjustment for Size Risk	11.50%
6.	Size Risk Adjustment (5)	<u>0.40%</u>
7.	Indicated Common Equity Cost Rate	<u>11.90%</u>
8.	Range of Common Equity Cost Rates	<u>11.50% - 11.90%</u>

- Notes: (1) From Schedule DWD-3.
(2) From page 1 of Schedule DWD-4.
(3) From page 1 of Schedule DWD-5.
(4) From page 1 of Schedule DWD-7.
(5) From Schedule DWD-8.

Proxy Group of Six Water Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2012 - 2016, Inclusive

	2017	2016	2015	2014	2013	
	(MILLIONS OF DOLLARS)					
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	\$3,164.203	\$2,984.170	\$2,830.411	\$2,686.017	\$2,572.465	
SHORT-TERM DEBT	\$211.958	\$175.773	\$118.223	\$94.412	\$123.719	
TOTAL CAPITAL EMPLOYED	\$3,376.161	\$3,159.943	\$2,948.634	\$2,780.429	\$2,696.184	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	4.78 %	4.927 %	5.02 %	5.162 %	5.33 %	
PREFERRED STOCK	5.91 %	5.91 %	5.91 %	5.67 %	6.09 %	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	45.27 %	45.38 %	45.90 %	44.69 %	45.25 %	45.30 %
PREFERRED STOCK	0.12	0.13	0.13	0.14	0.18	0.14
COMMON EQUITY	54.61	54.49	53.97	55.17	54.57	54.56
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	48.90 %	47.91 %	47.03 %	46.27 %	47.02 %	47.43 %
PREFERRED STOCK	0.11	0.12	0.13	0.14	0.16	0.13
COMMON EQUITY	50.99	51.97	52.84	53.60	52.82	52.44
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.42 %	3.63 %	4.38 %	4.88 %	4.91 %	4.25 %
MARKET / AVERAGE BOOK RATIO	318.59	290.78	239.19	223.55	214.84	257.39
DIVIDEND YIELD	1.71	2.19	2.65	2.77	2.89	2.44
DIVIDEND PAYOUT RATIO	59.30	60.14	60.04	56.31	57.21	58.60
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.89 %	10.57 %	10.43 %	10.90 %	10.61 %	10.68 %
TOTAL DEBT / EBITDA (3)	3.56 X	3.51 X	3.43 X	3.31 X	3.45 X	3.45 X
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	22.69 %	22.50 %	26.10 %	26.48 %	24.11 %	24.38 %
TOTAL DEBT / TOTAL CAPITAL	48.90 %	47.91 %	47.03 %	46.27 %	47.02 %	47.42 %

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: Company Annual Forms 10-K

Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Six Water Companies
2012 - 2016, Inclusive

	2017	2016	2015	2014	2013	5 YEAR AVERAGE
<u>American States Water Co.</u>						
Long-Term Debt	37.75 %	39.40 %	41.15 %	39.15 %	40.30 %	39.55 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	62.25	60.60	58.85	60.85	59.70	60.45
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>American Water Works Company Inc</u>						
Long-Term Debt	55.81 %	54.74 %	53.89 %	52.70 %	52.42 %	53.91 %
Preferred Stock	0.07	0.09	0.11	0.15	0.17	0.12
Common Equity	44.12	45.17	46.00	47.15	47.41	45.97
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Aqua America Inc.</u>						
Long-Term Debt	52.26 %	50.81 %	50.76 %	49.45 %	50.32 %	50.72 %
Preferred Stock	0.00	0.00	0.00	0.00	0.01	0.00
Common Equity	47.74	49.19	49.24	50.55	49.67	49.28
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>California Water Service Group</u>						
Long-Term Debt	44.12 %	45.83 %	44.69 %	40.46 %	42.03 %	43.43 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	55.88	54.17	55.31	59.54	57.97	56.57
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Middlesex Water Co.</u>						
Long-Term Debt	38.65 %	38.91 %	40.44 %	41.55 %	41.37 %	40.18 %
Preferred Stock	0.64	0.68	0.69	0.71	0.88	0.72
Common Equity	60.71	60.41	58.87	57.74	57.75	59.10
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>York Water Co.</u>						
Long-Term Debt	43.02 %	42.60 %	44.46 %	44.81 %	45.07 %	43.99 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	56.98	57.40	55.54	55.19	54.93	56.01
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Proxy Group of Six Water Companies</u>						
Long-Term Debt	45.27 %	45.38 %	45.90 %	44.69 %	45.25 %	45.30 %
Preferred Stock	0.12	0.13	0.13	0.14	0.18	0.14
Common Equity	54.61	54.49	53.97	55.17	54.57	54.56
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>

Source of Information
Annual Forms 10-K

Carolina Water Services, Inc. of North Carolina
 Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Six Water Companies</u>	<u>Average Dividend Yield (1)</u>	<u>Value Line Projected Five Year Growth in EPS (2)</u>	<u>Reuters Mean Consensus Projected Five Year Growth Rate in EPS</u>	<u>Zack's Five Year Projected Growth Rate in EPS</u>	<u>Yahoo! Finance Projected Five Year Growth in EPS</u>	<u>Average Projected Five Year Growth in EPS (3)</u>	<u>Adjusted Dividend Yield (4)</u>	<u>Indicated Common Equity Cost Rate (5)</u>
American States Water Co.	1.89 %	6.50 %	4.00 %	5.00 %	4.00 %	4.88 %	1.94 %	6.82 %
American Water Works Company Inc	2.04	8.50	10.60	7.50	8.20	8.70	2.13	10.83
Aqua America Inc	2.36	7.00	7.00	6.00	5.00	6.25	2.43	8.68
California Water Service Group	1.88	10.00	NA	6.00	9.80	8.60	1.96	10.56
Middlesex Water Co.	2.43	9.00	NA	NA	2.70	5.85	2.50	8.35
York Water Co.	2.18	9.50	NA	NA	4.90	7.20	2.26	9.46
							Average	<u>9.12 %</u>
							Median	<u>9.07 %</u>
							Average of Mean and Median	<u>9.10 %</u>

NA= Not Available

Notes:

- (1) Indicated dividend at 03/29/2018 divided by the average closing price of the last 60 trading days ending 03/29/2018 for each company.
- (2) From pages 2 through 7 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., $1.89\% \times (1 + (1/2 \times 4.88\%)) = 1.94\%$.
- (5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
 www.reuters.com Downloaded on 03/29/2018
 www.zacks.com Downloaded on 03/29/2018
 www.yahoo.com Downloaded on 03/29/2018

AMER. STATES WATER NYSE-AWR										RECENT PRICE		P/E RATIO		RELATIVE P/E RATIO		DIVD YLD		VALUE LINE																			
										56.40		32.0 (Trailing: 30.8 Median: 20.0)		1.56		1.9%																					
TIMELINESS 2 Raised 12/1/17 SAFETY 2 Raised 7/20/12 TECHNICAL 2 Raised 12/29/17 BETA .80 (1.00 = Market)																				Target Price Range		2020		2021		2022											
2020-22 PROJECTIONS High Price 55, Low Price 40, Gain (Nil), Ann'l Total Return 2%, Options: Yes										Insider Decisions N A M J J A S O N to Buy 0 0 0 0 0 0 0 0 0 0 Options 11 0 8 2 0 3 4 0 2 to Sell 3 1 4 3 2 4 3 2 4										Institutional Decisions 10/20/17 20/20/17 30/20/17 to Buy 87 96 104 to Sell 89 84 79 Wd's (000) 29082 28355 27880										Percent shares traded		24		16		8	
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018										VALUE LINE PUB. LLC		20-22																									
6.53 6.89 6.99 6.81 7.03 7.88 8.75 9.21 9.74 10.71 11.12 12.12 12.19 12.17 12.56 11.92 12.40 12.65 1.26 1.27 1.04 1.11 1.32 1.45 1.65 1.69 1.70 2.11 2.13 2.48 2.65 2.67 2.81 2.70 2.85 3.05 .57 .57 .39 .53 .66 .67 .81 .78 .81 1.11 1.12 1.41 1.61 1.57 1.60 1.62 1.85 1.85 .43 .44 .44 .44 .45 .46 .48 .50 .51 .52 .55 .64 .76 .83 .87 .91 .99 1.06										Revenues per sh		15.95																									
1.59 1.34 1.88 2.51 2.12 1.95 1.45 2.23 2.09 2.12 2.13 1.77 2.52 1.89 2.39 3.55 3.15 3.15 6.61 7.02 6.98 7.51 7.86 8.32 8.77 8.97 9.70 10.13 10.84 11.80 12.72 13.24 12.77 13.52 14.20 14.85										"Cash Flow" per sh		3.85																									
30.24 30.36 30.42 30.43 33.60 34.10 34.46 34.60 37.06 37.26 37.70 38.53 38.72 38.29 36.50 36.57 36.70 36.80										Earnings per sh A		2.35																									
16.7 16.3 31.9 23.2 21.9 27.7 24.0 22.6 21.2 15.7 15.4 14.3 17.2 20.1 24.6 25.6 26.1 26.1 .86 1.00 1.82 1.23 1.17 1.50 1.27 1.36 1.41 1.00 .97 .91 .97 1.06 1.24 1.35 1.27 1.27										Div'd Decl'd per sh B=C		1.35																									
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% 2.6% 2.2% 2.2% 2.0% 2.0%										Cap'l Spending per sh		3.60																									
CAPITAL STRUCTURE as of 9/30/17 Total Debt \$367.3 mill. Due in 5 Yrs \$41.7 mill. LT Debt \$321.0 mill. LT Interest \$21.3 mill. (38% of Cap'l) Leases, Uncapitalized: Annual rentals \$2.5 mill. Ponston Assets-12/16 \$150.9 mill. Oblig. \$180.4 mill. Pfd Stock None. Common Stock 36,679,175 shs. as of 10/1/17 MARKET CAP: \$2.1 billion (Mid Cap)										Book Value per sh		16.80																									
301.4 318.7 361.0 398.9 419.3 466.9 472.1 465.8 458.6 436.1 445 470 470 28.0 26.8 29.5 41.4 42.0 54.1 62.7 61.1 60.5 59.7 62.0 66.0 66.0										Avg Ann'l P/E Ratio		21.0																									
42.6% 37.8% 38.9% 43.2% 41.7% 39.9% 36.3% 38.4% 38.4% 36.8% 35.5% 21.0% 8.5% 6.9% 3.2% 5.8% 2.0% 2.5% -- -- 2.5% 5% 1.5% 2.0%										Relative P/E Ratio		1.30																									
46.9% 46.2% 45.9% 44.3% 45.4% 42.2% 39.8% 39.1% 41.1% 39.4% 40.0% 42.0% 53.1% 53.8% 54.1% 55.7% 54.6% 57.8% 60.2% 60.9% 58.9% 60.6% 60.0% 58.0%										Avg Ann'l Div'd Yield		2.8%																									
569.4 577.0 665.0 677.4 749.1 767.0 818.4 832.6 791.5 815.3 870 935 935 776.4 825.3 866.4 855.0 896.5 917.8 981.5 1003.5 1060.8 1150.9 1200 1250 1250										Income Tax Rate		21.0%																									
6.7% 6.4% 5.9% 7.6% 7.1% 8.3% 8.9% 8.6% 9.0% 8.6% 8.5% 8.5% 9.3% 8.6% 8.2% 11.0% 10.3% 11.9% 12.7% 12.0% 13.0% 12.1% 12.0% 12.0%										AFUDC % to Net Profit		2.5%																									
9.3% 8.6% 8.2% 11.0% 10.3% 11.9% 12.7% 12.0% 13.0% 12.1% 12.0% 12.0% 3.9% 3.1% 3.2% 5.8% 5.3% 6.6% 6.8% 5.7% 6.0% 5.3% 5.0% 5.5%										Long-Term Debt Ratio		43.5%																									
58% 64% 61% 47% 49% 45% 47% 53% 54% 56% 58% 58%										Common Equity Ratio		56.5%																									
BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to 261,002 customers in 75 cities and 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to 23,940 customers in the city of Big Bear Lake and in areas of San Bernardino County. Sold Chaparral City Water of Arizona (6/11). Has 736 employees. BlackRock, Inc. owns 11.7% of out. shares; Vanguard, 9.5%; off. & dir. 1.5%. (4/17 Proxy). Chairman: Lloyd Ross, President & Chief Executive Officer: Robert J. Sprows, Inc. CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.										Total Capital (\$mill)		1100																									
American States Water has solid earnings prospects. We estimate that the water utility earned \$1.85 per share in 2017, thanks, in part, to an unusual gain resulting from the sale of certain assets. Even without this windfall, however, the company would still have likely recorded a 6% increase in its share net. The positive momentum from its core water operations should enable the company's share net to reach \$1.85 once again in 2018.										Net Plant (\$mill)		1400																									
Our earnings forecasts are based upon constructive regulatory treatment. As is the protocol in California, a utility petitions state authorities for rate relief every three years. The company's Golden Gate Water subsidiary filed a general case in July of last year. The application is for the years 2019, 2020, and 2021. A final decision is expected by the end of 2018. The California Public Utility Commission has been reasonable in the past, as it has worked with utilities that have had to spend heavily to upgrade antiquated pipeline systems as well as successfully get customers to reduce consumption because of droughts.										Return on Total Cap'l		9.0%																									
The nonregulated business provides opportunity for growth. No matter how efficiently a utility is run, its profitability is limited to what state regulators allow. Through its ASUS business, which represents about 20% of net income, the company has been involved in taking over the management of water systems of major U.S. military installation. ASUS has already signed several 50-year contracts, and we expect to see more agreements reached in the coming years as privatization in this sector increases.										Return on Shr. Equity		14.0%																									
Timely shares of American States have been doing well, of late. Since our last report three months ago, AWR has increased over 10%. By comparison, the S&P 500 has risen only about 6%. Typically, water stocks have been defensive investments for those seeking income. This pattern has changed, possibly due to the limited amount of shares available in the large-cap sector of the water industry. Indeed, AWR is now trading above our projected 2020-2022 Target Price Range. Also, potential interest rates hikes by the Federal Reserve may now make this group less suitable for conservative accounts.										Return on Com Equity		14.0%																									
James A. Flood January 12, 2018										Retained to Com Eq		6.0%																									
James A. Flood January 12, 2018										All Div'ds to Net Prof		57%																									
Quarterly Revenues (\$mill.) Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 102.0 115.6 138.3 109.9 465.8 2015 100.9 114.6 133.0 110.1 458.6 2016 93.5 112.0 123.8 106.8 436.1 2017 98.8 113.2 124.4 108.6 445 2018 102 118 135 115 470										Company's Financial Strength		A																									
Earnings per Share A Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .28 .39 .54 .36 1.57 2015 .32 .41 .56 .31 1.60 2016 .28 .45 .59 .30 1.62 2017 .34 .62 .57 .32 1.85 2018 .39 .48 .60 .38 1.85										Stock's Price Stability		75																									
Quarterly Dividends Paid B=C Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .2025 .2025 .213 .213 .83 2015 .213 .213 .224 .224 .87 2016 .224 .224 .224 .242 .81 2017 .242 .242 .255 .255 .99 2018										Price Growth Persistence		75																									
Annual Rates of Change (per sh) Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-'22 Revenues 5.5% 3.0% 4.5% "Cash Flow" 7.5% 6.5% 6.0% Earnings 10.0% 9.5% 6.5% Dividends 7.0% 10.5% 7.5% Book Value 5.5% 5.0% 4.0%										Earnings Predictability		85																									
Footnotes: (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. (B) Dividends historically paid in early March, June, September, and December. = Div'd reinvestment plan available. (C) In millions, adjusted for split.										To subscribe call 1-800-VALUELINE																											
© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.																																					

AMERICAN WATER NYSE-AWK										RECENT PRICE	89.08		P/E RATIO	28.1 (Trailing: 30.2 Median: NMF)		RELATIVE P/E RATIO	1.37		DIV YLD	2.0%		VALUE LINE							
TIMELINESS 2 Raised 11/17/17 SAFETY 3 New 7/25/08 TECHNICAL 3 Lowered 1/12/18 BETA .65 (1.00 = Market)		LEGENDS 0.85 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession		High: 23.7 Low: 16.5		23.0 25.8 32.8 39.4 45.1 56.2 16.2 19.4 25.2 31.3 37.0 41.1		61.2 85.2 92.4 48.4 58.9 70.0		Target Price Range 2020 2021 2022		128 96 80 64 48 40 32 24 16 12																	
2020-22 PROJECTIONS Ann'l Total Price Gain Return High 90 (Nil) 3% Low 60 (-35%) -6%										Insider Decisions M A M J J A S O N to Buy 0 0 0 0 0 0 0 0 0 Options 3 0 7 0 0 1 0 0 2 to Sell 2 0 2 0 0 1 0 0 3										Institutional Decisions 1Q2017 2Q2017 3Q2017 to Buy 289 281 252 to Sell 302 291 232 Hd's(00) 160388 158665 160792									
2001 2002 2003 2004 2005 2006 2007^e 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018										© VALUE LINE PUB. LLC 20-22																			
Revenues per sh 23.05 "Cash Flow" per sh 7.50 Earnings per sh ^A 4.15 Div'd Decl'd per sh ^B 2.35 Cap'l Spending per sh 6.85 Book Value per sh ^D 39.45 Common Shs Outst'g ^C 187.50 Avg Ann'l P/E Ratio 18.0 Relative P/E Ratio 1.15 Avg Ann'l Div'd Yield 3.1%										Revenues (\$mil) 4325 Net Profit (\$mil) 780 Income Tax Rate 21.0% AFUDC % to Net Profit 3.5% Long-Term Debt Ratio 54.0% Common Equity Ratio 46.0% Total Capital (\$mil) 16000 Net Plant (\$mil) 18000 Return on Total Cap'l 6.5% Return on Shr. Equity 10.5% Return on Com Equity 10.5% Retained to Com Eq 4.5% All Div'ds to Net Prof 57%																			
CAPITAL STRUCTURE as of 9/30/17 Total Debt \$7462.0 mil. Due in 5 Yrs \$1698.0 mil. LT Debt \$6672.0 mil. LT Interest \$349.0 mil. (55% of Cap'l)										2214.2 2336.9 2440.7 2710.7 2866.2 2876.9 2901.9 3011.3 3159.0 3302.0 3380 3600 d342.3 167.2 209.9 267.8 304.9 374.3 369.3 429.8 476.0 468.0 535 590																			
Leases, Uncapitalized: Annual rentals \$14.0 mil. Pension Assets 12/16 \$1443.0 mil. Pfd Stock \$9.0 mil. Pfd Div'd \$.5 mil Common Stock 178,375,400 shs. as of 10/26/17 MARKET CAP: \$15.9 billion (Large Cap)										50.9% 53.1% 56.9% 58.8% 55.7% 53.9% 52.4% 52.4% 53.7% 52.4% 53.5% 55.0% 49.1% 46.9% 43.1% 43.2% 44.2% 46.1% 47.6% 47.4% 46.2% 47.5% 46.5% 45.0%																			
CURRENT POSITION 2015 2016 9/30/17 (\$MILL) Cash Assets 45.0 75.0 93.0 Accts Receivable 255.0 269.0 312.0 Other 357.0 440.0 455.0 Current Assets 657.0 784.0 860.0 Accts Payable 126.0 154.0 144.0 Debt Due 682.0 1423.0 790.0 Other 725.0 815.0 813.0 Current Liab. 1533.0 2392.0 1747.0										BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in over 47 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86.5% of 2016 revenues.																			
ANNUAL RATES of change (per sh) Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-22 Revenues 3.0% 3.5% 4.5% "Cash Flow" 23.0% 8.5% 6.5% Earnings -- 11.0% 8.5% Dividends -- 9.0% 10.0% Book Value 1.5% 4.0% 5.5%										American Water Works' prospects are bright. In a December investor presentation, management stated once again that the in-house target for annual growth over the next five-year period for both earnings and dividends is at the high end of the 7% to 10% range. This is well above the projected industry average. Acquisitions and cost controls will likely remain the twin pillars of the utility's operating strategy. The water industry in the United States is very fragmented and inefficient. As a result, there are many small and midsize water authorities that do not have the funds required to make the necessary upgrades to their aging water facilities. Hence, American Water has a continual pipeline of purchases in the works. The company is able to integrate these new additions into its asset base while achieving substantial cost savings. Moreover, regulators are happy (more below) when utilities can provide better service at a lower price. Regulators will probably have a major say in the company's future performance. As the utility continues to expand, its relationship with different state water authorities should become even more important as it will have to file more rate cases. On the positive side of the ledger, American Water's internal (non-GAAP) operating expense margin continues to decline. Indeed, the ratio has decreased from 44% in 2010 to about 34% this year. The goal is 32.5% by 2020-2022. In any case, being able to quantify savings keeps a utility in the good graces of those ruling on rate filings. The capital budget has been raised substantially. Even though the company is already in the midst of a major construction program, management just increased the estimated outlays by about \$1 billion to bring the new expected five-year total to somewhere between \$8.0 billion and \$8.6 billion. American Water's finances are average, and probably will remain so for the next several years. These timely shares will most likely not interest long-term investors. AWK has outperformed the broader market averages, of late. Indeed, the stock recently traded above our projected 2020-2022 Target Price Range.																			
Cal-endar QUARTERLY REVENUES (\$ mil.) Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 679.0 754.8 845.1 731.4 3011.3 2015 698.0 782.0 896.0 783.0 3159.0 2016 743.0 827.0 930.0 802.0 3302.0 2017 756.0 844.0 936.0 844 3380 2018 770 895 1040 895 3600										Cal-endar EARNINGS PER SHARE^A Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .39 .62 .86 .52 2.39 2015 .44 .68 .96 .56 2.64 2016 .46 .77 .83 .57 2.62 2017 .52 .73 1.13 .62 3.00 2018 .58 .84 1.19 .69 3.30																			
Cal-endar QUARTERLY DIVIDENDS PAID^B Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .28 .31 .31 .31 1.21 2015 .31 .34 .34 .34 1.33 2016 .34 .375 .375 .375 1.47 2017 .375 .415 .415 .415 1.62 2018										2014. Next earnings report due mid-February. Quarterly earnings do not sum in '16 due to rounding. (B) Dividends paid in March, June, September, and December. ^B Div. reinvest.																			
(A) Diluted earnings. Excludes nonrecurring losses: '08, \$4.62; '09, \$2.63; '11, \$0.07. Discontinued operations: '06, (\$0.04); '11, \$0.03; '12, (\$0.10); '13, (\$0.01). GAAP used as of										(C) In millions. (D) Includes intangibles. On 9/30/17: \$1.373 billion, \$7.70/share. (E) Pro forma numbers for '06 & '07.																			
Company's Financial Strength B+ Stock's Price Stability 100 Price Growth Persistence 85 Earnings Predictability 90										To subscribe call 1-800-VALUELINE																			

January 12, 2018

James A. Flood

© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

AQUA AMERICA NYSE-WTR			RECENT PRICE	PIE RATIO		RELATIVE PIE RATIO		DIVD YLD		VALUE LINE				
TIMELINESS 2 Raised 11/17/17 SAFETY 2 Raised 4/20/12 TECHNICAL 3 Lowered 1/5/18 BETA .75 (1.00 = Market)			38.65	27.4	Trailing: 29.1 Median: 22.0	1.34	2.2%	Target Price Range 2020 2021 2022						
2020-22 PROJECTIONS High Price 45 (+15%) Low Price 35 (-10%) Ann'l Total Return 6% High 45 (+15%) Low 35 (-10%)			23.8 16.1	21.3 15.1	17.6 9.8	17.2 12.3	18.4 13.2	19.0 15.4	21.5 16.8	28.1 20.6	28.2 22.4	31.1 24.4	35.8 28.0	39.6 29.4
Insider Decisions M A M J J A S O N to Buy 0 0 0 0 0 0 0 0 0 to Sell 7 7 0 1 7 0 1 8 0 Options 0 0 0 2 0 0 1 0 1														
Institutional Decisions 1Q2017 2Q2017 3Q2017 to Buy 179 172 187 to Sell 180 165 120 Net Buy 103594 104564 105796														
MARKET CAP: \$6.9 billion (Large Cap) CURRENT POSITION (\$MILL) Cash Assets 3.2 Receivables 99.1 Inventory (AvgCst) 12.4 Other 13.7 Current Assets 128.4 Accts Payable 56.5 Debt Due 52.3 Other 84.4 Current Liab. 193.2			2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 Revenues per sh 2.16 2.28 2.38 2.78 3.08 3.23 3.61 3.71 3.93 4.21 4.10 4.32 4.32 4.37 4.61 4.62 4.50 Cash Flow per sh .69 .76 .77 .87 .97 1.01 1.10 1.14 1.29 1.42 1.45 1.51 1.82 1.89 1.87 2.07 2.15 Earnings per sh .41 .43 .46 .51 .57 .58 .57 .58 .62 .72 .83 .87 1.16 1.20 1.14 1.32 1.36 Div'd Decl'd per sh .24 .26 .28 .29 .32 .35 .38 .41 .44 .47 .50 .54 .58 .63 .69 .74 .79 Cap'l Spending per sh .87 .96 1.06 1.23 1.47 1.64 1.43 1.58 1.66 1.89 1.90 1.98 1.73 1.84 2.07 2.16 2.55 Book Value per sh 3.32 3.49 4.27 4.71 5.04 5.57 5.85 6.26 6.50 6.81 7.21 7.90 8.63 9.27 9.78 10.43 11.10 Common Shs Outst'g 142.47 141.49 154.31 158.97 161.21 165.41 166.75 169.21 170.61 172.46 173.60 175.43 177.93 178.59 176.54 177.39 178.00 Avg Ann'l P/E Ratio 23.6 23.6 24.5 25.1 31.8 34.7 32.0 24.9 23.1 21.1 21.3 21.9 21.2 20.8 23.5 23.9 24.5 Relative P/E Ratio 1.21 1.29 1.40 1.33 1.69 1.87 1.70 1.50 1.54 1.34 1.34 1.39 1.19 1.09 1.18 1.26 1.20 Avg Ann'l Div'd Yield 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% 2.5% 2.6% 2.3% 2.4%											
Pension Assets-12/16 \$242.4 mil. Pfd Stock None Common Stock 177,690,598 shares as of 10/20/17			Revenues (\$mill) 602.5 627.0 670.5 728.1 712.0 757.8 768.6 779.9 814.2 819.9 800 840 Net Profit (\$mill) 95.0 97.9 104.4 124.0 144.8 153.1 205.0 213.9 201.8 234.2 245 260 Income Tax Rate 38.9% 39.7% 39.4% 39.2% 32.9% 39.0% 10.0% 10.5% 6.9% 8.2% 9.0% 9.0% AFUDC % to Net Profit -- -- -- -- -- -- 1.1% 2.4% 3.1% 3.8% 3.5% 3.0% Long-Term Debt Ratio 55.4% 54.1% 55.6% 56.6% 52.7% 52.7% 48.9% 48.5% 50.3% 48.4% 47.0% 49.0% Common Equity Ratio 44.6% 45.9% 44.4% 43.4% 47.3% 47.3% 51.1% 51.5% 49.7% 51.6% 53.0% 51.0% Total Capital (\$mill) 2191.4 2306.6 2495.5 2706.2 2646.8 2929.7 3003.6 3216.0 3469.5 3587.7 3735 4100 Net Plant (\$mill) 2792.8 2997.4 3227.3 3469.3 3612.9 3936.2 4167.3 4402.0 4888.9 5001.6 5080 5275 Return on Total Cap'l 5.9% 5.7% 5.6% 5.9% 6.9% 6.6% 8.0% 7.8% 6.9% 7.6% 7.5% 7.5% Return on Shr. Equity 9.7% 9.3% 9.4% 10.6% 11.6% 11.0% 13.4% 12.9% 11.7% 12.7% 12.5% 12.5% Return on Com Equity 9.7% 9.3% 9.4% 10.6% 11.6% 11.0% 13.4% 12.9% 11.7% 12.7% 12.5% 12.5% Retained to Com Eq 67% 70% 72% 3.7% 4.6% 4.3% 6.7% 6.1% 4.7% 5.6% 5.5% 5.0% All Div'ds to Net Prof 67% 70% 72% 60% 60% 61% 50% 52% 59% 56% 58% 59%											
MARKET CAP: \$6.9 billion (Large Cap) CURRENT POSITION (\$MILL) Cash Assets 3.2 Receivables 99.1 Inventory (AvgCst) 12.4 Other 13.7 Current Assets 128.4 Accts Payable 56.5 Debt Due 52.3 Other 84.4 Current Liab. 193.2			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. Has 1,551 employees. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues '2016: residential, 59%; commercial, 16%; industrial, wastewater & other, 25%. Off. & dir. own less than 1% of the common stock; Vanguard Group, 8.9%; Blackrock, Inc. 8.1%; State Street Capital, 6.0% (3/17 Proxy). President & Chief Executive Officer: Christopher Franklin. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Tel: 610-525-1400. Internet: www.aquaamerica.com.											
ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 of change (per sh) Revenues 4.0% 2.0% 5.0% Cash Flow 7.5% 7.0% 6.0% Earnings 8.5% 11.0% 7.0% Dividends 8.0% 8.0% 9.0% Book Value 7.0% 7.5% 6.5%			Our earnings estimates for Aqua America remain unchanged. But we have lowered our revenue forecast for both last year's fourth quarter and 2018 as water sales have been declining. On the positive side, the water utility's operating expenses have been decreasing at a higher rate thanks to lower power and chemical costs. Indeed, we think Aqua's 2017 share net came in at \$1.36, versus 2016's tough \$1.32 comparison. Rate relief granted by several states over the past 12 months will be in effect all of this year. This, plus expected new hikes in Virginia and Indiana, should enable Aqua's share earning to climb a healthy 7%, to \$1.45. Acquisitions are being made at a modest pace. Due to the fragmentation in the market (there are over 100,000 separate water districts in the U.S.), large-cap water utilities such as Aqua are continuously buying small water entities. Also, most of these authorities do not have the funds required to replace and upgrade their aging network of pipes and waste systems. Not only do the bigger water entities have the funds available for the needed capital outlays, they are also able to realize significant cost saving because the industry is rife with redundancies. The company's acquisitions made through September of last year combined with organic growth, led to only a 0.8% increase in the customer base. Management has targeted annual growth to be approximately 1.5%-2.0%, so we expect the pace to possible accelerate here. Aqua has a healthy balance sheet. Of the nine members in this group, only two merit an "A" Financial Strength rating. This leaves the company with the capacity to borrow to buy more water assets. In addition, Aqua's policy of hardly issuing any new equity is a real positive. With the stock near its all-time high, a new equity offering would probably be well received, as institutional demand for large-cap water utilities stock remains strong. These shares are timely. Also, even though WTR's long-term total return potential isn't great, it is more attractive than most other mid- and large-cap stocks in this group. So, investors that must own a water utility equity may find WTR of interest.											
QUARTERLY REVENUES (\$ mil.) Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 182.7 195.3 210.5 191.4 779.9 2015 190.3 205.8 221.0 197.1 814.2 2016 192.6 203.9 226.6 196.8 819.9 2017 187.8 203.4 215.0 193.8 800 2018 195 215 225 205 840			James A. Flood January 12, 2018											
EARNINGS PER SHARE Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .24 .31 .38 .27 1.20 2015 .27 .32 .38 .17 1.14 2016 .29 .34 .41 .28 1.32 2017 .28 .34 .43 .31 1.36 2018 .30 .37 .46 .32 1.45			QUARTERLY DIVIDENDS PAID Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .152 .152 .165 .165 .63 2015 .165 .165 .178 .178 .69 2016 .178 .178 .1913 .1913 .74 2017 .1913 .1913 .2047 .2047 .79 2018											
Footnotes: (A) Diluted eqs. Excl. nonrec. gains: '01, 2%; '02, 4%; '03, 3%; '12, 18%. Excl. gain from disc. operations: '12, 7%; '13, 9%; '14, 11%. 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 A Stock's Price Stability 95 Price Growth Persistence 65 Earnings Predictability 90											
© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.														

To subscribe call 1-800-VALUELINE

CALIFORNIA WATER NYSE-CWT										RECENT PRICE	P/E RATIO				RELATIVE P/E RATIO		DIVD YLD	VALUE LINE																
										44.70	30.0 (Trailing: 31.5 Median: 20.0)				1.46		1.6%																	
										High: 22.9	22.7	23.3	24.1	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	Target Price Range												
										Low: 16.4	17.1	13.8	16.7	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	2020	2021	2022										
TIMELINESS 2 Raised 9/17 SAFETY 3 Lowered 7/27/17 TECHNICAL 2 Raised 12/22/17 BETA .80 (1.00 = Market) 2020-22 PROJECTIONS <table border="1"> <tr> <th>Price</th> <th>Gain</th> <th>Return</th> </tr> <tr> <td>High 50</td> <td>(+10%)</td> <td>5%</td> </tr> <tr> <td>Low 35</td> <td>(-20%)</td> <td>-4%</td> </tr> </table>										Price	Gain	Return	High 50	(+10%)	5%	Low 35	(-20%)	-4%											Insider Decisions M A M J J A S O N to Buy 1 1 1 1 1 1 1 1 Options 22 0 0 0 0 0 0 1 to Sell 1 0 1 1 0 0 1 0		Institutional Decisions 1Q2017 2Q2017 3Q2017 to Buy 97 88 80 to Sell 83 77 71 Hld's (%) 38866 38422 38931		% TOT. RETURN 12/17 TTS STOCK INDEX 1 yr. 36.4 15.8 3 yr. 98.1 30.1 5 yr. 181.9 92.5	
Price	Gain	Return																																
High 50	(+10%)	5%																																
Low 35	(-20%)	-4%																																
MARKET CAP: \$2.1 billion (Mid Cap) CURRENT POSITION 2015 2016 9/30/17 (\$MILL.) Cash Assets 8.8 25.5 28.3 Other 118.8 116.6 152.2 Current Assets 127.6 142.1 180.5 Accts Payable 68.4 77.8 89.4 Debt Due 40.2 123.3 231.1 Other 41.9 48.1 59.9 Current Liab. 148.5 250.2 380.4										VALUATION METRICS 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 Revenues per sh 8.13 8.67 8.18 8.59 8.72 8.10 8.88 9.90 10.82 11.05 12.00 13.34 12.23 12.50 12.29 12.70 13.70 14.10 "Cash Flow" per sh 1.10 1.32 1.26 1.42 1.52 1.36 1.56 1.86 1.93 1.93 2.07 2.32 2.21 2.47 2.22 2.34 2.70 2.90 Earnings per sh A .47 .63 .61 .73 .74 .67 .75 .95 .98 .91 .86 1.02 1.02 1.19 .94 1.01 1.40 1.55 Div'd Decl'd per sh B .56 .56 .56 .57 .57 .57 .58 .59 .59 .60 .62 .63 .64 .65 .67 .69 .72 .75 Cap'l Spending per sh 2.04 2.91 2.19 1.87 2.01 2.14 1.84 2.41 2.66 2.97 2.83 3.04 2.58 2.76 3.69 4.77 3.85 3.65 Book Value per sh C 6.48 6.56 7.22 7.83 7.90 9.07 9.25 9.72 10.13 10.45 10.76 11.28 12.54 13.11 13.41 13.75 14.30 14.75 Common Shs Outst'g D -30.36 30.36 33.66 36.73 36.78 41.31 41.33 41.45 41.53 41.67 41.82 41.98 47.74 47.81 47.88 47.97 48.25 48.50 Avg Ann'l P/E Ratio 29.1 19.8 22.1 20.1 24.9 29.2 26.1 19.8 19.7 20.3 21.3 17.9 20.1 19.7 24.8 29.6 26.9 Relative P/E Ratio 1.39 1.08 1.26 1.06 1.33 1.58 1.39 1.19 1.31 1.29 1.34 1.14 1.13 1.04 1.25 1.56 1.31 Avg Ann'l Div'd Yield 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% 2.8% 2.9% 2.3% 1.9% Revenues (\$mil) E 367.1 410.3 449.4 460.4 501.8 580.0 584.1 597.5 588.3 609.4 660 685 Net Profit (\$mil) 31.2 39.8 40.6 37.7 36.1 42.6 47.3 56.7 45.0 48.7 68.0 75.0 Income Tax Rate 39.9% 37.7% 40.3% 39.5% 40.5% 37.5% 30.3% 33.0% 36.0% 35.5% 35.0% 21.0% AFUDC % to Net Profit 8.3% 8.6% 7.6% 4.2% 7.6% 8.0% 4.3% 4.3% 4.3% 6.1% 5.0% 5.0% Long-Term Debt Ratio 42.9% 41.6% 47.1% 52.4% 51.7% 47.8% 41.6% 40.1% 44.4% 44.6% 43.0% 44.5% Common Equity Ratio 56.6% 58.4% 52.9% 47.6% 48.3% 52.2% 58.4% 59.9% 55.6% 55.4% 57.0% 55.5% Total Capital (\$mil) 674.9 690.4 794.9 914.7 931.5 908.2 1024.9 1045.9 1154.4 1191.2 1215 1290 Net Plant (\$mil) 1010.2 1112.4 1198.1 1294.3 1381.1 1457.1 1515.8 1590.4 1701.8 1859.3 1900 1930 Return on Total Cap'l 5.9% 7.1% 6.5% 5.5% 5.5% 6.3% 6.0% 6.3% 5.2% 5.5% 6.5% 7.0% Return on Shr. Equity 8.1% 9.9% 9.6% 8.6% 8.0% 9.0% 7.9% 9.1% 7.0% 7.4% 10.0% 10.5% Return on Com Equity 8.1% 9.9% 9.6% 8.6% 8.0% 9.0% 7.9% 9.1% 7.0% 7.4% 10.0% 10.5% Retained to Com Eq 1.8% 3.8% 3.8% 3.0% 2.3% 3.4% 3.4% 4.1% 2.0% 2.4% 4.5% 5.5% All Div'ds to Net Prof 77% 61% 60% 66% 71% 62% 56% 55% 71% 68% 51% 49%																								
Pension Assets-12/16 \$376.5 mill. Oblig. \$564.8 mill. Pfd Stock None Common Stock 48,015,000 shs.										BUSINESS: California Water Service Group provides regulated and nonregulated water service to 482,400 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '16: residential, 72%; business, 20%; industrial, 4%; public authorities, 3%; other 1% Off. and dir. own 1% of common stock (4/17 proxy). Has 1,163 employees. Pres. and CEO: Martin A. Kropelnicki Inc.; DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.cawatergroup.com.																								
ANNUAL RATES Past 10 Yrs. Past Est'd '14-'16 of change (per sh) 5 Yrs. to '20-'22 Revenues 4.0% 2.0% 3.0% "Cash Flow" 5.0% 3.5% 5.5% Earnings 4.0% 3.0% 10.0% Dividends 1.5% 2.0% 7.5% Book Value 5.0% 5.0% 3.5%										California Water Service Group stock is trading around recently established all-time highs. The regulated water utility wrapped up 2017 by surging through the \$45-per-share price threshold on more than one occasion, with shares rising 33% on the year. Since our previous review, the equity is up more than 10% in value. Indeed, the investment community has handsomely rewarded the company for delivering consistent top- and bottom-line growth, quarter to quarter. However, fourth-quarter share-net may slip by two cents. For 2018, our ranking system suggests another strong performance may be in store, as CWT shares are poised to outpace the year-ahead broader market averages (Timeliness: 2). We think the positives will continue to outweigh the negatives here. California Water Service is enjoying the fruits of recent rate increases by the California regulatory authority. In fact, the decision has added more than \$30 million in incremental revenues so far. In addition, favorable changes to the corporate tax rate should help lift profits this year. To address the latter, the company's operating expenses are still on the rise, despite some progress in the second quarter. Water costs (only investment upgrades can be recouped) from greater customer usage, as well as periodic increases in wholesale supplier rates, are pushing expenses higher. Overall, we are adding \$10 million and \$0.10 to our 2018 revenue and earnings estimates, to \$685 million and \$1.55 a share, respectively. Aggressive infrastructure spending remains on tap through next decade. As previously noted, California has close to \$500 million left on its investment budget, and has earmarked the funds for upgrades to its aging infrastructure and water systems. On top of that, these improvements are likely to be accompanied by bolt-on acquisitions. This issue is best suited for short-term accounts. On the other hand, CWT shares have been on a multiyear price ascent and, as a result, total return potential 3 to 5 years out is unappealing. Thus, we think investors with a longer-term holding period can find more-attractive options elsewhere, at this time.																								
QUARTERLY REVENUES (\$ mil) ^E Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 110.5 158.4 191.2 137.4 597.5 2015 122.0 144.4 183.5 138.4 588.3 2016 121.7 152.4 184.3 151.0 609.4 2017 122.0 171.1 211.7 155.2 660 2018 130 175 215 165 685										EARNINGS PER SHARE ^A Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 d.11 .36 .70 .24 1.19 2015 .03 .21 .52 .18 .94 2016 d.02 .24 .48 .31 1.01 2017 .02 .39 .70 .29 1.40 2018 .08 .42 .72 .33 1.55										QUARTERLY DIVIDENDS PAID ^B Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .1625 .1625 .1625 .1625 .65 2015 .1675 .1675 .1675 .1675 .67 2016 .1725 .1725 .1725 .1725 .69 2017 .18 .18 .18 .18 .72 2018														
(A) Basic EPS. Excl. nonrecurring gain (loss): '01, 2¢; '02, 4¢; '11, 4¢. Next earnings report due late February. (B) Dividends historically paid in late Feb., May, Aug., and Nov. = Div'd reinvestment plan available. (C) Incl. intangible assets. In '16 : \$21.9 mill., \$0.46/sh. (D) In millions, adjusted for splits. (E) Excludes non-reg. rev.										Company's Financial Strength B++ Stock's Price Stability 80 Price Growth Persistence 35 Earnings Predictability 65																								

MIDDLESEX WATER NDQ-MSEX										RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO		DIVD YLD	VALUE LINE																																																																																																																																																																																																																											
										39.09	25.9 (Trading: 31.3 Median: 20.0)		1.26		2.3%																																																																																																																																																																																																																												
TIMELINESS	4	Lowered 7/7/17	High: 20.5	20.2	19.8	17.9	19.3	19.4	19.6	22.5	23.7	28.0	44.5	46.7	Target Price Range																																																																																																																																																																																																																												
SAFETY	2	New 10/21/11	Low: 16.5	16.9	12.0	11.6	14.7	16.5	17.5	18.6	19.1	21.2	25.0	32.2	2020	2021	2022																																																																																																																																																																																																																										
TECHNICAL	1	Raised 1/12/18	LEGENDS 1.20 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																																																																																																																																																																																																																																								
BETA	.80	(1.00 = Market)	2020-22 PROJECTIONS																																																																																																																																																																																																																																								
			High	50	Gain	+30%	Ann'l Total	9%																																																																																																																																																																																																																																			
			Low	35	Return	-10%	Nil	Nil																																																																																																																																																																																																																																			
Insider Decisions			<table border="1"> <tr><th></th><th>M</th><th>A</th><th>M</th><th>J</th><th>J</th><th>A</th><th>S</th><th>O</th><th>N</th></tr> <tr><td>To Buy</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Options</td><td>0</td><td>7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>To Sell</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr> </table>											M	A	M	J	J	A	S	O	N	To Buy	0	0	0	0	0	0	0	0	0	Options	0	7	0	0	0	0	0	0	0	To Sell	1	0	0	0	0	0	0	0	1																																																																																																																																																																																							
	M	A	M	J	J	A	S	O	N																																																																																																																																																																																																																																		
To Buy	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																		
Options	0	7	0	0	0	0	0	0	0																																																																																																																																																																																																																																		
To Sell	1	0	0	0	0	0	0	0	1																																																																																																																																																																																																																																		
Institutional Decisions			<table border="1"> <tr><th></th><th>1Q2017</th><th>2Q2017</th><th>3Q2017</th></tr> <tr><td>To Buy</td><td>45</td><td>60</td><td>46</td></tr> <tr><td>To Sell</td><td>51</td><td>44</td><td>41</td></tr> <tr><td>Hds/1000</td><td>9400</td><td>9201</td><td>9500</td></tr> </table>											1Q2017	2Q2017	3Q2017	To Buy	45	60	46	To Sell	51	44	41	Hds/1000	9400	9201	9500																																																																																																																																																																																																															
	1Q2017	2Q2017	3Q2017																																																																																																																																																																																																																																								
To Buy	45	60	46																																																																																																																																																																																																																																								
To Sell	51	44	41																																																																																																																																																																																																																																								
Hds/1000	9400	9201	9500																																																																																																																																																																																																																																								
			<table border="1"> <tr><th></th><th>12</th><th>8</th><th>4</th></tr> <tr><td>Percent shares traded</td><td>12</td><td>8</td><td>4</td></tr> </table>											12	8	4	Percent shares traded	12	8	4																																																																																																																																																																																																																							
	12	8	4																																																																																																																																																																																																																																								
Percent shares traded	12	8	4																																																																																																																																																																																																																																								
			<table border="1"> <tr><th></th><th>1 yr.</th><th>3 yr.</th><th>5 yr.</th></tr> <tr><td>% TOT. RETURN 12/17</td><td>4.9</td><td>67.5</td><td>137.8</td></tr> <tr><td>THIS STOCK</td><td>-4.9</td><td>67.5</td><td>137.8</td></tr> <tr><td>VL ARTH. INDEX</td><td>15.8</td><td>30.1</td><td>92.5</td></tr> </table>											1 yr.	3 yr.	5 yr.	% TOT. RETURN 12/17	4.9	67.5	137.8	THIS STOCK	-4.9	67.5	137.8	VL ARTH. INDEX	15.8	30.1	92.5																																																																																																																																																																																																															
	1 yr.	3 yr.	5 yr.																																																																																																																																																																																																																																								
% TOT. RETURN 12/17	4.9	67.5	137.8																																																																																																																																																																																																																																								
THIS STOCK	-4.9	67.5	137.8																																																																																																																																																																																																																																								
VL ARTH. INDEX	15.8	30.1	92.5																																																																																																																																																																																																																																								
			<table border="1"> <tr><th></th><th>2001</th><th>2002</th><th>2003</th><th>2004</th><th>2005</th><th>2006</th><th>2007</th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>20-22</th></tr> <tr><td>5.87</td><td>5.98</td><td>6.12</td><td>6.25</td><td>6.44</td><td>6.16</td><td>6.50</td><td>6.79</td><td>6.75</td><td>6.60</td><td>6.50</td><td>6.98</td><td>7.19</td><td>7.26</td><td>7.77</td><td>8.16</td><td>8.10</td><td>8.55</td><td>Revenues per sh</td><td>9.40</td></tr> <tr><td>1.18</td><td>1.20</td><td>1.15</td><td>1.28</td><td>1.33</td><td>1.33</td><td>1.49</td><td>1.53</td><td>1.40</td><td>1.55</td><td>1.46</td><td>1.56</td><td>1.72</td><td>1.84</td><td>1.97</td><td>2.17</td><td>2.25</td><td>2.55</td><td>"Cash Flow" per sh</td><td>3.15</td></tr> <tr><td>.66</td><td>.73</td><td>.61</td><td>.73</td><td>.71</td><td>.82</td><td>.87</td><td>.89</td><td>.72</td><td>.96</td><td>.84</td><td>.90</td><td>1.03</td><td>1.13</td><td>1.22</td><td>1.38</td><td>1.40</td><td>1.65</td><td>Earnings per sh A</td><td>2.10</td></tr> <tr><td>.62</td><td>.63</td><td>.65</td><td>.66</td><td>.67</td><td>.68</td><td>.69</td><td>.70</td><td>.71</td><td>.72</td><td>.73</td><td>.74</td><td>.75</td><td>.76</td><td>.78</td><td>.81</td><td>.86</td><td>.91</td><td>Div'd Decl'd per sh B=C</td><td>1.06</td></tr> <tr><td>1.25</td><td>1.59</td><td>1.87</td><td>2.54</td><td>2.18</td><td>2.31</td><td>1.66</td><td>2.12</td><td>1.49</td><td>1.90</td><td>1.50</td><td>1.36</td><td>1.26</td><td>1.40</td><td>1.59</td><td>2.91</td><td>1.80</td><td>1.90</td><td>Cap'l Spending per sh</td><td>2.05</td></tr> <tr><td>7.11</td><td>7.39</td><td>7.60</td><td>8.02</td><td>8.26</td><td>9.52</td><td>10.05</td><td>10.03</td><td>10.33</td><td>11.13</td><td>11.27</td><td>11.48</td><td>11.82</td><td>12.24</td><td>12.74</td><td>13.40</td><td>13.95</td><td>14.65</td><td>Book Value per sh</td><td>16.75</td></tr> <tr><td>10.17</td><td>10.36</td><td>10.48</td><td>11.36</td><td>11.58</td><td>13.17</td><td>13.25</td><td>13.40</td><td>13.52</td><td>15.57</td><td>15.70</td><td>15.82</td><td>15.96</td><td>16.12</td><td>16.23</td><td>16.30</td><td>16.50</td><td>16.75</td><td>Common Shs OutsPg C</td><td>17.00</td></tr> <tr><td>24.6</td><td>23.5</td><td>30.0</td><td>26.4</td><td>27.4</td><td>22.7</td><td>21.6</td><td>19.8</td><td>21.0</td><td>17.8</td><td>21.7</td><td>20.8</td><td>19.7</td><td>18.5</td><td>19.1</td><td>25.6</td><td>28.0</td><td></td><td>Avg Ann'l P/E Ratio</td><td>21.0</td></tr> <tr><td>1.26</td><td>1.28</td><td>1.71</td><td>1.39</td><td>1.46</td><td>1.23</td><td>1.15</td><td>1.19</td><td>1.40</td><td>1.13</td><td>1.36</td><td>1.32</td><td>1.11</td><td>.97</td><td>.96</td><td>1.35</td><td>1.37</td><td></td><td>Relative P/E Ratio</td><td>1.30</td></tr> <tr><td>3.8%</td><td>3.7%</td><td>3.5%</td><td>3.4%</td><td>3.5%</td><td>3.7%</td><td>3.7%</td><td>4.0%</td><td>4.7%</td><td>4.2%</td><td>4.0%</td><td>4.0%</td><td>3.7%</td><td>3.3%</td><td>3.3%</td><td>2.3%</td><td>2.2%</td><td></td><td>Avg Ann'l Div'd Yield</td><td>2.5%</td></tr> </table>											2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22	5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.10	8.55	Revenues per sh	9.40	1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.25	2.55	"Cash Flow" per sh	3.15	.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.40	1.65	Earnings per sh A	2.10	.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	Div'd Decl'd per sh B=C	1.06	1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	1.80	1.90	Cap'l Spending per sh	2.05	7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	13.95	14.65	Book Value per sh	16.75	10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.50	16.75	Common Shs OutsPg C	17.00	24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.0		Avg Ann'l P/E Ratio	21.0	1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.35	1.37		Relative P/E Ratio	1.30	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%	3.3%	3.3%	2.3%	2.2%		Avg Ann'l Div'd Yield	2.5%			
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22																																																																																																																																																																																																																								
5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.10	8.55	Revenues per sh	9.40																																																																																																																																																																																																																								
1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.25	2.55	"Cash Flow" per sh	3.15																																																																																																																																																																																																																								
.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.40	1.65	Earnings per sh A	2.10																																																																																																																																																																																																																								
.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	Div'd Decl'd per sh B=C	1.06																																																																																																																																																																																																																								
1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	1.80	1.90	Cap'l Spending per sh	2.05																																																																																																																																																																																																																								
7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	13.95	14.65	Book Value per sh	16.75																																																																																																																																																																																																																								
10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.50	16.75	Common Shs OutsPg C	17.00																																																																																																																																																																																																																								
24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.0		Avg Ann'l P/E Ratio	21.0																																																																																																																																																																																																																								
1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.35	1.37		Relative P/E Ratio	1.30																																																																																																																																																																																																																								
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%	3.3%	3.3%	2.3%	2.2%		Avg Ann'l Div'd Yield	2.5%																																																																																																																																																																																																																								
CAPITAL STRUCTURE as of 9/30/17			<table border="1"> <tr><th></th><th>2001</th><th>2002</th><th>2003</th><th>2004</th><th>2005</th><th>2006</th><th>2007</th><th>2008</th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>20-22</th></tr> <tr><td>86.1</td><td>91.0</td><td>91.2</td><td>102.7</td><td>102.1</td><td>110.4</td><td>114.8</td><td>117.1</td><td>126.0</td><td>132.9</td><td>134</td><td>143</td><td>Revenues (\$mill)</td><td>160</td></tr> <tr><td>11.8</td><td>12.2</td><td>10.0</td><td>14.3</td><td>13.4</td><td>14.4</td><td>16.6</td><td>18.4</td><td>20.0</td><td>22.7</td><td>23.0</td><td>27.5</td><td>Net Profit (\$mill)</td><td>35.5</td></tr> <tr><td>32.6%</td><td>33.2%</td><td>34.1%</td><td>32.1%</td><td>32.7%</td><td>33.9%</td><td>34.1%</td><td>35.0%</td><td>34.5%</td><td>34.0%</td><td>32.0%</td><td>21.0%</td><td>Income Tax Rate</td><td>21.0%</td></tr> <tr><td>--</td><td>--</td><td>--</td><td>6.8%</td><td>6.1%</td><td>3.4%</td><td>1.9%</td><td>1.7%</td><td>1.9%</td><td>2.0%</td><td>2.0%</td><td>2.0%</td><td>AFUDC % to Net Profit</td><td>2.5%</td></tr> <tr><td>49.0%</td><td>45.6%</td><td>46.6%</td><td>43.1%</td><td>42.3%</td><td>41.5%</td><td>40.4%</td><td>40.5%</td><td>39.4%</td><td>37.9%</td><td>37.5%</td><td>37.0%</td><td>Long-Term Debt Ratio</td><td>37.0%</td></tr> <tr><td>49.6%</td><td>51.8%</td><td>52.1%</td><td>55.8%</td><td>56.6%</td><td>57.4%</td><td>58.7%</td><td>58.8%</td><td>59.8%</td><td>61.5%</td><td>62.0%</td><td>62.5%</td><td>Common Equity Ratio</td><td>62.5%</td></tr> <tr><td>268.8</td><td>259.4</td><td>267.9</td><td>310.5</td><td>312.5</td><td>316.5</td><td>321.4</td><td>335.8</td><td>345.4</td><td>355.4</td><td>370</td><td>390</td><td>Total Capital (\$mill)</td><td>460</td></tr> <tr><td>333.9</td><td>366.3</td><td>376.5</td><td>405.9</td><td>422.2</td><td>435.2</td><td>446.5</td><td>465.4</td><td>481.9</td><td>517.8</td><td>525</td><td>535</td><td>Net Plant (\$mill)</td><td>575</td></tr> <tr><td>5.6%</td><td>5.8%</td><td>5.0%</td><td>5.7%</td><td>5.2%</td><td>5.4%</td><td>5.9%</td><td>6.3%</td><td>6.6%</td><td>7.1%</td><td>7.0%</td><td>7.5%</td><td>Return on Total Cap'l</td><td>8.5%</td></tr> <tr><td>8.6%</td><td>8.6%</td><td>7.0%</td><td>8.1%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.2%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>Return on Shr. Equity</td><td>12.5%</td></tr> <tr><td>8.7%</td><td>8.9%</td><td>7.0%</td><td>8.2%</td><td>7.5%</td><td>7.8%</td><td>8.7%</td><td>9.3%</td><td>9.6%</td><td>10.3%</td><td>10.0%</td><td>11.5%</td><td>Return on Com Equity</td><td>12.5%</td></tr> <tr><td>1.8%</td><td>2.0%</td><td>.1%</td><td>2.1%</td><td>1.0%</td><td>1.4%</td><td>2.4%</td><td>3.1%</td><td>3.5%</td><td>4.3%</td><td>4.0%</td><td>5.0%</td><td>Retained to Com Eq</td><td>6.0%</td></tr> <tr><td>79%</td><td>78%</td><td>98%</td><td>75%</td><td>87%</td><td>83%</td><td>73%</td><td>67%</td><td>63%</td><td>58%</td><td>61%</td><td>55%</td><td>All Div'ds to Net Prof</td><td>50%</td></tr> </table>											2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22	86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	134	143	Revenues (\$mill)	160	11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	23.0	27.5	Net Profit (\$mill)	35.5	32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.0%	21.0%	Income Tax Rate	21.0%	--	--	--	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.0%	2.0%	2.0%	AFUDC % to Net Profit	2.5%	49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.0%	Long-Term Debt Ratio	37.0%	49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	62.0%	62.5%	Common Equity Ratio	62.5%	268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370	390	Total Capital (\$mill)	460	333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	525	535	Net Plant (\$mill)	575	5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	7.0%	7.5%	Return on Total Cap'l	8.5%	8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	10.0%	11.5%	Return on Shr. Equity	12.5%	8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	10.0%	11.5%	Return on Com Equity	12.5%	1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	4.0%	5.0%	Retained to Com Eq	6.0%	79%	78%	98%	75%	87%	83%	73%	67%	63%	58%	61%	55%	All Div'ds to Net Prof	50%																					
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	20-22																																																																																																																																																																																																																								
86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	134	143	Revenues (\$mill)	160																																																																																																																																																																																																																														
11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	23.0	27.5	Net Profit (\$mill)	35.5																																																																																																																																																																																																																														
32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.0%	21.0%	Income Tax Rate	21.0%																																																																																																																																																																																																																														
--	--	--	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.0%	2.0%	2.0%	AFUDC % to Net Profit	2.5%																																																																																																																																																																																																																														
49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.0%	Long-Term Debt Ratio	37.0%																																																																																																																																																																																																																														
49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	62.0%	62.5%	Common Equity Ratio	62.5%																																																																																																																																																																																																																														
268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370	390	Total Capital (\$mill)	460																																																																																																																																																																																																																														
333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	525	535	Net Plant (\$mill)	575																																																																																																																																																																																																																														
5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	7.0%	7.5%	Return on Total Cap'l	8.5%																																																																																																																																																																																																																														
8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	10.0%	11.5%	Return on Shr. Equity	12.5%																																																																																																																																																																																																																														
8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	10.0%	11.5%	Return on Com Equity	12.5%																																																																																																																																																																																																																														
1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	4.0%	5.0%	Retained to Com Eq	6.0%																																																																																																																																																																																																																														
79%	78%	98%	75%	87%	83%	73%	67%	63%	58%	61%	55%	All Div'ds to Net Prof	50%																																																																																																																																																																																																																														
Pension Assets-12/16 \$59.4 mill.																																																																																																																																																																																																																																											
Oblig. \$78.6 mill.																																																																																																																																																																																																																																											
Pfd Stock \$2.4 mill. Pfd Div'd: \$.1 mill.																																																																																																																																																																																																																																											
Common Stock 16,346,036 shs. as of 10/31/17																																																																																																																																																																																																																																											
MARKET CAP: \$650 million (Small Cap)																																																																																																																																																																																																																																											
CURRENT POSITION (MILL)			<table border="1"> <tr><th></th><th>2015</th><th>2016</th><th>9/30/17</th></tr> <tr><td>Cash Assets</td><td>3.5</td><td>3.9</td><td>2.7</td></tr> <tr><td>Other</td><td>20.9</td><td>22.8</td><td>27.4</td></tr> <tr><td>Current Assets</td><td>24.4</td><td>26.7</td><td>30.1</td></tr> <tr><td>Accts Payable</td><td>6.5</td><td>12.3</td><td>12.1</td></tr> <tr><td>Debt Due</td><td>8.7</td><td>18.2</td><td>31.0</td></tr> <tr><td>Other</td><td>13.1</td><td>16.6</td><td>15.9</td></tr> <tr><td>Current Liab.</td><td>28.3</td><td>47.1</td><td>59.0</td></tr> </table>											2015	2016	9/30/17	Cash Assets	3.5	3.9	2.7	Other	20.9	22.8	27.4	Current Assets	24.4	26.7	30.1	Accts Payable	6.5	12.3	12.1	Debt Due	8.7	18.2	31.0	Other	13.1	16.6	15.9	Current Liab.	28.3	47.1	59.0																																																																																																																																																																																															
	2015	2016	9/30/17																																																																																																																																																																																																																																								
Cash Assets	3.5	3.9	2.7																																																																																																																																																																																																																																								
Other	20.9	22.8	27.4																																																																																																																																																																																																																																								
Current Assets	24.4	26.7	30.1																																																																																																																																																																																																																																								
Accts Payable	6.5	12.3	12.1																																																																																																																																																																																																																																								
Debt Due	8.7	18.2	31.0																																																																																																																																																																																																																																								
Other	13.1	16.6	15.9																																																																																																																																																																																																																																								
Current Liab.	28.3	47.1	59.0																																																																																																																																																																																																																																								
ANNUAL RATES of change (per sh)			<table border="1"> <tr><th></th><th>Past 10 Yrs.</th><th>Past 5 Yrs.</th><th>Est'd '14-'16 to '20-'22</th></tr> <tr><td>Revenues</td><td>2.0%</td><td>3.0%</td><td>3.5%</td></tr> <tr><td>"Cash Flow"</td><td>4.5%</td><td>6.5%</td><td>8.0%</td></tr> <tr><td>Earnings</td><td>5.0%</td><td>8.0%</td><td>9.0%</td></tr> <tr><td>Dividends</td><td>1.5%</td><td>1.5%</td><td>5.0%</td></tr> <tr><td>Book Value</td><td>4.0%</td><td>3.0%</td><td>4.5%</td></tr> </table>											Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22	Revenues	2.0%	3.0%	3.5%	"Cash Flow"	4.5%	6.5%	8.0%	Earnings	5.0%	8.0%	9.0%	Dividends	1.5%	1.5%	5.0%	Book Value	4.0%	3.0%	4.5%																																																																																																																																																																																																							
	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22																																																																																																																																																																																																																																								
Revenues	2.0%	3.0%	3.5%																																																																																																																																																																																																																																								
"Cash Flow"	4.5%	6.5%	8.0%																																																																																																																																																																																																																																								
Earnings	5.0%	8.0%	9.0%																																																																																																																																																																																																																																								
Dividends	1.5%	1.5%	5.0%																																																																																																																																																																																																																																								
Book Value	4.0%	3.0%	4.5%																																																																																																																																																																																																																																								
QUARTERLY REVENUES (\$mill)			<table border="1"> <tr><th>Cal-endar</th><th>Mar.31</th><th>Jun.30</th><th>Sep.30</th><th>Dec.31</th><th>Full Year</th></tr> <tr><td>2014</td><td>27.1</td><td>29.2</td><td>32.7</td><td>28.1</td><td>117.1</td></tr> <tr><td>2015</td><td>28.8</td><td>31.7</td><td>34.7</td><td>30.8</td><td>126.0</td></tr> <tr><td>2016</td><td>30.6</td><td>32.7</td><td>37.8</td><td>31.8</td><td>132.9</td></tr> <tr><td>2017</td><td>30.1</td><td>33.0</td><td>36.2</td><td>34.7</td><td>134</td></tr> <tr><td>2018</td><td>33.0</td><td>37.0</td><td>38.0</td><td>35.0</td><td>143</td></tr> </table>										Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year	2014	27.1	29.2	32.7	28.1	117.1	2015	28.8	31.7	34.7	30.8	126.0	2016	30.6	32.7	37.8	31.8	132.9	2017	30.1	33.0	36.2	34.7	134	2018	33.0	37.0	38.0	35.0	143																																																																																																																																																																																											
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																																																																																																																																																																																																																																						
2014	27.1	29.2	32.7	28.1	117.1																																																																																																																																																																																																																																						
2015	28.8	31.7	34.7	30.8	126.0																																																																																																																																																																																																																																						
2016	30.6	32.7	37.8	31.8	132.9																																																																																																																																																																																																																																						
2017	30.1	33.0	36.2	34.7	134																																																																																																																																																																																																																																						
2018	33.0	37.0	38.0	35.0	143																																																																																																																																																																																																																																						
EARNINGS PER SHARE A			<table border="1"> <tr><th>Cal-endar</th><th>Mar.31</th><th>Jun.30</th><th>Sep.30</th><th>Dec.31</th><th>Full Year</th></tr> <tr><td>2014</td><td>.20</td><td>.29</td><td>.42</td><td>.28</td><td>1.13</td></tr> <tr><td>2015</td><td>.22</td><td>.31</td><td>.41</td><td>.28</td><td>1.22</td></tr> <tr><td>2016</td><td>.29</td><td>.36</td><td>.54</td><td>.19</td><td>1.38</td></tr> <tr><td>2017</td><td>.27</td><td>.33</td><td>.46</td><td>.34</td><td>1.40</td></tr> <tr><td>2018</td><td>.33</td><td>.38</td><td>.60</td><td>.34</td><td>1.65</td></tr> </table>										Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year	2014	.20	.29	.42	.28	1.13	2015	.22	.31	.41	.28	1.22	2016	.29	.36	.54	.19	1.38	2017	.27	.33	.46	.34	1.40	2018	.33	.38	.60	.34	1.65																																																																																																																																																																																											
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																																																																																																																																																																																																																																						
2014	.20	.29	.42	.28	1.13																																																																																																																																																																																																																																						
2015	.22	.31	.41	.28	1.22																																																																																																																																																																																																																																						
2016	.29	.36	.54	.19	1.38																																																																																																																																																																																																																																						
2017	.27	.33	.46	.34	1.40																																																																																																																																																																																																																																						
2018	.33	.38	.60	.34	1.65																																																																																																																																																																																																																																						
QUARTERLY DIVIDENDS PAID B=C			<table border="1"> <tr><th>Cal-endar</th><th>Mar.31</th><th>Jun.30</th><th>Sep.30</th><th>Dec.31</th><th>Full Year</th></tr> <tr><td>2014</td><td>.19</td><td>.19</td><td>.19</td><td>.1925</td><td>.76</td></tr> <tr><td>2015</td><td>.1925</td><td>.1925</td><td>.1925</td><td>.19875</td><td>.78</td></tr> <tr><td>2016</td><td>.19875</td><td>.19875</td><td>.19875</td><td>.21125</td><td>.81</td></tr> <tr><td>2017</td><td>.21125</td><td>.21125</td><td>.21125</td><td>.22375</td><td>.86</td></tr> <tr><td>2018</td><td></td><td></td><td></td><td></td><td></td></tr> </table>										Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year	2014	.19	.19	.19	.1925	.76	2015	.1925	.1925	.1925	.19875	.78	2016	.19875	.19875	.19875	.21125	.81	2017	.21125	.21125	.21125	.22375	.86	2018																																																																																																																																																																																																
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																																																																																																																																																																																																																																						
2014	.19	.19	.19	.1925	.76																																																																																																																																																																																																																																						
2015	.1925	.1925	.1925	.19875	.78																																																																																																																																																																																																																																						
2016	.19875	.19875	.19875	.21125	.81																																																																																																																																																																																																																																						
2017	.21125	.21125	.21125	.22375	.86																																																																																																																																																																																																																																						
2018																																																																																																																																																																																																																																											

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

(B) Dividends historically paid in mid-Feb., May, Aug., and November. Div'd reinvestment plan available.

(C) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	70
Price Growth Persistence	80
Earnings Predictability	40

© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.

To subscribe call 1-800-VALUELINE

proved perspective. All told, we look for earnings to expand 18% this year, to \$1.65 a share (+0.05), on revenues of \$143 million (-\$2.0 million).

Long-term, infrastructure upgrades ought to bear fruit. Approximately \$12 million per year (for the next three years) is earmarked for the replacement of aging water mains, valves, and other infrastructure upgrades.

The company boosted its quarterly dividend payout by about 6%, to \$0.224 per share. Shareholders have enjoyed 45 years of consecutive dividend increases, and we don't think this streak will be broken anytime soon. At present, MSEX shares offer a yield that fractionally outpaces the average of all dividend paying stocks in *The Value Line Investment Survey*.

This issue is still a subpar selection for relative year-ahead price performance (Timeliness: 4). What's more, total return potential over the pull to 2020-2022 is nothing to write home about. Thus, we think investors can find better options elsewhere, at this juncture.

Nicholas P. Patrikis January 12, 2018

Middlesex Water Company's battle with mother nature has yet to subside. The story hasn't changed much over the past three months, as weather-related disruptions took a toll on its top line once again. Operating in the Northeast region of the U.S. leaves MSEX vulnerable to extremely volatile weather conditions, which can noticeably impact customer water consumption. Specifically, its Middlesex New Jersey operations saw revenues contract \$1.8 million, year over year, due to softer consumption, while its Delaware utility system was essentially flat, thanks to contributions from added residential customers during the period. Overall, Middlesex generated \$36.2 million in revenues for the September period, \$1.6 million less than last year's haul. This has spurred us to trim \$3.0 million off our 2017 top-line forecast, to \$134 million.

The outlook for profit growth in 2018 is good. Operating margins ought to remain relatively steady, with few changes to the cost structure expected. Meantime, a reduced income tax rate (new tax act and various investment spending deductions) is the main driver behind our im-

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 61,000 retail customers, primarily in Middlesex County, New Jersey. In

2016, the Middlesex System accounted for 60% of operating revenues. At 12/31/16, the company had 309 employees. Incorporated: NJ, President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 7.2% (4/17 proxy). Add.: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.

YORK WATER NDQ-YORW		RECENT PRICE	33.35	P/E RATIO	30.0 (Trailing: 34.4 Median: 24.0)	RELATIVE P/E RATIO	1.46	DIV'D YLD	2.0%	VALUE LINE															
TIMELINESS 3	Raised 11/17/17	High: 21.0	18.5	16.5	18.0	18.0	18.1	18.5	22.0	24.3	26.7	39.8	39.9	Target Price	Range										
SAFETY 3	Lowered 7/17/15	Low: 15.3	15.5	6.2	9.7	12.8	15.8	16.8	17.6	18.8	19.7	23.8	31.7	2020	2021	2022									
TECHNICAL 2	Raised 15/18	LEGENDS 1.10 x Dividends p sh divided by Interest Rate Relative Price Strength 3-10-2 split 9/06 Options: Yes Shaded area indicates recession										64													
BETA .80	(1.00 = Market)	2020-22 PROJECTIONS Price Gain Return High 45 (+35%) 10% Low 30 (-10%) Nil										48													
Insider Decisions M A M J J A S O N to Buy 1 1 3 2 2 1 3 2 2 1 3 2 to Sell 0 0 0 0 0 0 0 0 0 0 0 0 Options 0 0 0 0 0 0 0 0 0 0 0 0											24														
Institutional Decisions 10/20/17 20/20/17 30/20/17 to Buy 38 42 40 to Sell 33 33 30 Hld's (\$mil) 5127 5205 5125											12														
Percent shares traded 12 8 4											8														
% TOT. RETURN 12/17 THIS STOCK VS. ARTH [®] INDEX 1 yr. -9.6 15.8 3 yr. 55.7 30.1 5 yr. 115.9 92.5											6														
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	VALUE LINE PUB. LLC	20-22						
2.05	2.05	2.17	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.75	3.95	Revenues per sh	5.40						
.59	.57	.65	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.65	1.75	"Cash Flow" per sh	2.25						
.43	.40	.47	.49	.58	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.05	1.15	Earnings per sh ^A	1.60						
.34	.35	.37	.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.70	Div'd Decl'd per sh ^B	.96						
.75	.66	1.07	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	1.25	Cap'l Spending per sh	.95						
3.79	3.90	4.06	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.30	9.55	Book Value per sh	11.20						
9.46	9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.90	12.75	Common Shs Outst'g ^C	12.50						
17.8	26.9	24.5	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	33.3		Avg Ann'l P/E Ratio	22.5						
.91	1.47	1.40	1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.62		Relative P/E Ratio	1.40						
4.4%	3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%		Avg Ann'l Div'd Yield	2.6%						
CAPITAL STRUCTURE as of 9/30/17 Total Debt \$88.9 mill. Due in 5 Yrs \$30.5 mill. LT Debt \$88.9 mill. LT Interest \$5.4 mill.											31.4	32.8	37.0	39.0	40.6	41.4	42.4	45.9	47.1	47.6	48.5	50.5	50.5	Revenues (\$mill)	67.5
Pension Assets 12/16 \$35.5 mill. Oblig. \$40.8 mill. (43% of Cap'l)											6.4	6.4	7.5	8.9	9.1	9.3	9.7	11.5	12.5	11.8	13.5	14.5	14.5	Net Profit (\$mill)	20.0
Pfd Stock None											36.5%	36.1%	37.9%	38.5%	35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	24.0%	21.0%	21.0%	Income Tax Rate	21.0%
Common Stock 12,859,432 shs.											3.6%	10.1%	--	1.2%	1.1%	1.1%	8%	1.8%	1.6%	1.9%	2.0%	1.5%	1.5%	AFUDC % to Net Profit	1.5%
MARKET CAP: \$425 million (Small Cap)											46.5%	54.5%	45.7%	48.3%	47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	43.0%	43.0%	Long-Term Debt Ratio	43.5%
CURRENT POSITION (\$MILL)											53.5%	45.5%	54.3%	51.7%	52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.0%	57.0%	Common Equity Ratio	56.5%
Cash Assets 2.9 4.2 --											125.7	153.4	160.1	176.4	180.2	184.8	188.4	189.4	196.3	198.7	210	220	220	Total Capital (\$mill)	250
Accounts Receivable 3.5 4.3 4.4											191.6	211.4	222.0	228.4	233.0	240.3	244.2	253.2	261.4	270.9	275	280	280	Net Plant (\$mill)	295
Inventory (Avg. Cost) .8 .7 .9											6.7%	5.7%	6.2%	6.5%	6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	8.0%	8.0%	Return on Total Cap'l	9.0%
Other 4.6 3.4 3.3											9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	11.5%	12.0%	12.0%	Return on Shr. Equity	14.5%
Current Assets 11.8 12.6 8.6											9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	11.5%	12.0%	12.0%	Return on Com Equity	14.5%
Accts Payable 1.8 3.7 4.0											1.7%	1.4%	1.9%	2.7%	2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	4.5%	4.5%	Retained to Com Eq	5.5%
Debt Due -- -- --											82%	85%	78%	72%	73%	74%	74%	64%	62%	67%	63%	61%	61%	All Div'ds to Net Prof	60%
Other 4.4 4.5 6.1											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, 2016, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 196,000. Has more than 67,000 customers. Residential customers accounted for 63% of 2016 revenues; commercial and industrial (29%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 105 full-time employees at 12/31/16. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (3/17 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.														
Current Liab. 6.2 8.2 10.1											York Water delivered a better-than-expected bottom-line performance in the third quarter. The regulated water utility earned \$0.31 a share for the September period (+15% year over year), besting our \$0.29 call by two cents. The advance can be largely attributed to a lower effective tax rate (asset improvements qualify for deductions), higher surcharges to customers, and an increased allowance for funds used during construction (interest deduction). Meanwhile, operation and maintenance expenses as a percentage of revenues rose 200 basis points, on an annual basis, which makes the share-net showing even more encouraging. On the other hand, revenue growth was essentially nonexistent, dragged down by generally lower consumption.														
ANNUAL RATES of change (per sh)											Capital expenditures ought to remain par for the course going forward. Management estimates it spent approximately \$25 million in 2017 on aging infrastructure, raw water pumping stations, and pipe replacements, more than double the year-earlier total. With plenty of its footprint still needing to be brought up to speed, we anticipate at least several years of aggressive investment spending.														
Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '20-'22											York Water raised its quarterly dividend by 4%, to \$0.17 a share. This marks 21 consecutive years that the company has increased its annual dividend payout. The current yield is fractionally above that of the Value Line median, but should trend higher into next decade thanks to additional dividend hikes.														
Revenues 4.0% 3.5% 6.5%											York Water shares have moved up one notch for Timeliness, to 3, and are now pegged to track the year-ahead broader market averages. Prospects out to the 2020-2022 time frame are bright, though most of the benefits we envision appear to already be baked into the stock price. Capital appreciation potential does not stand out at the recent quotation.														
"Cash Flow" 6.5% 6.5% 8.0%											Nicholas P. Patrikis January 12, 2018														
Earnings 5.5% 6.0% 9.5%																									
Dividends 3.5% 3.0% 8.0%																									
Book Value 5.0% 3.5% 4.5%																									
QUARTERLY REVENUES (\$mill)																									
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year																									
2014 10.6 11.8 12.0 11.5 45.9																									
2015 11.2 11.9 12.4 11.6 47.1																									
2016 11.3 11.8 12.6 11.9 47.6																									
2017 11.3 12.3 12.7 12.2 48.5																									
2018 12.0 12.5 13.3 12.7 50.5																									
EARNINGS PER SHARE^A																									
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year																									
2014 .16 .22 .23 28 .89																									
2015 .20 .22 .28 27 .97																									
2016 .19 .23 .27 23 .92																									
2017 .20 .23 .31 31 1.05																									
2018 .24 .25 .34 32 1.15																									
QUARTERLY DIVIDENDS PAID^B																									
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year																									
2014 .1431 .1431 .1431 .1431 .572																									
2015 .1495 .1495 .1495 .1555 .604																									
2016 .1555 .1555 .1555 .1602 .627																									
2017 .1602 .1602 .1602 .1666 .647																									
2018																									

(A) Diluted earnings. Next earnings report due late February.
(B) Dividends historically paid in late February, June, September, and December.

(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	60
Price Growth Persistence	55
Earnings Predictability	90

To subscribe call 1-800-VALUELINE

Carolina Water Services, Inc. of North Carolina
Summary of Risk Premium Models for the
Proxy Group of Six Water Companies

	<u>Proxy Group of Six Water Companies</u>
Predictive Risk Premium Model (PRPM) (1)	13.43 %
Risk Premium Using an Adjusted Total Market Approach (2)	<u>10.80 %</u>
Average	<u><u>12.12 %</u></u>

Notes:

(1) From page 2 of this Schedule.

(2) From page 3 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
<u>Proxy Group of Six Water Companies</u>	<u>LT Average Predicted Variance</u>	<u>Spot Predicted Variance</u>	<u>Average Predicted Variance</u>	<u>GARCH Coefficient</u>	<u>Predicted Risk Premium (2)</u>	<u>Risk-Free Rate (3)</u>	<u>Indicated ROE (4)</u>
American States Water Co.	0.38%	0.33%	0.36%	1.77802	7.96%	3.69%	11.65%
American Water Works Company Inc	NMF	NMF	NMF	4.90988	NMF	3.69%	NMF
Aqua America Inc	0.45%	0.32%	0.39%	2.26697	11.14%	3.69%	14.83%
California Water Service Group	0.32%	0.42%	0.37%	1.86909	8.62%	3.69%	12.31%
Middlesex Water Co.	0.30%	0.52%	0.41%	1.87709	9.64%	3.69%	13.33%
York Water Co.	0.47%	0.47%	0.47%	1.98492	11.79%	3.69%	15.48%
						Average	<u>13.52%</u>
						Median	<u>13.33%</u>
						Average of Mean and Median	<u>13.43%</u>

NMF = Not Meaningful Figure

Notes:

- (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 Bloomberg Professional Service.
- (2) $(1 + (\text{Column [3]} * \text{Column [4]})^{12}) - 1$.
- (3) From note 2 on page 2 of Schedule DWD-5.
- (4) Column [5] + Column [6].

Carolina Water Services, Inc. of North Carolina
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 Six Water Companies</u>
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	4.66 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.28</u> (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	4.94 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.06</u> (3)
5.	Adjusted Prospective Bond Yield	5.00 %
6.	Equity Risk Premium (4)	<u>5.80</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.80</u></u> %

- Notes:
- (1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10-11 of this Schedule).
 - (2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.28% from page 4 of this Schedule.
 - (3) Adjustment to reflect the A2 / A3 Moody's LT issuer rating of the proxy group of eight water companies as shown on page 5 of this Schedule. The 0.06% upward adjustment is derived by taking 1/6 of the spread between A2 and A3 Public Utility Bonds ($1/6 * 0.34\% = 0.06\%$) as derived from page 4 of this Schedule.
 - (4) From page 7 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1]	[2]	[3]
	<u>Aaa Rated Corporate Bond</u>	<u>A Rated Public Utility Bond</u>	<u>Baa Rated Public Utility Bond</u>
Feb-2018	3.87 %	4.13 %	4.52 %
Jan-2018	3.82	4.09	4.42
Dec-2017	<u>3.55</u>	<u>3.86</u>	<u>4.18</u>
Average	<u>3.75 %</u>	<u>4.03 %</u>	<u>4.37 %</u>

Selected Bond Spreads

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:

0.28 % (1)

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

0.34 % (2)

Notes:

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

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

Source of Information:

Bloomberg Professional Service

Carolina Water Services, Inc. of North Carolina
Comparison of Long-Term Issuer Ratings for
Proxy Group of Six Water Companies

	<u>Moody's</u>		<u>Standard & Poor's</u>	
	<u>Long-Term Issuer Rating</u>	<u>March 2018</u>	<u>Long-Term Issuer Rating</u>	<u>March 2018</u>
<u>Proxy Group of Six Water Companies</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting(1)</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting(1)</u>
American States Water Co. (2)	A2	6.0	A+	5.0
American Water Works Company Inc (3)	A3	7.0	A	6.0
Aqua America Inc (4)	NR	--	A+	5.0
California Water Service Group (5)	NR	--	A+	5.0
Middlesex Water Co.	NR	--	A	6.0
York Water Co.	NR	--	A-	7.0
Average	<u>A2/A3</u>	<u>6.5</u>	<u>A</u>	<u>5.7</u>

Notes:

- (1) From page 6 of this Schedule.
- (2) Ratings that of Golden State Water Company.
- (3) Ratings that of New Jersey and Pennsylvania American Water Companies.
- (4) Ratings that of Aqua Pennsylvania, Inc.
- (5) Ratings that of California Water Service Company.

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

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-
B1	14	B+
B2	15	B
B3	16	B-

Carolina Water Services, Inc. of North Carolina
Judgment of Equity Risk Premium for
Proxy Group of Six Water Companies

<u>Line No.</u>		<u>Proxy Group of Six Water Companies</u>
1.	Calculated equity risk premium based on the total market using the beta approach (1)	6.64 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	<u>4.95</u>
3.	Average equity risk premium	<u><u>5.80 %</u></u>

Notes: (1) From page 8 of this Schedule.
(2) From page 12 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Six Water Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.56 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.31
3.	Ibbotson Equity Risk Premium based on PRPM (3)	<u>6.66</u>
4.	Average Ibbotson Equity Risk Premium	<u><u>6.51</u></u>
<u>Value Line-Based Equity Risk Premiums:</u>		
5.	Equity Risk Premium Based on Value Line Summary and Index (4)	4.68
6.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	<u>11.07</u>
7.	Average Value Line Equity Risk Premium	<u><u>7.87</u></u>
<u>Bloomberg-Based Equity Risk Premium:</u>		
8.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>9.93</u>
9.	Conclusion of Equity Risk Premium (7)	8.10 %
10.	Adjusted Beta (8)	<u>0.82</u>
11.	Forecasted Equity Risk Premium	<u><u>6.64 %</u></u>

Notes provided on page 9 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Six Water Companies

Notes:

- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2017 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2016:
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2017 referenced in Note 1 above.
- (3) The Predictive Risk Premium Model (PRPM) is discussed in the 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 and average Aaa and Aa corporate monthly bond yields, from January 1928 through March 2018.
- (4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 4.66% (from page 3 of this Schedule) from the projected 3-5 year total annual market return of 9.34% (described fully in note 1 on page 2 of Schedule DWD-5).
- (5) Using data from Value Line for the S&P 500, an expected total return of 15.73% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.66% results in an expected equity risk premium of 11.07%.
- (6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 14.59% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.66% results in an expected equity risk premium of 9.93%.
- (7) Average of lines 4, 7, and 8.
- (8) Average of mean and median beta from Schedule DWD-5.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2017 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2017 and April 1, 2018
Bloomberg Professional Service

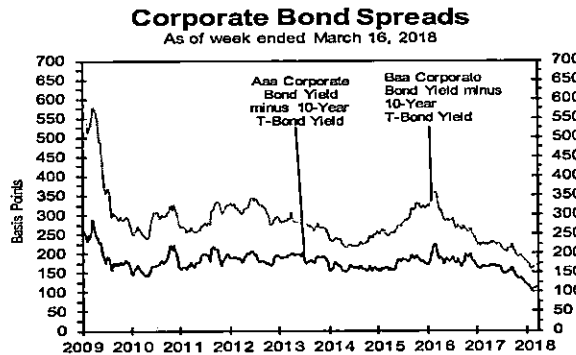
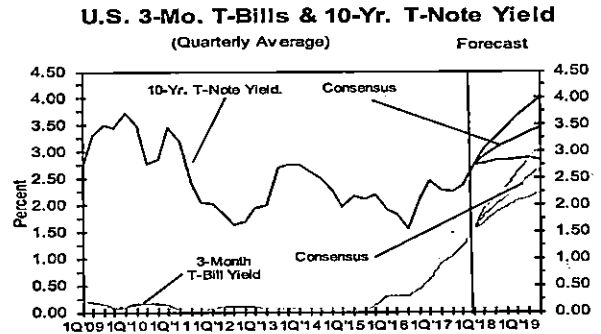
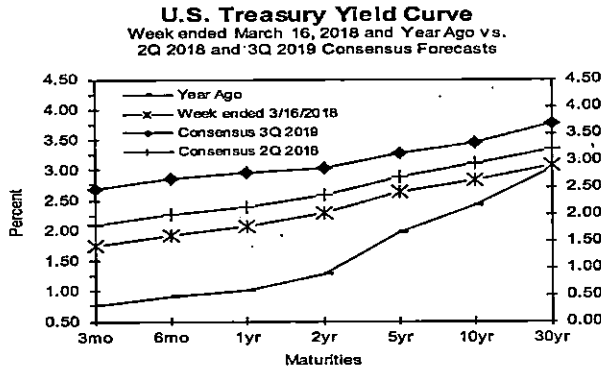
2 ■ BLUE CHIP FINANCIAL FORECASTS ■ APRIL 1, 2018

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 Qtr 1Q 2018*	2Q	3Q	4Q	1Q	2Q	3Q
	Mar. 16	Mar. 9	Mar. 2	Feb. 23	Feb	Jan	Dec	2018		2018	2018	2019	2019	2019	
Federal Funds Rate	1.42	1.42	1.41	1.42	1.42	1.41	1.29	1.42	1.7	2.0	2.2	2.4	2.6	2.7	
Prime Rate	4.50	4.50	4.50	4.50	4.50	4.50	4.38	4.50	4.8	5.0	5.2	5.4	5.6	5.8	
LIBOR, 3-mo.	2.15	2.06	2.01	1.92	1.84	1.73	1.59	1.88	2.1	2.3	2.5	2.7	2.9	3.1	
Commercial Paper, 1-mo.	1.79	1.68	1.64	1.56	1.52	1.50	1.38	1.57	1.8	2.0	2.3	2.5	2.7	2.9	
Treasury bill, 3-mo.	1.75	1.68	1.65	1.64	1.56	1.43	1.33	1.56	1.8	2.0	2.2	2.3	2.5	2.7	
Treasury bill, 6-mo.	1.93	1.88	1.86	1.85	1.76	1.62	1.49	1.76	2.0	2.2	2.3	2.5	2.7	2.9	
Treasury bill, 1 yr.	2.06	2.05	2.06	2.02	1.94	1.80	1.69	1.93	2.1	2.3	2.5	2.7	2.8	3.0	
Treasury note, 2 yr.	2.28	2.25	2.24	2.25	2.16	2.02	1.83	2.15	2.4	2.5	2.7	2.8	2.9	3.0	
Treasury note, 5 yr.	2.63	2.65	2.63	2.66	2.59	2.36	2.17	2.53	2.7	2.8	2.9	3.1	3.2	3.3	
Treasury note, 10 yr.	2.84	2.88	2.86	2.91	2.84	2.56	2.40	2.75	2.9	3.1	3.2	3.3	3.4	3.4	
Treasury note, 30 yr.	3.08	3.15	3.14	3.19	3.11	2.86	2.77	3.03	3.2	3.3	3.5	3.6	3.7	3.8	
Corporate Aaa bond	3.97	4.00	3.97	3.99	3.91	3.68	3.63	3.86	4.1	4.2	4.4	4.6	4.7	4.8	
Corporate Baa bond	4.58	4.61	4.56	4.56	4.47	4.24	4.21	4.43	4.8	5.0	5.1	5.3	5.4	5.5	
State & Local bonds	3.61	3.60	3.60	3.59	3.57	3.42	3.46	3.53	3.8	3.9	4.1	4.2	4.3	4.4	
Home mortgage rate	4.44	4.46	4.43	4.40	4.33	4.03	3.95	4.27	4.5	4.6	4.8	4.9	5.0	5.2	

Key Assumptions	History								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q*	2Q	3Q	4Q	1Q	2Q	3Q
	2018	2018	2018	2017	2017	2017	2017	2018	2018	2018	2019	2019	2019	2019
Major Currency Index	89.6	90.3	93.7	94.4	93.0	88.3	88.9	86.3	86.4	86.4	86.5	86.5	86.6	86.7
Real GDP	2.2	2.8	1.8	1.2	3.1	3.2	2.6	2.2	3.1	3.0	2.8	2.5	2.4	2.1
GDP Price Index	2.4	1.4	2.0	2.0	1.0	2.1	2.4	2.3	2.0	2.2	2.1	2.2	2.1	2.2
Consumer Price Index	2.3	1.8	3.0	3.1	-0.3	2.0	3.7	3.3	1.9	2.2	2.1	2.2	2.2	2.3

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data is sourced from Haver Analytics. Historical data for Fed's Major Currency Index is from FRSR H.10. 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). *Interest rate data for 1Q 2018 based on historical data through the week ended March 16th. Data for 1Q 2018 Major Currency Index is based on data through week ended March 16th. Figures for 1Q 2018 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question asked of the panelists' this month.*



14 ■ BLUE CHIP FINANCIAL FORECASTS ■ DECEMBER 1, 2017

Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2019 through 2023 and averages for the five-year periods 2019-2023 and 2024-2028. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

Interest Rates		Average For The Year					Five-Year Averages	
		2019	2020	2021	2022	2023	2019-2023	2024-2028
1. Federal Funds Rate	CONSENSUS	2.5	2.7	2.9	2.9	2.9	2.8	3.0
	Top 10 Average	2.9	3.2	3.4	3.4	3.5	3.3	3.5
	Bottom 10 Average	2.1	2.0	2.3	2.3	2.4	2.2	2.4
2. Prime Rate	CONSENSUS	5.5	5.8	5.9	5.9	5.9	5.8	5.9
	Top 10 Average	5.9	6.3	6.4	6.5	6.6	6.3	6.5
	Bottom 10 Average	5.0	5.1	5.2	5.2	5.2	5.1	5.3
3. LIBOR, 3-Mo.	CONSENSUS	2.8	3.1	3.2	3.1	3.2	3.1	3.2
	Top 10 Average	3.2	3.6	3.8	3.8	3.9	3.7	3.8
	Bottom 10 Average	2.4	2.6	2.6	2.5	2.6	2.5	2.6
4. Commercial Paper, 1-Mo.	CONSENSUS	2.6	2.9	3.0	3.0	3.1	2.9	3.1
	Top 10 Average	3.1	3.5	3.6	3.7	3.8	3.5	3.8
	Bottom 10 Average	2.2	2.5	2.6	2.5	2.5	2.5	2.6
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	2.5	2.8	2.9	2.9	2.9	2.8	2.9
	Top 10 Average	2.9	3.3	3.4	3.4	3.5	3.3	3.5
	Bottom 10 Average	2.1	2.3	2.4	2.3	2.3	2.3	2.4
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	2.6	2.9	3.0	3.0	3.0	2.9	3.1
	Top 10 Average	3.0	3.4	3.5	3.6	3.7	3.5	3.7
	Bottom 10 Average	2.2	2.4	2.5	2.4	2.4	2.4	2.5
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	2.7	3.0	3.1	3.1	3.2	3.0	3.2
	Top 10 Average	3.2	3.6	3.7	3.7	3.8	3.6	3.9
	Bottom 10 Average	2.3	2.5	2.6	2.5	2.5	2.5	2.6
8. Treasury Note Yield, 2-Yr.	CONSENSUS	2.8	3.1	3.3	3.2	3.3	3.1	3.3
	Top 10 Average	3.3	3.8	3.8	3.8	3.9	3.7	4.0
	Bottom 10 Average	2.4	2.6	2.7	2.6	2.6	2.6	2.7
10. Treasury Note Yield, 5-Yr.	CONSENSUS	3.1	3.4	3.5	3.5	3.5	3.4	3.6
	Top 10 Average	3.6	3.9	4.1	4.1	4.1	3.9	4.3
	Bottom 10 Average	2.6	2.8	2.9	2.9	2.9	2.8	3.0
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.3	3.6	3.7	3.7	3.8	3.6	3.8
	Top 10 Average	3.9	4.2	4.3	4.3	4.3	4.2	4.5
	Bottom 10 Average	2.8	2.9	3.1	3.1	3.1	3.0	3.2
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	3.8	4.1	4.2	4.2	4.2	4.1	4.3
	Top 10 Average	4.4	4.7	4.7	4.7	4.8	4.7	5.0
	Bottom 10 Average	3.3	3.5	3.6	3.5	3.6	3.5	3.7
13. Corporate Aaa Bond Yield	CONSENSUS	4.9	5.1	5.2	5.2	5.3	5.1	5.4
	Top 10 Average	5.5	5.9	5.9	6.0	6.0	5.9	6.2
	Bottom 10 Average	4.3	4.5	4.5	4.5	4.6	4.5	4.7
13. Corporate Baa Bond Yield	CONSENSUS	5.7	6.0	6.0	6.0	6.1	6.0	6.2
	Top 10 Average	6.4	6.8	6.8	6.9	6.9	6.8	7.0
	Bottom 10 Average	5.0	5.2	5.3	5.2	5.3	5.2	5.4
14. State & Local Bonds Yield	CONSENSUS	4.4	4.5	4.6	4.5	4.6	4.5	4.8
	Top 10 Average	5.0	5.2	5.2	5.3	5.3	5.2	5.5
	Bottom 10 Average	3.9	4.0	4.0	3.9	4.1	4.0	4.1
15. Home Mortgage Rate	CONSENSUS	5.0	5.2	5.3	5.3	5.4	5.2	5.5
	Top 10 Average	5.5	5.8	5.9	6.0	6.0	5.8	6.1
	Bottom 10 Average	4.5	4.7	4.7	4.6	4.7	4.6	4.9
A. FRB - Major Currency Index	CONSENSUS	90.4	90.0	89.9	89.9	90.0	90.0	90.4
	Top 10 Average	94.7	94.8	95.0	95.1	95.3	95.0	95.4
	Bottom 10 Average	86.9	85.8	85.4	85.5	85.6	85.8	86.1
B. Real GDP	CONSENSUS	2.2	1.9	2.0	2.0	2.0	2.0	2.0
	Top 10 Average	2.5	2.4	2.5	2.4	2.3	2.4	2.4
C. GDP Chained Price Index	CONSENSUS	1.8	1.4	1.7	1.6	1.7	1.6	1.7
	Top 10 Average	2.2	2.1	2.1	2.1	2.1	2.1	2.1
	Bottom 10 Average	1.8	1.9	1.9	2.0	1.9	1.9	1.9
D. Consumer Price Index	CONSENSUS	2.3	2.3	2.3	2.2	2.2	2.3	2.2
	Top 10 Average	2.7	2.6	2.6	2.4	2.4	2.5	2.4
	Bottom 10 Average	1.9	1.9	2.0	2.0	2.0	2.0	2.0

Carolina Water Services, Inc. of North Carolina
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

<u>Line No.</u>		<u>Implied Equity Risk Premium</u>
	<u>Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):</u>	
1.	Historical Equity Risk Premium	4.04 %
2.	Regression of Historical Equity Risk Premium (2)	5.61
3.	Forecasted Equity Risk Premium Based on PRPM (3)	<u>4.18</u>
4.	Average Equity Risk Premium Using S&P Holding Period Returns	<u>4.61 %</u>
	<u>Equity Risk Premium based on Projected Market Appreciation of the S&P Utility Index</u>	
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	<u>4.86</u>
6.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	<u>5.37</u>
7.	Average Equity Risk Premium (6)	<u>4.95 %</u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2017. 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.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A rated public utility bond yields from 1928 - 2017 referenced in note 1 above.
- (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 January 1928 - March 2018.
- (4) Using data from Value Line for the S&P Utilities Index, an expected return of 9.80% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A rated public utility bond yield of 4.94%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 4.86%. (9.80% - 4.94% = 4.86%)
- (5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 10.31% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A rated public utility bond yield of 4.94%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 5.37%. (10.31% - 4.94% = 5.37%)
- (6) Average of lines 4 through 6.

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

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Six Water Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Bloomberg Adjusted Beta</u>	<u>Average Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate</u>	<u>ECAPM Cost Rate</u>	<u>Indicated Common Equity Cost Rate (3)</u>
American States Water Co.	0.80	0.79	0.80	9.12 %	3.69 %	10.99 %	11.44 %	11.21 %
American Water Works Company Inc	0.65	0.71	0.68	9.12	3.69	9.89	10.62	10.26
Aqua America Inc	0.75	0.79	0.77	9.12	3.69	10.71	11.24	10.97
California Water Service Group	0.80	0.88	0.84	9.12	3.69	11.35	11.72	11.53
Middlesex Water Co.	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
York Water Co.	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
Mean			<u>0.81</u>			<u>11.03 %</u>	<u>11.48 %</u>	<u>11.25 %</u>
Median			<u>0.82</u>			<u>11.17 %</u>	<u>11.58 %</u>	<u>11.37 %</u>
Average of Mean and Median			<u>0.82</u>			<u>11.10</u>	<u>11.53</u>	<u>11.31 %</u>

Notes on page 2 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

- (1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2016)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2016:	11.97 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	<u>5.17</u>
MRP based on Ibbotson Historical Data:	<u>6.80</u> %

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2016)

8.49 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - March 2018)

7.55 %

Average Historical Data MRP 7.61 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending March 30, 2018)

Total projected return on the market 3-5 years hence*:	9.34 %
Projected Risk-Free Rate (see note 2):	<u>3.69</u>
MRP based on Value Line Summary & Index:	<u>5.65</u> %

*Forecasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	15.73 %
Projected Risk-Free Rate (see note 2):	<u>3.69</u>
MRP based on Value Line data	<u>12.04</u> %

Average Value Line MRP: 8.84 %

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	14.59 %
Projected Risk-Free Rate (see note 2):	<u>3.69</u>
MRP based on Bloomberg data	<u>10.90</u> %

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.12 %

- (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 Blue Chip Financial Forecasts. (See pages 10-11 of Schedule DWD-4.) The projection of the risk-free rate is illustrated below:

Second Quarter 2018	3.20 %
Third Quarter 2018	3.30
Fourth Quarter 2018	3.50
First Quarter 2019	3.60
Second Quarter 2019	3.70
Third Quarter 2019	3.80
2019-2023	4.10
2024-2028	<u>4.30</u>
	<u>3.69</u> %

- (3) Average of Column 6 and Column 7.

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2017 and April 1, 2018
Stocks, Bonds, Bills, and Inflation - 2017 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Carolina Water Service, Inc. of North Carolina
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group was then selected based on the unadjusted beta range of 0.38 – 0.78 and residual standard error of the regression range of 2.4465 – 2.9177 of the Utility 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 Utility Proxy Group's residual standard error of the regression is 0.1178. 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

$$\text{Thus, } 0.1178 = \frac{2.6821}{\sqrt{518}} = \frac{2.6821}{22.7596}$$

Source of Information: Value Line, Inc., March 2018
Value Line Investment Survey (Standard Edition)

Carolina Water Services, Inc. of North Carolina
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Six 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.	0.75	0.62	2.7925	0.1058
American Water Works Company Inc	0.65	0.42	2.0354	0.0771
Aqua America Inc	0.70	0.54	2.1992	0.0833
California Water Service Group	0.75	0.62	2.6641	0.1010
Middlesex Water Co.	0.80	0.63	3.1066	0.1177
York Water Co.	0.80	0.67	3.2949	0.1249
Average	<u>0.74</u>	<u>0.58</u>	<u>2.6821</u>	<u>0.1016</u>
Beta Range (+/- 2 std. Devs. of Beta) 2 std. Devs. of Beta	0.38 0.20	0.78		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.4465	2.9177		
Std. dev. of the Res. Std. Err.	0.1178			
2 std. devs. of the Res. Std. Err.	0.2356			

Source of Information: Valueline Proprietary Database, March 2018

Carolina Water Services, Inc. of North Carolina
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Seventeen 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>
ABM Industries Inc.	0.80	0.67	2.5536	0.0968
AutoZone Inc.	0.80	0.69	2.6223	0.0994
Cheesecake Factory	0.75	0.55	2.7238	0.1032
CBOE Holdings	0.70	0.49	2.5467	0.0965
Chemed Corp.	0.80	0.63	2.9158	0.1105
C.H. Robinson	0.85	0.71	2.6970	0.1022
Cigna Corp.	0.85	0.76	2.7306	0.1035
Darden Restaurants	0.85	0.74	2.7669	0.1049
DaVita Inc.	0.85	0.77	2.7539	0.1044
Forrester Research	0.70	0.48	2.6673	0.1011
Hormel Foods	0.75	0.56	2.5540	0.0968
IQVIA Holdings	0.85	0.75	2.5724	0.0989
Mercury General	0.80	0.62	2.4507	0.0929
Vail Resorts	0.80	0.69	2.5050	0.0949
Pinnacle Foods	0.80	0.66	2.5411	0.0973
Spectrum Brands	0.85	0.70	2.8926	0.1096
West Pharmac. Svcs.	0.85	0.74	2.6305	0.0997
Average	0.80	0.66	2.6500	0.1000
Proxy Group of Six Water Companies	0.74	0.58	2.6821	0.1016

Source of Information:

Valueline Proprietary Database, March 2018

Carolina Water Services, Inc. of North Carolina
Summary of Cost of Equity Models Applied to
Proxy Group of Seventeen Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

<u>Principal Methods</u>	<u>Proxy Group of Seventeen Non- Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	14.15 %
Risk Premium Model (RPM) (2)	12.46
Capital Asset Pricing Model (CAPM) (3)	<u>11.78</u>
	Mean <u>12.80</u> %
	Median <u>12.46</u> %
	Average of Mean and Median <u>12.63</u> %

Notes:

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

Carolina Water Services, Inc. of North Carolina
 DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Average Dividend Yield</u>	<u>Value Line Projected Five Year Growth in EPS</u>	<u>Reuters Mean Consensus Projected Five Year Growth Rate in EPS</u>	<u>Zack's Five Year Projected Growth Rate in EPS</u>	<u>Yahoo! Finance Projected Five Year Growth in EPS</u>	<u>Average Projected Five Year Growth Rate in EPS</u>	<u>Adjusted Dividend Yield</u>	<u>Indicated Common Equity Cost Rate (1)</u>
ABM Industries Inc.	1.91 %	15.00 %	16.00 %	NA %	16.00 %	15.67 %	2.06 %	17.73 %
AutoZone Inc.	-	11.50	11.68	12.70	11.68	11.89	-	NA
Cheesecake Factory	2.42	7.00	10.88	14.40	10.88	10.79	2.55	13.34
CBOE Holdings	0.89	16.50	17.90	17.60	17.90	17.48	0.97	18.45
Chemed Corp.	0.42	13.50	10.00	10.00	10.00	10.88	0.44	11.32
C.H. Robinson	2.00	9.50	9.86	9.00	9.86	9.56	2.10	11.66
Cigna Corp.	0.02	12.50	13.92	12.90	13.92	13.31	0.02	13.33
Darden Restaurants	2.66	13.00	13.52	10.90	13.53	12.74	2.83	15.57
DaVita Inc.	-	9.00	23.74	16.80	23.74	18.32	-	NA
Forrester Research	1.88	8.00	12.00	12.00	12.00	11.00	1.98	12.98
Hormel Foods	2.22	10.50	NA	9.30	0.53	6.78	2.30	9.08
IQVIA Holdings	-	14.50	16.65	13.80	16.15	15.28	-	NA
Mercury General	5.25	14.00	25.30	25.30	25.30	22.48	5.84	28.32
Vail Resorts	2.68	18.00	23.70	NA	23.70	21.80	2.97	24.77
Pinnacle Foods	2.25	10.50	9.60	8.00	9.60	9.43	2.36	11.79
Spectrum Brands	1.56	12.00	5.05	14.60	5.05	9.18	1.63	10.81
West Pharmac. Svcs.	0.60	14.00	10.20	13.70	10.20	12.03	0.64	12.67
							Mean	<u>15.13 %</u>
							Median	<u>13.16 %</u>
							Average of Mean and Median	<u>14.15 %</u>

NA= Not Available
 NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of March 30, 2018. The dividend yield is then adjusted by 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 03/29/2018
 www.zacks.com Downloaded on 03/29/2018
 www.yahoo.com Downloaded on 03/29/2018

Carolina Water Services, Inc. of North Carolina
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 Seventeen Non- Price Regulated Companies</u>
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	5.41 %
2.	Equity Risk Premium (2)	<u>7.05</u>
3.	Risk Premium Derived Common Equity Cost Rate	<u><u>12.46 %</u></u>

Notes: (1) Average forecast of Baa corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated December 1, 2017 and April 1, 2018 (see pages 10 and 11 of Schedule DWD-4). The estimates are detailed below.

Second Quarter 2018	4.80 %
Third Quarter 2018	5.00
Fourth Quarter 2018	5.10
First Quarter 2019	5.30
Second Quarter 2019	5.40
Third Quarter 2019	5.50
2019-2023	6.00
2024-2028	<u>6.20</u>
Average	<u><u>5.41 %</u></u>

(2) From page 5 of this Schedule.

Carolina Water Services, Inc. of North Carolina
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Moody's</u> <u>Long-Term Issuer Rating</u> <u>March 2018</u>		<u>Standard & Poor's</u> <u>Long-Term Issuer Rating</u> <u>March 2018</u>	
	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>
ABM Industries Inc.	NR	--	NR	--
AutoZone Inc.	Baa1	8.0	BBB	9.0
Cheesecake Factory	NR	--	NR	--
CBOE Holdings	Baa1	8.0	BBB+	8.0
Chemed Corp.	WR	--	NR	--
C.H. Robinson	NR	--	BBB+	8.0
Cigna Corp.	Baa1	8.0	A	--
Darden Restaurants	Baa2	9.0	BBB	9.0
DaVita Inc.	Ba3	13.0	BB	12.0
Forrester Research	NR	--	NR	--
Hormel Foods	A1	5.0	A	6.0
IQVIA Holdings	NR	--	BBB-	10.0
Mercury General	Baa2	9.0	NR	--
Vail Resorts	NR	--	NR	--
Pinnacle Foods	NR	--	BB-	13.0
Spectrum Brands	NR	--	NR	--
West Pharmac. Svcs.	NR	--	NR	--
Average	Baa2	8.6	BBB	9.4

Notes:

(1) From page 6 of Schedule DWD-4.

Source of Information:

Bloomberg Professional Services

Carolina Water Services, Inc. of North Carolina
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Seventeen Non- Price Regulated Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.56 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.31
3.	Ibbotson Equity Risk Premium based on PRPM (3)	<u>6.66</u>
4.	Average Ibbotson Equity Risk Premium	<u><u>6.51</u></u>
<u>Value Line-Based Equity Risk Premiums:</u>		
5.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	4.68
6.	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies (5)	<u>11.07</u>
7.	Average <u>Value Line</u> Equity Risk Premium	<u><u>7.87</u></u>
<u>Bloomberg-Based Equity Risk Premium:</u>		
8.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u><u>9.93</u></u>
9.	Conclusion of Equity Risk Premium (7)	8.10 %
10.	Adjusted Beta (8)	<u>0.87</u>
11.	Forecasted Equity Risk Premium	<u><u>7.05 %</u></u>

Notes:

- (1) From note 1 of page 9 of Schedule DWD-4.
- (2) From note 2 of page 9 of Schedule DWD-4.
- (3) From note 3 of page 9 of Schedule DWD-4.
- (4) From note 4 of page 9 of Schedule DWD-4.
- (5) From note 5 of page 9 of Schedule DWD-4.
- (6) From note 6 of page 9 of Schedule DWD-4.
- (7) Average of lines 4, 7, and 8.
- (8) Average of mean and median beta from page 6 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2017 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2017 and April 1, 2018
Bloomberg Professional Services

Carolina Water Services, Inc. of North Carolina
 Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Bloomberg Beta</u>	<u>Average Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate</u>	<u>ECAPM Cost Rate</u>	<u>Indicated Common Equity Cost Rate (3)</u>
ABM Industries Inc.	0.80	1.17	0.98	9.12 %	3.69 %	12.63 %	12.67 %	12.65 %
AutoZone Inc.	0.80	0.83	0.81	9.12	3.69	11.08	11.51	11.29
Cheesecake Factory	0.75	0.96	0.86	9.12	3.69	11.53	11.85	11.69
CBOE Holdings	0.70	1.11	0.91	9.12	3.69	11.99	12.19	12.09
Chemed Corp.	0.80	0.97	0.89	9.12	3.69	11.81	12.06	11.93
C.H. Robinson	0.85	0.90	0.87	9.12	3.69	11.62	11.92	11.77
Cigna Corp.	0.85	0.91	0.88	9.12	3.69	11.72	11.99	11.85
Darden Restaurants	0.85	0.91	0.88	9.12	3.69	11.72	11.99	11.85
DaVita Inc.	0.85	0.94	0.89	9.12	3.69	11.81	12.06	11.93
Forrester Research	0.70	1.06	0.88	9.12	3.69	11.72	11.99	11.85
Hormel Foods	0.75	0.61	0.68	9.12	3.69	9.89	10.62	10.26
IQVIA Holdings	0.85	1.07	0.96	9.12	3.69	12.45	12.54	12.49
Mercury General	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
Vail Resorts	0.80	0.93	0.87	9.12	3.69	11.62	11.92	11.77
Pinnacle Foods	0.80	0.71	0.75	9.12	3.69	10.53	11.10	10.82
Spectrum Brands	0.85	0.70	0.78	9.12	3.69	10.80	11.31	11.05
West Pharm. Svcs.	0.85	0.92	0.88	9.12	3.69	11.72	11.99	11.85
Mean			<u>0.86</u>			<u>11.54 %</u>	<u>11.86 %</u>	<u>11.70 %</u>
Median			<u>0.88</u>			<u>11.72 %</u>	<u>11.99 %</u>	<u>11.86 %</u>
Average of Mean and Median			<u>0.87</u>			<u>11.63 %</u>	<u>11.93 %</u>	<u>11.78 %</u>

Notes:

- (1) From Schedule DWD-5, note 1.
- (2) From Schedule DWD-5, note 2.
- (3) Average of CAPM and ECAPM cost rates.

Carolina Water Services, Inc. of North Carolina
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 29, 2018 (1) (millions)	(times larger)	Applicable Decile of the NYSE/AMEX/NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)	
1.	<u>Carolina Water Services, Inc. of North Carolina</u>	\$ 182.481	10	5.59%		
2.	<u>Proxy Group of Six Water Companies</u>	\$ 4,240.418	23.2 x	4	0.98%	4.61%

	[A]	[B]	[C]	[D]	[E]
	Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market Capitalization (millions)	Size Premium (Return in Excess of CAPM)
Largest	1	191	\$15,290,475.30	\$80,054.84	-0.35%
	2	200	\$3,010,671.02	\$15,053.36	0.61%
	3	202	\$1,609,575.62	\$7,968.20	0.89%
	4	221	\$1,010,851.81	\$4,573.99	0.98%
	5	227	\$677,120.07	\$2,982.91	1.51%
	6	259	\$541,038.00	\$2,088.95	1.66%
	7	283	\$384,129.20	\$1,357.35	1.72%
	8	361	\$297,164.94	\$823.17	2.08%
	9	487	\$212,609.64	\$436.57	2.68%
Smallest	10	790	\$92,882.17	\$117.57	5.59%

*From 2017 Stocks, Bonds, Bills, and Inflation (SBB1) 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. 1 Column 3 – Line No. 2 Column 3. For example, the 4.61% in Column 4, Line No. 2 is derived as follows 4.61% = 5.59% - 0.98%.

Carolina Water Services, Inc. of North Carolina
Market Capitalization of Carolina Water Services, Inc. of North Carolina and
Proxy Group of Six Water Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2017 (millions)	[2] Book Value per Share at Fiscal Year End 2017 (1)	[3] Total Common Equity at Fiscal Year End 2017 (millions)	[4] Closing Stock Market Price on March 29, 2018	[5] Market-to- Book Ratio on March 29, 2018 (2)	[6] Market Capitalization on March 29, 2018 (3) (millions)
<u>Carolina Water Services, Inc. of North Carolina</u>		NA	NA	\$ 60.726 (4)	NA		
<u>Based upon Proxy Group of Six Water Companies</u>						300.5 (5)	\$ 182.481 (6)
<u>Proxy Group of Six Water Companies</u>							
American States Water Co.	NYSE	36.681	\$ 14.447	\$ 529.945	\$ 53.060	367.3 %	\$ 1,946.283
American Water Works Company Inc	NYSE	178.445	30.177	\$ 5,385.000	82.130	272.2	14,655.651
Aqua America Inc	NYSE	177.714	11.016	\$ 1,957.621	34.060	309.2	6,052.937
California Water Service Group	NYSE	48.012	14.443	\$ 693.462	37.250	257.9	1,788.463
Middlesex Water Co.	NASDAQ	16.352	14.015	\$ 229.175	36.700	261.9	600.118
York Water Co.	NASDAQ	12.873	9.276	\$ 119.405	31.000	334.2	399.055
Average		<u>78.346</u>	<u>\$ 15.562</u>	<u>\$ 1,485.768</u>	<u>\$ 45.700</u>	<u>300.5 %</u>	<u>\$ 4,240.418</u>

NA= Not Available

Notes: (1) Column 3 / Column 1.

(2) Column 4 / Column 2.

(3) Column 1 * Column 4.

(4) Equals Company-requested rate base multiplied by the Company-requested equity ratio.

(5) The market-to-book ratio of Carolina Water Services, Inc. of North Carolina on March 29, 2018 is assumed to be equal to the market-to-book ratio of Proxy Group of Six Water Companies on March 29, 2018.

(6) Carolina Water Services, Inc. of North Carolina's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at March 29, 2018 of the Proxy Group of Six Water Companies, 300.5%, and Carolina Water Services, Inc. of North Carolina's market capitalization on March 29, 2018 would therefore have been \$182.48 million.

Source of Information: 2017 Annual Forms 10K
Bloomberg Financial Services

I/A
Vol. 7

* only Exs
1-4



Carolina Water Service
of North Carolina™

Clark

Appendix 1 Deborah Clark

Exhibits 1-4 Memorandums

DOCKET NO. W-354, SUB 360

Appendix 1

Exhibit 1

Villages at Nags Head Homeowners Association Meeting Memorandum

Exhibit 2

Elk River Property Owners Association Memorandum

Exhibit 3

Crestview Estates Homeowners Association Meeting Memorandum

Exhibit 4

RiverPointe Homeowners Association Meeting Memorandum

Exhibit 5

Fairfield Harbour Property Owners Association Meeting Memorandum

Exhibit 1

Docket No. W-354, Sub 360



Memorandum

To: Matthew Klein, President

From: Deborah S. Clark, Communications Coordinator

Cc: Bryce Mendenhall, Vice President of Operations
Eddie Baldwin, Area Manager

Date: July 27, 2018

Subject: Villages at Nags Head Homeowners Association Meeting
On July 13, 2018, Carolina Water Service, Inc. of North Carolina (CWSNC) representatives met with the Board of Directors of the Villages of Nags Head Homeowners Association (HOA).

Representing CWSNC was Deborah Clark, Communications Coordinator; Matt Palmiter, Lead Operator; and Bryce Mendenhall, Vice President of Operations (via conference call).

Representing the Villages of Nags Head HOA was Meade Gwinn, President; John Juzwiak, Vice President; Richard Thomas, Board Member; Laurie Battaglia, Board Member; Melvin Stone, Board Member; Traci Madonia, Board Member; Todd Farrand, Board Member; and Kelly Green, Association Manager.

CWSNC and the Villages at Nags Head HOA Board discussed the following:

1. Matt and Bryce discussed the wastewater treatment plant's membrane replacement project slated for construction in the Fall of 2018 with completion before Memorial Day 2019.

2. John questioned an odor at the wastewater treatment plant. Bryce explained the upcoming membrane project would significantly address any odor issues. Bryce stated that CWSNC has a similar project on the Outer Banks at Monterey Shores. Matt will conduct a tour for the Villages of Nags Head HOA Board of the Monterey Shores wastewater treatment plant on Tuesday, July 24, 2018.
3. Deb discussed the potential for a WordPress page to provide updates on the membrane project and other information. The page is online and contains basic information to date.
4. Deb also discussed the upcoming implementation of a new application that will allow the customers to receive notifications via text, calls, email and, importantly, a way to monitor billing and usage.

Exhibit 2

Docket No. W-354, Sub 360



Carolina Water Service
of North Carolina™

Memorandum

To: Matthew Klein, President
From: Deborah S. Clark, Communications Coordinator
Cc: Bryce Mendenhall, Vice President of
Operations Tony Konsul, Regional
Manager
Neil Reece, Area Manager

Date: February 1, 2018

Subject: Elk River POA Meeting

On Wednesday, January 24, 2018, representatives of Carolina Water Service, Inc. of North Carolina (CWSNC) met with the Elk River Property Association (POA) management team.

Representing CWSNC was Tony Konsul, Regional Manager; Neil Reece, Area Manager; and Deborah Clark, Communications Coordinator. Representing the Elk River POA were Bob Littleton, General Manager; Brad Benfield, Assistant General Manager; and Amy Harris, Condominium Associate Manager.

CWSNC and the Elk River POA discussed the following:

1. Tony Konsul, Regional Manager, introduced Neil Reece as the new Area Manager supervising the Elk River systems.
2. Bob Littleton, General Manager, asked about the height of the meter boxes where some are deeper than others and could these meter boxes be insulated to prevent freezing. Neil stated he would send someone to work with the Elk River maintenance staff to insulate designated meter boxes.
3. Bob asked if CWSNC could look at meters under Elk Knob Building A where some fittings had blown off. Once residents return and begin using water, there may be issues. Neil stated he would inspect the fittings and send staff to replace any, if necessary.
4. Bob discussed how he and the Elk River staff assist residents with issues before any problems reach CWSNC, including educating residents on flat rates versus new usage-based rates.

5. Deb Clark, Communications Coordinator, will play a proactive role in deployment of social media and new communication tools. CWSNC is now on Facebook and Twitter. CWSNC plans to introduce a customer-friendly application later this year that will allow customers to receive information through various methods and monitor customer-related information. An Elk River website has been developed and shared with the Elk River management staff. The CWSNC-related website will update and inform residents on a variety of issues and topics. The link will be placed on the Elk River website and emailed to all residents.

6. Deb will also play a role in direct communications around water issues. If any water committee member or other board members know of any problems or concerns that are not being resolved, she can be contacted for a resolution to issues promptly.

Exhibit 3

Docket No. W-354, Sub 360



Carolina Water Service
of North Carolina™

Memorandum

To: Matthew Klein, President
From: Deborah S. Clark, Communications
Coordinator Cc: Bryce Mendenhall, Vice President of
Operations Tony Konsul, Regional
Manager
Neil Reece, Area Manager

Date: June 11, 2018

Subject: Crestview Estates Home Owners Association Meeting

On Sunday, June 3, 2018, representatives of Carolina Water Service, Inc. of North Carolina (CWSNC) met with the Crestview Estates (Crestview) Home Owners Association (HOA) Board of Directors.

Representing CWSNC was Neil Reece, Area Manager; and Deborah Clark, Communications Coordinator. Representing Crestview HOA was Brantley Briley, President; Scott Mayes, Vice President; Amanda Roberts, Secretary; Preston Mays, Treasurer; Linda Yaeger, Board Member; and Chris Tallent, Board Member.

CWSNC and the Crestview HOA Board of Directors discussed the following:

1. Neil provided an update on the condition of the well, average usage, and water production.
2. Neil answered questions about the potential purchase of property and ownership of a new well within Crestview; the process for the installation of a new well; and the ownership of adjacent property to the current well.
3. Deb discussed the potential for water conservation efforts, including drought-resistant plants, water-saving faucets for the kitchen and bath, and rain barrels.

4. Deb described her role in the deployment of social media and other new communication tools. CWSNC is now on Facebook, Twitter, and Instagram. CWSNC plans to introduce a customer- friendly application later this year that will allow customers to receive information through various methods and monitor their own customer-related information.

5. Deb will also play a role in direct communications around water issues. If any water committee member or other board members know of any problems or concerns that are not being resolved, she can be contacted to promptly resolve issues.

Exhibit 4

Docket No. W-354, Sub 360



Memorandum

To: Matthew Klein, President

From: Jack Jones, Area Manager

cc: Bryce Mendenhall, Vice-President of Operations
Tony Konsul, Regional Manager
Deborah Clark, Communications Coordinator

Date: March 26, 2018

Subject: RiverPointe Homeowners Association Meeting

On Monday, March 19, 2018, at 6:30 p.m., Carolina Water Service, Inc. of North Carolina (CWSNC) attended the RiverPointe Homeowners Association (HOA) meeting hosted by the community's management company, Association Management Solutions, Inc.

Representing CWSNC was Jack Jones, Area Manager; and Deborah Clark, Communications Coordinator. Representing the RiverPointe HOA Board of Directors was President, Tom Blocker; Vice President, Scott St. John; Secretary, Angie Knight; Treasurer, Colin Hunt; At-Large Member, Kris Kennemore; and Pamela Hallisey of Association Management Solutions, Inc.

CWSNC provided the following update:

1. Jack discussed the status of the on-going effluent pipe lowering project adjacent to Lake Wylie. Jack reviewed the status of the required

governmental permits associated with the project which require approval by Duke Energy, the North Carolina Department of Environmental Quality (DEQ) and the Federal Energy Regulatory Commission (FERC). The timeframe for construction is determined upon receipt of the above approvals. Residents can anticipate seeing the following associated with the removal and construction of the effluent pipe: a stationary barge on Lake Wylie with equipment for silt removal; silt bags that will be placed in a designated area; trucks and assorted equipment, including backhoes, Bobcats (small bulldozer/dirt removal machines), or tractors.

2. Deborah will produce a one-page fact sheet on the project to help answer questions and alleviate inquiries about the project for the HOA Board and the Management Company. This fact sheet will be provided by June 1, 2018.
3. Deborah has developed and published a WordPress website for the RiverPointe community in correlation with the above fact sheet to provide up-to-date information concerning CWSNC's service to the RiverPointe community.
4. Questions posed by the HOA about the availability, installation, and costs of irrigation meters were answered by Jack.



Carolina Water Service
of North Carolina™

Appendix 2 Deborah Clark

Exhibits A1-A3 Employee Spotlights

DOCKET NO. W-354, SUB 360

Appendix 2

Exhibit A-1

Employee Spotlight Bryan Allen

Exhibit A-2

Employee Spotlight Travis Thomas

Exhibit A-3

Employee Spotlight Stacy Goff

Carolina Water Service, Inc. of North Carolina Employee Spotlight



Bryan Allen is a Wastewater Operator 1 for Carolina Water Service of North Carolina. He is located in the Outer Banks area primarily in Nags Head, North Carolina. He works on the Eastern Regional team for Area Manager, Eddie Baldwin.

You will see him serve our customers throughout many communities including the Villages at Nags Head and Monterey Shores. We asked Bryan a few questions to learn more about what his job entails, how he sees his role with CWSNC, and how he spends his spare time.

What is your role with CWSNC?

Currently, I work in the Nags Head area of the Outer Banks with Matt Palmiter. I travel between our wastewater system in Nags Head where we provide service to several hundred residential customers and approximately 30 commercial customers to Monterey Shores where we have several hundred water and wastewater customers.

What do you like about your job?

I really like the opportunity to grow and learn. Working at CWSNC is an actual career and not just a job.

What do you do in your spare time away from working for CWSNC?

I enjoy spending time with my wife binge watching television shows. I also love going to the beach and the gym.

Bryan is a military veteran having served in the United States Marine Corps. His main duties included work in water and wastewater at Camp Lejune in Jacksonville, North Carolina.



Carolina
Water Service
of North Carolina™

Carolina Water Service, Inc. of North Carolina Employee Spotlight



**Carolina
Water Service**
of North Carolina™

Travis S. Thomas is a Water/Wastewater Operator 1 for Carolina Water Service of North Carolina. He is in the Banner Elk area in western North Carolina and works on Area Manager, Ronnie Reece's team. Travis has been employed with CWSNC for six years and holds both B-Well B-Distribution and Grade 2 Waste Water designations. Travis serves our customers throughout many communities including Ski Country and Sugar Mountain. We asked Travis a few questions to learn more about what his job entails, how he sees his role with CWSNC, and how he spends his spare time.

What is your role with CWSNC?

Currently, I serve as the ORC of Sugar Mountain. I work on the "Mountain" with my fellow CWSNC employee, Chris Childress. Our tasks include logging the status of the wells, completing service orders, logging lift station status, checking boosters and maintaining the system. We have 24 wells, 5 booster stations, and 8 lift stations. I also interact with our customers to help resolve their complaints as needed by Customer Service or Management.

What do you like about your job?

I really like what I do! It's always something new every day when you come in! We provide water and wastewater services to great people!

What do you do in your spare time away from working for CWSNC?

I am married and have a three-year-old son (this one is all boy) who loves to play in the dirt. He loves any type of dirt-moving equipment, dirt bikes and tales of my hunting trips. He is our world. My wife, who is a Licensed Practical Nurse, recently accepted a job located near our office. We are big-time Carolina Panthers fans. Faith plays a key role in our life and we attend church every Sunday. We consider ourselves to be beyond blessed!

Carolina Water Service, Inc. of North Carolina Employee Spotlight



Stacy A. Goff is a Lead Operator for Carolina Water Service of North Carolina. He is located in the Morehead City area. Stacy has been with CWSNC for nine years and previously in Louisiana. You will see him serve our customers throughout many communities including Brandywine Bay, Hestron Park, Carolina Pines, Regalwood, Fairfield Harbor, and White Oak Estates. We asked Stacy a few questions to learn more about what his job entails, how he sees his role with CWSNC, and how he spends his spare time.

What is your role with CWSNC?

Currently, as Lead Operator, I assist the area manager in training, evaluating plants for operational effectiveness, as well as safety. I oversee that proper techniques are used when sampling. I oversee NC 811 webTMS for unassigned tickets. I assist other operators in running plants, troubleshooting problems they may have, as well as operating my assigned plants. I handle customer complaints as needed by Customer Service or Management.

What do you like about your job?

One of the best things I like about my job is educating our customers about the various aspects of the water and wastewater industry. I also enjoy attending different meetings within the utility industry, such as our NC Utility Coordinating Committee meetings (NC 811), the NCWOA section meetings.

What do you want to see in the future for CWSNC?

I want customers, as well as regulators, to know that when they see a CWSNC employee they are confident that they are getting top-notch service; an employee with a vast knowledge of compliance regulations related to the industry. I want our company to keep up with or better yet, be a leader in using technology to keep the environment safe and life of an operator easier while better serving our customers.

FILED

SEP 05 REC'D

Clerk's Office
N.C. Utilities Commission

I/A
Vol. 7

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

DOCKET NO. W-354, SUB 360

Linneman EXHIBIT 1 - PROPOSED SCHEDULE OF RATES (INCLUDING 5 APPENDICES)
(as adopted by Mr. DeStefano)

SCHEDULE OF RATES

for

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

for providing water and sewer utility service

in

ALL OF ITS SERVICE AREAS IN NORTH CAROLINA

(excluding Corolla Light, Monterey Shores, Fairfield Harbour Service Area, Treasure Cove, Register Place Estates, North Hills and Glen Arbor/North Bend Subdivisions, Bradfield Farms, Larkhaven, Silverton and Woodland Farms Subdivisions and Hawthorne at the Green Apartments

WATER RATES AND CHARGES

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1" meter	\$ 28.16
1" meter	\$ 70.39
1 1/2" meter	\$ 140.79
2" meter	\$ 225.26
3" meter	\$ 422.36
4" meter	\$ 703.93
6" meter	\$1,408.87

Usage Charge:

A. Treated Water, per 1,000 gallons	\$ 8.87
B. Untreated Water, per 1,000 gallons (Brandywine Bay Irrigation Water)	\$ 4.11

C. Purchased Water for Resale, per 1,000 gallons:

<u>Service Area</u>	<u>Bulk Provider</u>		
Carolina Forest	Montgomery County	\$	3.19
High Vista Estates	City of Hendersonville	\$	3.25
Riverpointe	Charlotte Water	\$	6.30
Whispering Pines	Town of Southern Pines	\$	2.23
White Oak Plantation/ Lee Forest	Johnston County	\$	2.28
Winston Plantation	Johnston County	\$	2.28
Winston Point	Johnston County	\$	2.28
Woodrun	Montgomery County	\$	3.19
Yorktown	City of Winston-Salem	\$	5.01
Zemosa Acres	City of Concord	\$	5.27
Carolina Trace	City of Sanford	\$	2.21

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

When because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit or other structure separately, the following will apply:

Sugar Mountain Service Area:

Where service to multiple units or other structures is provided through a single meter, the average usage for each unit or structure served by that meter will be calculated. Each unit or structure will be billed based upon that average usage plus the base monthly charge for a <1" meter.

Mount Mitchell Service Area:

Service will be billed based upon the Commission-approved monthly flat rate.

Monthly Flat Rate Water Service: (Billed in Arrears) \$ 54.67

Availability Rate: (Semiannual)

Applicable only to property owners in Carolina Forest and Woodrun Subdivisions in Montgomery County \$ 24.65

Availability Rate: (Monthly)

Applicable only to property owners in Linville Ridge
Subdivision \$ 12.35

Availability Rate: (Monthly)

Applicable only to property owners in Fairfield Sapphire
Valley Service Area \$ 9.10

Availability Rate: (Monthly)

Applicable only to property owners in Connestee Falls \$ 4.80

Meter Testing Fee:^{1/} \$ 20.00

New Water Customer Charge: \$ 27.00

Reconnection Charge:^{2/}

If water service is cut off by utility for good cause \$ 27.00
If water service is discontinued at customer's request \$ 27.00

Reconnection Charge:^{3/} (Flat-rate water customers)

If water service is cut off by utility for good cause Actual Cost

Management Fee: (in the following subdivisions only)

Wolf Laurel \$150.00
Covington Cross Subdivision (Phases 1 & 2) \$100.00

Oversizing Fee: (in the following subdivision only)

Winghurst \$400.00

Meter Fee:

For <1" meter \$ 50.00
For meters 1" or larger Actual Cost

Irrigation Meter Installation: Actual Cost

SEWER RATES AND CHARGES

Monthly Metered Sewer Service:

A. Base Facility Charge:

Residential (zero usage)	\$ 50.10
Commercial (based on meter size with zero usage)	
< 1" meter	\$ 50.10
1" meter	\$ 125.25
1 1/2" meter	\$ 250.50
2" meter	\$ 400.80
3" meter	\$ 751.50
4" meter	\$1,252.50
6" meter	\$2,504.99

B. Usage Charge, per 1,000 gallons (based on metered water usage)	\$ 3.39
--	---------

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

Monthly Metered Purchased Sewer Service:

Collection Charge (Residential and Commercial/per SFE (Single Family Equivalent))	\$ 40.05
--	----------

Usage charge, per 1,000 gallons based on purchased water consumption

<u>Service Area</u>	<u>Bulk Provider</u>	
White Oak Plantation/ Lee Forest/Winston Pt.	Johnston County	\$ 4.82
Kings Grant	Two Rivers Utilities	\$ 3.80
College Park	Town of Dallas	\$ 5.70

<u>Monthly Flat Rate Sewer Service:</u>	\$ 61.65
---	----------

Multi-residential customers who are served by a master meter shall be charged the flat rate per unit.	\$ 61.65
---	----------

Mt. Carmel Subdivision Service Area:

Monthly Base Facility Charge	\$ 6.77
Monthly Collection Charge (Residential and Commercial/SFE)	\$ 40.05
Usage Charge, per 1,000 gallons based on purchased water consumption	\$ 5.88

Regalwood and White Oak Estates Subdivision Service Areas:

Monthly Flat Rate Sewer Service	
Residential Service	\$ 61.65
White Oak High School	\$1,929.12
Child Castle Daycare	\$ 239.66
Pantry	\$ 127.29

Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald) Service Area and Highland Shores Subdivision

Monthly Sewer Rates:

Residential	
Collection charge/dwelling unit	\$ 40.05
Treatment charge/dwelling unit	\$ 69.50
Total monthly flat rate/dwelling unit	<u>\$ 109.55</u>

Commercial and Other:

Minimum monthly collection and treatment charge \$ 109.55

Monthly collection and treatment charge for customers
who do not take water service (per SFE) \$ 109.55

Treatment charge per dwelling unit

Small (less than 2,500 gallons per month)	\$ 78.50
Medium (2,500 to 10,000 gallons per month)	\$ 139.50
Large (over 10,000 gallons per month)	\$ 219.50

Collection Charge (per 1,000 gallons) \$ 13.93

Availability Rate: (Monthly)

Applicable only to property owners in Fairfield Sapphire Valley Service Area \$ 8.30

Availability Rate: (Monthly)

Applicable only to property owners in Connetsee Falls \$ 4.70

New Sewer Customer Charge: ^{4/} \$ 27.00

Reconnection Charge: ^{5/}

If sewer service is cut off by utility for good cause Actual Cost

MISCELLANEOUS UTILITY MATTERS

Charge for processing NSF Checks: \$ 25.00

Bills Due: On billing date

Bills Past Due: 21 days after billing date

Billing Frequency: Bills shall be rendered monthly in all service areas, except for Mt. Carmel, which will be billed bimonthly.

Availability rates will be billed quarterly in advance for Connetsee Falls, semiannually in advance for Carolina Forest, Woodrun, and Fairfield Sapphire Valley, and monthly for Linville Ridge.

Finance Charge for Late Payment: 1% per month will be applied to the unpaid balance of all bills still past due 25 days after billing date.

Notes:

^{1/} If a customer requests a test of a water meter more frequently than once in a 24-month period, the Company will collect a \$20.00 service charge to defray the cost of the test. If the meter is found to register in excess of the prescribed accuracy limits, the meter testing charge will be waived. If the meter is found to register accurately or below prescribed accuracy limits, the charge shall be retained by the Company. Regardless of the test results, customers may request a meter test once in a 24-month period without charge.

^{2/} Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

^{3/} The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to customer with cut-off notice.

^{4/} This charge shall be waived if customer is also a water customer within the same service area.

^{5/} The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to the customer with the cut-off notice. This charge will be waived if customer also receives water service from Carolina Water Service within the same service area. Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA
SCHEDULE OF CONNECTION FEES
FOR WATER UTILITY SERVICE UNDER UNIFORM RATES

Uniform Connection Fees: ^{1/}

The following uniform connection fees apply unless specified differently by contract approved by and on file with the North Carolina Utilities Commission.

Connection Charge (CC), per SFE (Single Family Equivalent)	\$ 100.00
Plant Modification Fee (PMF), per SFE	\$ 400.00

The systems where connection fees other than the uniform fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows. These fees are per SFE:

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Abington	\$ 0.00	\$ 0.00
Abington, Phase 14	\$ 0.00	\$ 0.00
Amherst	\$ 250.00	\$ 0.00
Bent Creek	\$ 0.00	\$ 0.00
Blue Mountain at Wolf Laurel	\$ 925.00	\$ 0.00
Buffalo Creek, Phase I, II, III, IV	\$ 825.00	\$ 0.00
Carolina Forest	\$ 0.00	\$ 0.00
Chapel Hills	\$ 150.00	\$ 400.00
Eagle Crossing	\$ 0.00	\$ 0.00
Forest Brook/Old Lamp Place	\$ 0.00	\$ 0.00
Harbour	\$ 75.00	\$ 0.00
Hestron Park	\$ 0.00	\$ 0.00
Hound Ears	\$ 300.00	\$ 0.00
Kings Grant/Willow Run	\$ 0.00	\$ 0.00
Lemmond Acres	\$ 0.00	\$ 0.00
Linville Ridge	\$ 400.00	\$ 0.00
Monterrey (Monterrey LLC)	\$ 0.00	\$ 0.00
Quail Ridge	\$ 750.00	\$ 0.00
Queens Harbour/Yachtsman	\$ 0.00	\$ 0.00
Riverpointe	\$ 300.00	\$ 0.00
Riverpointe (Simonini Bldrs.)	\$ 0.00	\$ 0.00
Riverwood, Phase 6E (Johnston County)	\$ 825.00	\$ 0.00
Saddlewood/Oak Hollow (Summey Bldrs.)	\$ 0.00	\$ 0.00

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Sherwood Forest	\$ 950.00	\$ 0.00
Ski Country	\$ 100.00	\$ 0.00
White Oak Plantation	\$ 0.00	\$ 0.00
Wildlife Bay	\$ 870.00	\$ 0.00
Willowbrook	\$ 0.00	\$ 0.00
Winston Plantation	\$1,100.00	\$ 0.00
Winston Pointe, Phase 1A	\$ 500.00	\$ 0.00
Wolf Laurel	\$ 925.00	\$ 0.00
Woodrun	\$ 0.00	\$ 0.00
Woodside Falls	\$ 500.00	\$ 0.00

Other Connection Fees:

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

Amber Acres, Amber Acres North, Amber Ridge, Ashley Hills North, Bishop Pointe, Carriage Manor, Country Crossing, Covington Cross, Heather Glen, Hidden Hollow, Jordan Woods, Lindsey Point, Neuse Woods, Oakes Plantation, Randsdell Forest, Rutledge Landing, Sandy Trails, Stewart's Ridge, Tuckahoe, Wilder's Village, and Forest Hill Subdivisions

Connection Charge:

- | | |
|--------------------------|---------------------------------------|
| A. 5/8" meter | \$ 500.00 |
| B. All other meter sizes | Actual cost of meter and installation |

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows.

<u>Subdivision</u>	<u>CC</u>
Lindsey Point Subdivision	\$ 0.00
Amber Acres North, Sections II & IV	\$ 570.00
Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald) Service Area	\$ 500.00
Highland Shores Subdivision	\$ 500.00
Laurel Mountain Estates	\$ 0.00
Carolina Trace	\$ 605.00
Connestee Falls	\$ 600.00

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

All Areas Except Holly Forest XI, Holly Forest XIV, Holly Forest XV, Whisper Lake I, Whisper Lake II, Whisper Lake III, Deer Run, Lonesome Valley Phases I and II, and Chattooga Ridge

Recoupment of Capital Fee (RCF) ^{2/}	\$ 0.00
Connection Charge	\$ 400.00

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows:

<u>Subdivision</u>	<u>CC</u>	<u>RCF</u>
Holly Forest XI	\$ 400.00	\$2,400.00
Holly Forest XIV	\$ 400.00	\$ 250.00
Holly Forest XV	\$ 400.00	\$ 500.00
Whispering Lake Phase I	\$ 400.00	\$1,250.00
Whispering Lake Phases II and III	\$ 400.00	\$2,450.00
Deer Run	\$ 400.00	\$1,900.00
Lonesome Valley Phases I and II	\$ 0.00	\$ 0.00
Chattooga Ridge	\$ 0.00	\$ 0.00

^{1/} These fees are only applicable one time, when the unit is initially connected to the system.

^{2/} The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the connection charge for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

Issued in Accordance with Authority Granted by the North Carolina Utilities Commission in Docket No. W-354, Sub 360, on this the ____ day of _____, 2018.

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

SCHEDULE OF CONNECTION FEES FOR

SEWER UTILITY SERVICE UNDER UNIFORM RATES

Uniform Connection Fees: ^{1/}

The following uniform connection fees apply unless specified differently by contract approved by and on file with the North Carolina Utilities Commission.

Connection Charge (CC), per SFE (Single Family Equivalent)	\$ 100.00
Plant Modification Fee (PMF), per SFE	\$1,000.00

The systems where connection fees other than the uniform fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows. These fees are per SFE:

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Abington	\$ 0.00	\$ 0.00
Abington, Phase 14	\$ 0.00	\$ 0.00
Amber Acres North (Phases II & IV)	\$ 815.00	\$ 0.00
Ashley Hills	\$ 0.00	\$ 0.00
Amherst	\$ 500.00	\$ 0.00
Bent Creek	\$ 0.00	\$ 0.00
Brandywine Bay	\$ 100.00	\$1,456.00
Camp Morehead by the Sea	\$ 100.00	\$1,456.00
Hammock Place	\$ 100.00	\$1,456.00
Hestron Park	\$ 0.00	\$ 0.00
Hound Ears	\$ 30.00	\$ 0.00
Independent/Hemby Acres/Beacon Hills (Griffin Bldrs.)	\$ 0.00	\$ 0.00
Kings Grant/Willow Run	\$ 0.00	\$ 0.00
Kynwood	\$ 0.00	\$ 0.00
Mt. Carmel/Section 5A	\$ 500.00	\$ 0.00
Queens Harbor/Yachtsman	\$ 0.00	\$ 0.00
Riverpointe	\$ 300.00	\$ 0.00
Riverpointe (Simonini Bldrs.)	\$ 0.00	\$ 0.00
Steeplechase (Spartabrook)	\$ 0.00	\$ 0.00
White Oak Plantation	\$ 0.00	\$ 0.00
Willowbrook	\$ 0.00	\$ 0.00

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Willowbrook (Phase 3)	\$ 0.00	\$ 0.00
Winston pointe (Phase 1A)	\$2,000.00	\$ 0.00
Woodside Falls	\$ 0.00	\$ 0.00

Other Connection Fees:

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows:

<u>Subdivision</u>	
Carolina Pines	
Residential	\$1,350.00 per unit (including single-family homes, condominiums, apartments, and mobile homes)
Hotels	\$750.00 per unit
Non-residential	\$3.57 per gallon of daily design of discharge or \$900.00 per unit, whichever is greater

<u>Subdivision</u>	<u>CC</u>
Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald)	
Service Area	\$ 550.00
Highland Shores	\$ 550.00
Carolina Trace	\$ 533.00
Connestee Falls	\$ 400.00

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

All Areas Except Holly Forest XIV, Holly Forest XV, Deer Run, and Lonesome Valley Phases I and II

Recoupment of Capital Fee (RCF) ^{2/}	\$ 0.00
Connection Charge	\$ 550.00

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows:

<u>Subdivision</u>	<u>CC</u>	<u>RCF</u>
Holly Forest XIV	\$ 550.00	\$1,650.00
Holly Forest XV	\$ 550.00	\$ 475.00
Deer Run	\$ 550.00	\$1,650.00
Lonesome Valley Phases I and II	\$ 0.00	\$ 0.00

^{1/} These fees are only applicable one time, when the unit is initially connected to the system.

^{2/} The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the connection charge for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

Issued in Accordance with Authority Granted by the North Carolina Utilities Commission in Docket No. W-354, Sub 360, on this the _____ day of _____, 2018.

SCHEDULE OF RATES

for

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

for providing sewer utility service

in

COROLLA LIGHT AND MONTERAY SHORES SERVICE AREA

SEWER RATES AND CHARGES

Monthly Metered Sewer Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1" meter	\$ 52.06
1" meter	\$ 130.15
1 1/2" meter	\$ 260.31
2" meter	\$ 416.49
3" meter	\$ 780.92
4" meter	\$1,301.54
6" meter	\$2,603.07

Usage Charge, per 1,000 gallons
(based on purchased water usage) \$ 6.62

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

New Sewer Customer Charge: \$ 21.92

Reconnection Charge: ^{1/}

If sewer service cut off by utility for good cause Actual Cost

Uniform Connection Fees: ^{2/}

The following uniform connection fees apply unless specified differently by contract approved by and on file with the North Carolina Utilities Commission.

Connection Charge (CC), per SFE (Single Family Equivalent)	\$ 100.00
Plant Modification Fee (PMF), per SFE	\$1,000.00

The systems where connection fees other than the uniform fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows. These fees are per SFE:

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Corolla Light	\$ 700.00	\$ 0.00
Monteray Shores	\$ 700.00	\$ 0.00
Monteray Shores (Degabrielle Bldrs.)	\$ 0.00	\$ 0.00
Corolla Bay ^{3/}	\$ 100.00	\$1,000.00
Corolla Bay ^{4/}	\$ 700.00	\$ 0.00
Corolla Shores	\$ 700.00	\$ 0.00

One SFE shall equal 360 gallons per day of capacity.

MISCELLANEOUS UTILITY MATTERS

<u>Charge for processing NSF Checks:</u>	\$ 24.91
<u>Bills Due:</u>	On billing date
<u>Bills Past Due:</u>	21 days after billing date
<u>Billing Frequency:</u>	Bills shall be rendered monthly
<u>Finance Charge for Late Payment:</u>	1% per month will be applied to the unpaid balance of all bills still past due 25 days after billing date.

Notes:

^{1/} The Utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish the estimate to the customer with the cut-off notice.

Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

^{2/} These fees are only applicable one time, when the unit is initially connected to the system.

^{3/} The connection charge of \$100 per SFE and the plant modification fee of \$1,000 per SFE specified herein apply to new wastewater connections requested at Corolla Bay prior to June 4, 2015.

^{4/} The connection charge of \$700 per SFE applies to new wastewater connections requested at Corolla Bay on and after June 4, 2015.

SCHEDULE OF RATES

for

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

for providing water and sewer utility service

in

TREASURE COVE, REGISTER PLACE ESTATES, NORTH HILLS, GLEN
ARBOR/NORTH BEND SUBDIVISIONS, FAIRFIELD HARBOUR SERVICE AREA,
BRADFIELD FARMS SUBDIVISION, LARKHAVEN SUBDIVISION, SILVERTON AND
WOODLAND FARMS SUBDIVISIONS AND HAWTHORNE AT THE GREEN
APARTMENTS

WATER RATES AND CHARGES

Monthly Metered Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1" meter	\$ 18.08
1" meter	\$ 45.21
1 1/2" meter	\$ 90.42
2" meter	\$ 144.67
Usage Charge, per 1,000 gallons	\$ 4.92

Availability Rate: (Monthly)

Applicable only to property owners in Fairfield Harbour Service Area	\$ 3.28
---	---------

Connection Charge:

Treasure Cove Subdivision	\$ 0.00
North Hills Subdivision	\$ 100.00
Glen Arbor/North Bend Subdivision	\$ 0.00
Register Place Estates	\$ 500.00

Fairfield Harbor: ^{1/}

All Areas Except Harbor Pointe II Subdivision

Recoupment of capital fees per tap	\$ 335.00
Connection charge per tap	\$ 140.00

Harbor Pointe Subdivision and any area where mains have been installed after July 24, 1989

Recoupment of capital fee per tap	\$ 650.00
Connection charge per tap	\$ 320.00

Bradfield Farms:

Connection charge per tap	None
---------------------------	------

<u>Meter Testing Fee:</u> ^{2/}	\$ 20.00
---	----------

<u>New Water Customer Charge:</u>	\$ 27.00
-----------------------------------	----------

Reconnection Charge: ^{3/}

If water service is cut off by utility for good cause	\$ 27.00
If water service is discontinued at customer's request	\$ 27.00

<u>New Meter Charge:</u>	Actual Cost
--------------------------	-------------

<u>Irrigation Meter Installation:</u>	Actual Cost
---------------------------------------	-------------

SEWER RATES AND CHARGES

Monthly Sewer Service:

Residential:

Flat Rate, per dwelling unit	\$ 50.81
Bulk Flat Rate, per REU	\$ 50.81

Commercial and Other:

Monthly Flat Rate (Customers who do not take water service)	\$ 50.81
--	----------

Monthly Metered Rates
(based on meter size with zero usage)

<1" meter	\$ 13.65
1 1/2" meter	\$ 68.24
2" meter	\$ 109.18

Usage Charge, per 1,000 gallons \$ 6.36

Bulk Sewer Service for Hawthorne at the Green Apartments: ^{4/}

Bulk Flat Rate, per REU \$ 49.81 per month

(To be collected from Hawthorne and delivered to Carolina Water Service, Inc. of North Carolina for treatment of the Hawthorne wastewater pursuant to Docket No. W-218, Sub 291.)

Availability Rate: (Monthly)

Applicable only to property owners in Fairfield Harbour Service Area \$ 2.65

Connection Charge:

Fairfield Harbour: ^{1/}

All Areas Except Harbor Pointe II Subdivision

Recoupment of capital fees per tap	\$ 735.00
Connection charge per tap	\$ 140.00

Harbor Pointe Subdivision and any area where mains have been installed after July 24, 1989

Recoupment of capital fee per tap	\$ 2,215.00
Connection charge per tap	\$ 310.00

Bradfield Farms:

Connection charge per tap None

New Sewer Customer Charge: ^{5/} \$ 27.00

Reconnection Charge:^{6/}

If sewer service is cut off by utility for good cause

Actual Cost

MISCELLANEOUS UTILITY MATTERS

Charge for processing NSF Checks:

\$ 25.00

Bills Due:

On billing date

Bills Past Due:

21 days after billing date

Billing Frequency:

Bills shall be monthly for service in arrears.

Availability billings semiannually in advance.

Finance Charge for Late Payment:

1% per month will be applied to the unpaid balance of all bills still past due 25 days after billing date.

Notes:

^{1/} The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the connection charge for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

^{2/} If a customer requests a test of a water meter more frequently than once in a 24-month period, the Company will collect a \$20.00 service charge to defray the cost of the test. If the meter is found to register in excess of the prescribed accuracy limits, the meter testing charge will be waived. If the meter is found to register accurately or below prescribed accuracy limits, the charge shall be retained by the Company. Regardless of the test results, customers may request a meter test once in a 24-month period without charge.

^{3/} Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

^{4/} Each Apartment building will be considered 92.42% occupied on an ongoing basis for billing purposes as soon as the certificate of occupancy is issued for that apartment building.

^{5/} This charge shall be waived if customer is also a water customer within the same service area.

^{6/} The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to the customer with the cut-off notice. This charge will be waived if customer also receives water service from Carolina Water Service within the same service area. Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

REGRESSION ANALYSIS OF ALLOWED RETURNS ON EQUITY

<i>Regression Statistics</i>	
Multiple R	0.87772
R Square	0.77039
Adjusted R Square	0.74952
Standard Error	0.00142
Observations	13

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	7.48492E-05	7.48492E-05	37.952701	7.10034E-05
Residual	11	2.16939E-05	1.97217E-06		
Total	12	9.65431E-05			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.086038	0.002157	39.885740	0.000000
X Variable 1	0.260653	0.042905	6.075145	0.000080

Moody's A-Rated Public Utility Bond Yield	
May-18	4.09%
Jun-18	4.17%
Jul-18	4.28%
Aug-18	4.27%
Jul-18	4.27%
Aug-18	4.26%
Average	4.22%

Predicted Cost of Equity **9.70%**

Note:

Predicted Cost of Equity of 9.70% = 0.086038 + 0.260653 x 4.22%.

I/A
vol. 7

Public Staff
Hinton Exhibit JRH-5
Docket No. W-354, Sub 360

Carolina Water Service, Inc. of North Carolina
Cost of Capital as of June 30, 2018

Item	Ratios	Cost Rate	Weighted Cost Rate	Pre-Tax Cost of Capital
Long-Term Debt	54.92%	5.87%	3.22%	3.22%
Common Equity	45.08%	9.20%	4.15%	5.42%
Total	100.00%		7.37%	8.64%

Pre-Tax Interest Coverage 3.7

I/A
Vol. 7

Public Staff
Supplemental Hinton Exhibit JRH-5
Docket No. W-354, Sub 360

Carolina Water Service, Inc. of North Carolina
Cost of Capital as of June 30, 2018

Item	Ratios	Cost Rate	Weighted Cost Rate	Pre-Tax Cost of Capital ¹
Long-Term Debt	49.09%	5.68%	2.79%	2.79%
Common Equity	50.91%	9.20%	4.68%	6.12%
Total	100.00%		7.47%	8.91%

Pre-Tax Interest Coverage ²	3.2
Funds Flow to Debt ³	26.0%

Note:

- ¹ The pre-tax cost of debt and equity is grossed up by tax retention factors.
- ² Pre-Tax Interest Coverage: 3.2 = 8.91 / 2.79
- ³ Funds Flow to Debt = (Recommended rate base*weighted debt cost rate) / (Net Income for Return + Depreciation + Amortization-Deferred taxes), Public Staff Henry Supp. Exhibit 1, 26% = (\$104,513,271*2.79%) / (7,809,265+5,149,485-1,547,356-132,758-519-83,570).

I/A
vol. 7

FILED

OCT 15 REC'D

Clerk's Office
N.C. Utilities Commission

Carolina Water Service, Inc. of North Carolina
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at June 30, 2018

<u>Type Of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	49.09%	5.68% (1)	2.79%
Common Equity	<u>50.91%</u>	10.80% - 11.20% (2)	<u>5.50%</u> - <u>5.70%</u>
Total	<u>100.00%</u>		<u>8.29%</u> <u>8.49%</u>

Notes:

- (1) Company-Provided.
- (2) From page 2 of this Schedule.

Carolina Water Service, Inc. of North Carolina
Brief Summary of Common Equity Cost Rate

<u>Line No.</u>	<u>Principal Methods</u>	<u>Proxy Group of Six Water Companies</u>
1.	Discounted Cash Flow Model (DCF) (1)	9.15%
2.	Risk Premium Model (RPM) (2)	10.73%
3.	Capital Asset Pricing Model (CAPM) (3)	10.93%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>12.43%</u>
5.	Indicated Common Equity Cost Rate before Adjustment for Size Risk	10.80%
6.	Size Risk Adjustment (5)	<u>0.40%</u>
7.	Recommended Range of Common Equity Cost Rates	<u><u>10.80%-11.20%</u></u>

- Notes: (1) From page 3 of this Schedule.
(2) From page 10 of this Schedule.
(3) From page 21 of this Schedule.
(4) From page 26 of this Schedule.
(5) From Schedule DWD-8 (direct testimony).

Carolina Water Service, Inc. of North Carolina
 Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Six 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.	1.83 %	6.00 %	NA %	6.00 %	4.00 %	5.33 %	1.88 %	7.21 %
American Water Works Company Inc	2.07	10.00	9.73	7.60	8.10	8.91	2.16	11.07
Aqua America Inc	2.38	7.50	9.00	5.30	5.00	6.70	2.46	9.16
California Water Service Group	1.82	9.50	NA	7.00	9.80	8.77	1.90	10.67
Middlesex Water Co.	1.97	8.00	NA	NA	2.70	5.35	2.02	7.37
York Water Co.	2.18	9.00	NA	NA	4.90	6.95	2.26	9.21
							Average	9.11 %
							Median	9.18 %
						Average of Mean and Median		9.15 %

NA= Not Available

Notes:

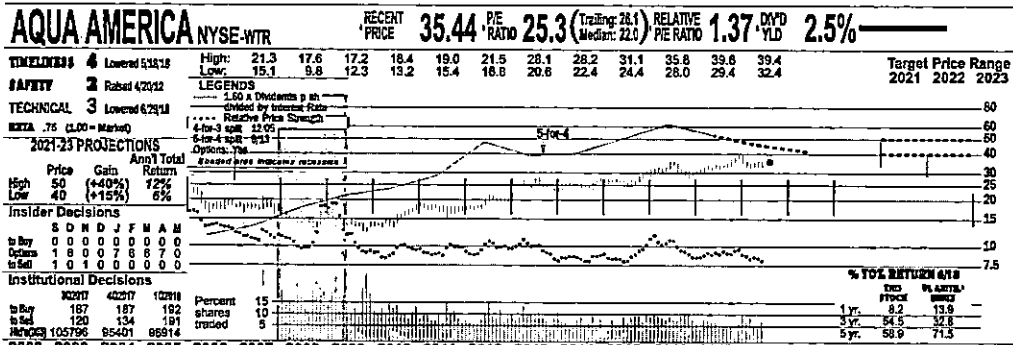
- (1) Indicated dividend at 09/28/2018 divided by the average closing price of the last 60 trading days ending 09/28/2018 for each company.
- (2) From pages 4 through 9 of this Schedule.
- (3) Average of columns 2 through 5 excluding negative growth rates.
- (4) This reflects a growth rate component 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., $1.83\% \times (1 + \{ 1/2 \times 5.33\% \}) = 1.88\%$.
- (5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
 www.reuters.com Downloaded on 09/28/2018
 www.zacks.com Downloaded on 09/28/2018
 www.yahoo.com Downloaded on 09/28/2018

AMER. STATES WATER NYSE-AWR		RECENT PRICE	58.12	PE RATIO	33.2	(Trailing 12M Med. 20.0)	RELATIVE P/E RATIO	1.80	DIVID YLD	1.9%					
TIMELINESS	4	Lowest 5/20/18	High: 23.1	21.0	19.4	19.6	18.2	24.1	33.1	38.7	44.1	47.2	58.4	60.0	Target Price Range
SAFETY	2	Raised 7/20/12	Low: 16.8	13.5	14.9	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1	2021 2022 2023
TECHNICAL	3	Lowest 7/6/18	LEGENDS 1.35 x Dividends per sh divided by Interest Rate Relative Price Strength 2-Year High Options: Yes Shaded area indicates restriction												
BETA	.80	(vs. Market)	2021-23 PROJECTIONS Price Gain Return High 60 (+5%) 3% Low 45 (-25%) -3%												
Insider Decisions															
Institutional Decisions															
CAPITAL STRUCTURE as of 3/31/18															
MARKET CAP: \$2.1 billion (Mid Cap)															
CURRENT POSITION															
ANNUAL RATES															
QUARTERLY REVENUES (\$ mil)															
QUARTERLY EARNINGS PER SHARE															
QUARTERLY DIVIDENDS PAID															
BUSINESS: American States Water Co. operates as a holding company...															
A recent ruling is hurting American States Water's utility operations...															
rise in the future. This is good news because profitability in this segment isn't capped...															
James A. Flood July 13, 2018															
(A) Primary earnings. Excludes nonrecurring gains/losses. (B) Dividends historically paid in early March, June, September, and December. (C) In millions, adjusted for split. (D) Includes intangibles. As of 12/31/17, \$7.9 million/\$0.22 a share.															
Company's Financial Strength A Stock Price Stability 75 Price Growth Persistence 75 Earnings Predictability 95															

AMERICAN WATER NYSE-AWK		RECENT PRICE	86.31	PE RATIO	26.2 (Trailing 12 Months)	RELATIVE P/E RATIO	1.42 (Median: 19.0)	DIVID YLD	2.1%								
TECHNICAL	3 Lowered 6/1/18	High	23.7	23.0	25.8	32.8	39.4	45.1	56.2	61.2	65.2	82.4	91.5	Target Price Range	2021	2022	2023
		Low	16.5	18.2	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	78.0				
FAVORITY	3 New 7/25/08	LEGENDS															
TECHNICAL	3 Lowered 7/8/18	1.0 x Dividends per sh															
		Divided by Interest Rate															
		Relative Price Strength															
		Options Pos															
		Strategic Price Indicators															
2021-23 PROJECTIONS		Price Gain Return															
		High 115 (+35%) 10%															
		Low 75 (-15%) Nil															
Insider Decisions		S O B D J F M A M															
		b Buy 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0															
		b Sell 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0															
Institutional Decisions		302917 402917 102918															
		b Buy 262 265 282															
		b Sell 292 277 337															
		Shares 150782 153150 150335															
2002 2003 2004 2005 2006 2007 2008E 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019		% VALUE LINE PUB. LIC 21-23															
		Revenues per sh 22.93															
		"Cash Flow" per sh 7.70															
		Earnings per sh A 4.50															
		Capit Spending per sh B 2.60															
		Book Value per sh C 42.00															
		Common Shs Outstg D 187.50															
		Avg Ann'l P/E Ratio 27.5															
		Relative P/E Ratio 1.20															
		Avg Ann'l Div'd Yield 2.7%															
CAPITAL STRUCTURE as of 3/31/18		2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019															
		Total Debt \$5807.0 mil. Due in 5 Yrs \$2192.0 mil.															
		LT Debt \$6403.0 mil. LT Interest \$320.0 mil. (54% of Cap'l)															
		37.4% 37.9% 40.4% 39.5% 40.7% 39.1% 39.4% 39.1% 39.2% 43.3% 21.0% 21.0%															
		5.1% 4.0% 5.0% 4.0% AFUDC % to Net Profit 5.0%															
Leases, Uncapitalized: Annual rentals \$15.0 mil.		53.1% 56.9% 56.8% 55.7% 53.9% 52.4% 52.4% 53.7%															
		46.9% 43.1% 43.2% 44.2% 46.1% 47.6% 47.4% 46.2%															
Pension Assets 12/16 \$1648.0 mil.		8750.2 9283.0 9561.3 9580.3 9635.5 9940.7 10364 10911															
		9991.8 10524 11059 11021 11739 12391 12900 13933															
Pfd Stock \$7.0 mil.		3.7% 3.6% 4.4% 4.8% 5.4% 5.1% 5.5% 5.7%															
		4.6% 5.2% 6.5% 7.2% 8.4% 7.8% 8.7% 8.4%															
Common Stock 178,047,882 shs. as of 4/26/18		4.6% 5.2% 6.5% 7.2% 8.4% 7.8% 8.7% 8.4%															
		3.0% 1.8% 2.8% 3.5% 3.6% 4.7% 4.3% 4.7%															
		34% 65% 56% 52% 57% 40% 50% 50%															
CURRENT POSITION (MILL)		2016 2017 3/31/18															
		Cash Assets 75.0 82.0 81.0															
		Accounts Receivable 259.0 272.0 273.0															
		Other 440.0 366.0 378.0															
		Current Assets 774.0 720.0 733.0															
		Debt Due 1423.0 1227.0 1604.0															
		Other 815.0 903.0 802.0															
		Current Liab. 2392.0 2325.0 2539.0															
ANNUAL RATES of change (per sh)		Past 10 Yrs. Past 5 Yrs. Est'd '15-'17 to '21-'23															
		Revenues 3.0% 3.5% 4.0%															
		"Cash Flow" 60.0% 6.0% 7.0%															
		Earnings -- 7.5% 10.0%															
		Dividends -- 8.5% 10.0%															
		Book Value 1.0% 4.0% 6.0%															
QUARTERLY REVENUES (\$ mil.)		Full Year															
		2015 698.0 782.0 896.0 783.0 3159.0															
		2016 743.0 827.0 930.0 802.0 3362.0															
		2017 758.0 844.0 936.0 821.0 3357.0															
		2018 761.0 859 875 845 3440															
		2019 780 890 1050 880 3690															
EARNINGS PER SHARE A		Full Year															
		2015 .44 .68 .96 .56 2.64															
		2016 .48 .77 .83 .57 2.62															
		2017 .52 .73 1.12 .01 2.38															
		2018 .59 .87 1.20 .70 3.30															
		2019 .60 .88 1.27 .75 3.50															
QUARTERLY DIVIDENDS PAID B		Full Year															
		2014 .28 .31 .31 .31 1.21															
		2015 .31 .34 .34 .34 1.33															
		2016 .34 .375 .375 .375 1.47															
		2017 .375 .415 .415 .415 1.62															
		2018 .415 .455															
BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in 46 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 88% of 2017 revenues.		New Jersey is its largest market accounting for 25% of regulated revenues. Has 6,900 employees. The Vanguard Grp, owns 10.4% of outstanding shares; BlackRock, Inc., 7.4%; officers & directors, less than 1.0%. (3/18 Proxy). President & CEO: Susan N. Story. Chair: George MacKenzie. Address: 1025 Laurel Oak Road, Voorhees, NJ 08043. Tel: 856-348-8200. Internet: www.awwater.com.															
American Water Works has hiked the quarterly dividend by a generous amount. Since our last report in April, the board raised the payout by \$0.04 a share to \$0.455 a share. This was at the higher end of the 7%-10% target range. The growth rate was also well above the industry average.		The method of the company's success is not a mystery. American Water has been following a simple formula for some time now. By continually purchasing smaller water districts, it can meaningfully reduce operating expenses due to economies of scale. Making this easier is the current state of the water sector in the U.S. Most districts are small and municipally run. Many local governments do not have the financial wherewithal to maintain and replace aging pipelines and waste facilities. In addition, because of the many redundancies in the water operations, American Water can really cut costs and raise operating margins. Bottom-line prospects are good for both this year and next. The company's operating strategy (with a few exceptions mostly resulting from unusual expenses),															
has enabled the utility to be more profitable than the rest of the group. This year, we expect share net to recover to \$3.30 and rise another 6% in 2019, to \$3.50. The capital budget remains large. The utility will most likely spend \$1.7 billion annually through early next decade on improving its water assets. External debt will likely aid in funding a decent portion of the expenditures. Still, the company's balance sheet should not deteriorate much. Certain investors may find these shares of interest. True, the equity is only expected to keep pace with the market in the year ahead. But, that's not too bad considering the Water Utility Industry ranks among the lowest of all the groups followed by Value Line. Also, investors often have to forfeit a substantial amount of current income when purchasing a stock with healthy dividend growth prospects. In this case, AWK's yield is close to the industry norm. And though total return potential out to 2021-2023 is subpar, that's the case for the entire group. Thus, AWK is a viable option for those investors who must have exposure to the water sector.		James A. Flood July 13, 2018															
(A) Diluted earnings. Excludes nonrecur. losses: '08, \$4.62; '09, \$2.23; '11, \$0.07. Disc. oper: '06, (\$0.04); '11, \$0.03; '12, (\$0.19); '13, (\$0.01). GAAP used as of 2014, except for Dividends paid in March, June, September, form numbers for '06 & '07.		(B) Div. reinvestment available. (C) In millions. (D) Includes intangibles. On earnings do not sum in '15 due to rounding. (E) '12/31/17: \$1.579 billion, \$7.72/share. (F) Pro Earnings Predictability															
© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is solely for subscriber's own, non-commercial, internal use. No part of it may be reproduced, stored, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.		Company's Financial Strength B+ Stock's Price Stability 100 Price Growth Persistence 85 Earnings Predictability 90															



2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2.28	2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.82	4.56	4.75	5.00	5.00	5.00	5.00	5.00
.76	.77	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.83	1.87	2.07	2.12	2.20	2.40	2.40	2.40	2.40	2.40
.43	.46	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.40	1.50	1.50	1.50	1.50	1.50
.26	.28	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	.91	.91	.91	.91
.96	1.08	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.60	2.65	2.65	2.65	2.65	2.65	2.65
3.43	4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	11.02	11.00	12.00	12.00	12.00	12.00	12.00
141.49	154.31	158.97	181.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.25	178.75	178.75	178.75	178.75	178.75
23.6	24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	24.7	24.7	24.7	24.7	24.7	24.7	24.7
1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.25	1.24	1.25	1.24	1.24	1.24	1.24	1.24
2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
CAPITAL STRUCTURE as of 3/31/18																					
Total Debt \$2189.9 mill. Due in 5 Yrs \$368.4 mill.																					
LT Debt \$2063.1 mill. LT Interest \$83.0 mill. (51% of Cap)																					
Precision Assets-12/17 \$270.4 mill. Chg. \$321.0 mill.																					
Pfd Stock None																					
Common Stock 177,897,654 shares as of 4/30/18																					
MARKET CAP: \$8.3 billion (Large Cap)																					
CURRENT POSITION (MILL.)																					
Cash Assets 3.7 4.2 3.2																					
Receivables 97.4 98.6 91.8																					
Inventory (AvgCst) 13.0 14.4 15.3																					
Other 14.6 14.0 13.8																					
Current Assets 128.7 131.2 124.1																					
Accts Payable 59.8 59.2 40.2																					
Debt Due 157.2 117.4 123.7																					
Other 84.4 107.9 95.2																					
Current Liab. 307.5 284.5 258.1																					
ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Est'd 15-17 of change per sh)																					
Revenues 3.5% 2.0% 6.5%																					
Cash Flow 7.0% 6.5% 6.0%																					
Earnings 8.5% 8.5% 7.5%																					
Dividends 7.5% 8.0% 8.0%																					
Stock Value 6.5% 7.5% 6.5%																					
QUARTERLY REVENUES (\$ MILL.) Full Year																					
2015 190.3 205.8 221.0 197.1 814.2																					
2016 182.6 203.9 226.6 196.8 819.9																					
2017 187.8 203.4 215.0 203.3 809.5																					
2018 194.3 215.7 225 219 850																					
2019 205 225 225 225 890																					
EARNINGS PER SHARE Full Year																					
2015 .27 .32 .38 .17 1.14																					
2016 .29 .34 .41 .28 1.32																					
2017 .28 .34 .43 .30 1.35																					
2018 .29 .38 .44 .31 1.40																					
2019 .31 .38 .48 .33 1.50																					
QUARTERLY DIVIDENDS PAID Full Year																					
2014 .152 .152 .165 .165 .63																					
2015 .165 .165 .178 .178 .68																					
2016 .178 .178 .1913 .1913 .74																					
2017 .1913 .1913 .2047 .2047 .79																					
2018 .2047 .2047																					

Aqua America is pretty busy on the regulatory front. Due to its wide geographical base, the water utility is continually involved in rate cases with several state authorities. Indeed, so far in 2018, rate decisions have been made in seven states including Illinois, Indiana, Ohio, and Pennsylvania. Final decisions in four other states are pending, and are expected to be made before yearend.

Meanwhile the company is growing through acquisition. Aqua America is following the same strategy as industry leader American Water Works. That is, the utility is taking advantage of the incredibly fragmented water business to purchase some of the over 50,000 water districts in the U.S. These local entities typically don't have the financial means to spend the funds required to maintain and refurbish their antiquated infrastructure. By absorbing these smaller water districts, Aqua is able to bring significant savings from these operations due to the amount of redundancies in this industry. Most acquisitions are relatively small, so the company has to continually buy a host of small water authorities. We think that Aqua will

be able to increase its customer base by at least 3% annually using this strategy. Aqua has a large capital budget. Due in part to all of the M&A activity, the utility will probably spend \$500 million this year on modernizing its water assets. The annual outlays should remain substantial through early next decade.

The balance sheet remains solid. Despite the large construction program, Aqua has managed to stay in sound financial strength. Of the nine companies we follow in the industry, it is one of only two that garner an A' Financial Strength Rating.

These shares are ranked to underperform the market averages in the year ahead. Even with the company's improving fundamentals, the equity seems almost fully valued at this juncture. In addition, with the Federal Reserve announcing that it plans on raising short-term rates into 2020, yields on U.S. Treasury notes could be viewed as a more attractive option than utilities. Finally, like almost all members in this group, total return prospects out to 2021-2023 are subpar.

James A. Flood
July 13, 2018

(A) Diluted ops. Excl. nonrec. gains: '02, 4; '03, 3; '12, 184. Excl. gain from disc. operations: '12, 7; '13, 9; '14, 11. May not sum due to rounding. Next earnings report due August 1st.
(B) Dividends historically paid in early March, June, Sept. & Dec. = Divd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.
Company's Financial Strength A
Stock's Price Stability 85
Price Growth Persistence 65
Earnings Predictability 90

© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, stored, or transmitted in any form, electronic or other form, or used for promoting or marketing any product, service or product.

CALIFORNIA WATER NYSE-CWT

RECENT PRICE **39.90** P/E RATIO **27.5** (Trading: 38.0 Median: 20.0) RELATIVE P/E RATIO **1.49** DIV YLD **1.9%**

TECHNICALS 4 Lowered 3/3/18 SAFETY 3 Lowered 7/27/07 TECHNICAL 3 Lowered 6/29/10 DATA (DLO - Market)	High: 22.7 23.3 24.1 19.8 19.4 19.3 23.4 26.4 26.0 36.8 45.2 45.6 Low: 17.1 13.6 16.7 16.9 16.7 16.8 18.4 20.3 19.5 22.5 32.4 35.3	LEGENDS 1.31 x Dividends per share divided by Interest Rate Relative Price Strength 2-Year 50% MA Operator: Yes 2-Year 50% MA	Target Price Range 2021 2022 2023 48 40 32 24 20 16 12 8 6	
--	---	--	--	--

2021-23 PROJECTIONS		Price	Gain	Return	Ann'l Total
High	50	35	(-25%)	8%	-1%
Low	35	10	(-10%)	-1%	-1%

Insider Decisions		S O N D J F M A M	
To Buy	1 1 1 1 1 1 1 1 1 1 0		
To Sell	0 0 0 0 0 0 0 0 0 0 0		

Institutional Decisions		S O N D J F M A M	
To Buy	60 74 114	Percent	18
To Sell	71 70 85	shares	10
Net Buy	38931 33803 34481	traded	6

CAPITAL STRUCTURE as of 3/31/18		2016		2017		2018		2019		2020		2021		2022		2023	
Total Debt	\$796.7 mil.	39.7%	40.3%	38.5%	40.5%	37.5%	30.3%	33.0%	38.0%	35.5%	30.1%	21.0%	21.0%	Income Tax Rate	21.0%		
LT Debt	\$515.7 mil.	8.6%	7.6%	4.2%	7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	5.0%	5.0%	AFUDC % to Net Profit	5.0%		

MARKET CAP: \$1.9 billion (Mid Cap)		2016		2017		2018		2019		2020		2021		2022		2023	
Revenue	122.0	144.4	183.5	138.5	588.4	609.4	666.9	765	705	Revenue (\$ mil)	760						
Net Profit	12.3	25.1	28.0	281.0	80.0	80.0	80.0	80.0	80.0	Net Profit (\$ mil)	93.0						

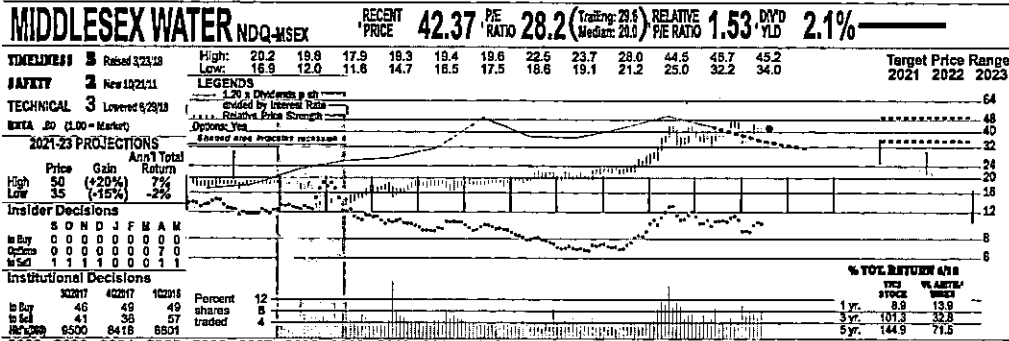
Business: California Water Service Group provides regulated and nonregulated water service to 484,900 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Saines Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp. West Hawaii Utilities (2008). Revenue breakdown, '17: residential, 72%; business, 19%; industrial, 4%; public authorities, 4%; other 1%. Off. and dir. own 1% of common stock (4/18 proxy). Has 1,163 employees. Pres. and CEO: Martin A. Kropelnicki Inc. DE. Addr.: 1720 North First St., San Jose, CA 95112-4588. Tel: 408-367-8200. Internet: www.cawatergroup.com.

California Water Service Group's profits should rebound in the second quarter. The regulated and nonregulated water provider posted a net loss of \$0.05 in the March interim. Several factors, including higher wages and benefit costs, general operating expenses (water production), as well as an unforeseen water main break in the San Francisco area weighed on results. Nevertheless, we expect that earnings recovered nicely in the recently ended second quarter, to \$0.42 a share. That said, the miss has spurred us to shave a dime from our current-year bottom-line estimate, to \$1.45 a share. Revenues are still on track to rise. Indeed, recent rate increases for customers and recoverable production costs played a role in the first quarter's 8% year-over-year advance. This was able to offset a \$1.2 million revenue reduction associated with cost of capital adjustment. On balance, our call for modest top-line improvement in this year and next remains unaltered. The company made an attempt to acquire SJW Group. Subsequent to the merger announcement of SJW Group and Connecticut Water, CWT stepped in with an unsolicited all-cash tender offer for the former, worth \$68.25 a share. However, the bid was immediately rejected, despite the lofty premium at the time of the proposal. Connecticut Water's go-shop period has come to an end, and both sides have reiterated their desires for a deal, thus shutting the door on California's efforts. Looking forward, we do not think there is any acquisition activity on the horizon. But abundant capital investments are likely on tap over the long haul. California ought to stick to its plan to heavily invest in its aging infrastructure. Old water mains and pipes, as well as inefficient treatment plants, need to be brought up to speed. This should help reduce operating costs and prevent future uninsured losses from water main breaks. This equity lacks investment appeal at this juncture. CWT shares are pegged to underperform the year-ahead broader market (Timeliness: 4). Moreover, total return potential over the three- to five-year stretch is nothing to write home about at the recent quotation.

Nicholas P. Patrikis
July 13, 2018

(A) Basic EPS. Excl. nonrecurring gain (loss) '02, '04, '11, '14. Next earnings report due late August.	May, Aug., and Nov. = Div'd reinvestment plan available.	(D) In millions, adjusted for splits.	(E) Excludes non-reg. rev.	Company's Financial Strength	B++
(B) Dividends historically paid in late Feb.	(C) Incl. intangible assets. In '17: \$24.8 mil., \$0.52/sh.			Stock's Price Stability	75
				Price Growth Persistence	35
				Earnings Predictability	65

© 2018 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranty of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is solely for subscriber's own, non-commercial, internal use. No part of it may be reproduced, retransmitted, stored or transmitted in any printed, electronic or other form, or used for promoting or marketing any product or service or product.



2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.20	8.50	8.50	8.50	8.50	8.50	8.50
1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.58	1.72	1.64	1.97	2.17	2.24	2.40	2.55	2.55	2.55	2.55	2.55	2.55
.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.50	1.65	1.65	1.65	1.65	1.65	1.65
.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.81	.86	.91	.91	.91	.91	.91	.91
1.59	1.67	2.54	2.16	2.31	1.66	2.12	1.49	1.60	1.50	1.36	1.26	1.40	1.50	2.91	3.08	3.05	3.60	3.60	3.60	3.60	3.60	3.60
7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	14.83	15.15	15.15	15.15	15.15	15.15	15.15
10.36	10.48	11.38	11.56	13.17	13.25	13.40	13.52	15.57	15.70	15.62	15.96	16.12	16.23	16.30	16.35	16.50	16.75	16.75	16.75	16.75	16.75	16.75
21.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.6	19.7	19.5	19.1	25.6	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4
1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%

CAPITAL STRUCTURE as of 3/31/18

LT Debt \$174.6 mill. Due in 5 Yrs \$34.9 mill.
 LT Debt \$140.1 mill. LT Interest \$5.5 mill.
 (Total interest coverage: 9.5x)

MARKET CAP: \$700 million (Small Cap)

CURRENT POSITION

2016	2017	3/31/18
3.9	4.9	2.0
22.8	24.3	23.2
26.7	29.2	25.2
12.3	13.9	11.0
18.2	34.9	34.5
16.6	15.7	16.5
47.1	64.5	64.0

ANNUAL RATES

10 Yr.	Past 5 Yr.	Past 1 Yr.	Est'd '15-'17
2.5%	3.5%	3.0%	3.0%
4.5%	7.0%	7.0%	7.0%
5.0%	8.0%	8.0%	8.0%
2.0%	2.0%	5.5%	5.5%
3.5%	3.5%	4.0%	4.0%

QUARTERLY REVENUES (\$ mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	28.8	31.7	34.7	30.8	126.0
2016	30.6	32.7	37.8	31.8	132.9
2017	30.1	33.0	36.2	31.5	130.8
2018	31.2	34.0	37.5	32.3	135
2019	33.0	35.0	39.0	34.0	142

EARNINGS PER SHARE

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.22	.31	.41	.28	1.22
2016	.29	.36	.54	.19	1.38
2017	.27	.33	.46	.32	1.38
2018	.27	.35	.45	.33	1.50
2019	.32	.39	.59	.35	1.65

QUARTERLY DIVIDENDS PAID

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.19	.19	.19	.19	.76
2015	.1925	.1925	.1925	.19875	.78
2016	.19875	.19875	.19875	.21125	.81
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375			

(A) Divided earnings. Next earnings report due early August. (B) Dividends historically paid in mid-Feb., May, Aug., and November. Div reinvestment plan available. (C) In millions.

© 2018 Value Line, Inc. All rights reserved. FactSet material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is solely for subscriber's own, non-commercial, internal use. No part of it may be reproduced, stored, or transmitted in any form, or used for generating or marketing any printed or electronic publication, service or product.

Middlesex Water stock has regained some ground over the past three months. Shares of the Northeast water provider struggled in the early part of this year, but have been performing better of late. Since our April review, they are up more than 15% in value, and are trading just several points shy of their recently etched all-time high price. At this time, it appears the market is pricing in a good amount of MSEX's anticipated top- and bottom-line growth, which includes a lower corporate tax bill, as well as recently approved water rate hikes. (The latter took effect April 1st, and ought to be evident in the second quarter).

First-quarter financial results were mixed. The company generated revenues of \$31.2 million, about 4% higher than the previous-year tally, due largely to a wider Delaware customer base and increased water usage from industrial and commercial customers in New Jersey. Meantime, earnings of \$0.27 a share came in flat, year over year, as an uptick in operation and maintenance expenses (increased production costs and unforeseen weather-related expenses) kept the lid on the bot-

tom line. Consequently, we now look for revenues of \$135 million (down \$1 million from our prior call) and share net of \$1.50 (down \$0.05) this year.

Investments in its aging infrastructure are under way. Middlesex has kicked off its capital spending program, known as "Water For Tomorrow," with a \$52 million project along its New Jersey territory. The construction of the Western Transmission Main will supplement its existing main, which services 300,000 customers through Middlesex County. Over the next five years, the company has earmarked approximately \$300 million to the program in an effort to increase efficiency and ultimately lower costs across its water delivery systems.

At the current valuation this issue does not stand out. The recent run-up in price has eroded most of the gains we envision over the pull to next decade. Too, MSEX stock is neutrally ranked for the year ahead, and the dividend yield is only average. All told, we continue to recommend investors exercise patience and wait for a better entry point.

Nicholas P. Patrikis July 13, 2018

Company's Financial Strength	B++
Stocks Price Stability	65
Price Growth Persistence	40
Earnings Predictability	60

YORK WATER NDQ-YORW		RECENT PRICE	32.75	P/E RATIO	31.2	(Trading 32.4 MedStat 24.0)	RELATIVE P/E RATIO	1.70	DPYD YLD	2.0%									
TIMELINESS 5 Lowered 6/6/18 SAFETY 5 Lowered 7/27/15 TECHNICAL 4 Lowered 6/29/18 DATA .50 (1.00 = Market)	LEGENDS 1.0 x Dividends per sh Capped by Interest Rate Relative Price Strength 3-Mo 2-Mo 1-Mo Options: Yes 3-Mo 2-Mo 1-Mo	High: 18.5 16.5 18.0 18.0 18.1 18.5 22.0 24.3 26.7 39.8 39.9 34.2 Low: 15.5 6.2 9.7 12.8 15.8 16.8 17.8 18.6 19.7 23.8 31.7 27.5	Target Price Range 2021 2022 2023																
2021-23 PROJECTIONS Price Gain Return High 45 (+33%) 10% Low 30 (-10%) 9%																			
Insider Decisions Buy 213 2 215 2 214 2 Sell 0 0 0 0 0 0 0 0 0 0 0 0																			
Institutional Decisions Buy 40 29 38 Sell 30 35 40 Buy/Sell 5125 4582 4449																			
% TOT RETURN QTR 1yr: -8.9 3yr: 82.2 5yr: 67.8																			
VALUATION PUBL. LLC 21-23																			
2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Revenue per sh	5.30
2.05	2.17	2.19	2.58	2.56	2.79	2.83	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.85	4.00	"Cash Flow" per sh	2.25
.57	.65	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.65	1.75	Earnings per sh A	1.60
.40	.47	.49	.56	.58	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.05	1.05	1.15	Div'd Decl'd per sh B	1.00
.35	.37	.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.70	.75	Cap'l Spending per sh	1.25
.68	1.07	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.91	.76	1.10	1.11	1.03	1.35	1.50	1.25	Book Value per sh	11.75
3.90	4.08	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.59	8.15	8.51	8.88	9.29	9.35	10.55	Common Sns Outst'g C	12.75
9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.78	12.92	12.98	12.83	12.81	12.85	12.87	12.80	12.75	Avg Ann'l P/E Ratio	22.5
26.9	24.5	25.7	26.3	31.2	30.3	24.8	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	34.6	34.6	Relative P/E Ratio	1.25
1.47	1.40	1.39	1.40	1.68	1.61	1.48	1.48	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.72	1.72	1.72	Avg Ann'l Div'd Yield	2.7%
3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.6%	2.8%	2.6%	2.1%	1.9%	1.9%	1.9%	Cap'l Spending as % of Value Line Estimate	12.5
CAPITAL STRUCTURE as of 3/31/18 Total Debt \$90.0 mill. Due in 5 Yrs \$42.5 mill. LT Debt \$78.0 mill. LT Interest \$5.3 mill.																			
MARKET CAP: \$425 million (Small Cap)																			
CURRENT POSITION 2018																			
Cash Assets 4.2 Accounts Receivable 4.3 Inventory (Avg. Cost) 7.9 Other 3.4 Current Assets 12.6 Accts Payable 3.7 Debt Due 4.6 Other 6.2 Current Liab. 8.1																			
ANNUAL RATES Past 10 Yrs. Past 5 Yrs. Past 1 Yrs. to 21-23 Revenues 3.5% 3.5% 6.0% "Cash Flow" 6.0% 6.0% 7.5% Earnings 5.5% 6.5% 9.0% Dividends 3.5% 3.5% 8.0% Book Value 5.0% 3.5% 5.0%																			
QUARTERLY REVENUES (\$ mill.) Full Year 2015 11.2 11.9 12.4 11.6 47.1 2016 11.3 11.8 12.6 11.9 47.6 2017 11.3 12.3 12.7 12.3 48.6 2018 11.6 12.5 12.9 12.5 49.5 2019 12.0 12.8 13.3 12.9 51.0																			
EARNINGS PER SHARE A Full Year 2015 20 22 28 27 97 2016 19 23 27 23 52 2017 20 23 31 27 101 2018 20 28 32 28 105 2019 24 27 33 31 115																			
QUARTERLY DIVIDENDS PAID B Full Year 2014 1.431 1.431 1.431 1.431 5.72 2016 1.455 1.455 1.455 1.455 5.84 2018 1.602 1.602 1.602 1.602 6.27 2019 1.666 1.666 1.666 1.666 6.47																			
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, 2017, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 198,000. Has more than 69,000 customers. Residential customers accounted for 64% of 2017 revenues; commercial and industrial (28%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 102 full-time employees at 12/31/17. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (2018 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3501. Internet: www.yorkwater.com.																			
York Water's first-quarter bottom line was unchanged compared to the previous-year figure. The regulated utility posted earnings of \$0.20 a share for the March period, missing our mark by \$0.02. Nevertheless, we are retaining our current-year profit forecast of \$1.05 per share, as we think a lower effective tax rate, combined with higher asset improvement deductions, should help offset rising expenses in the back half of 2018. Meantime, first-quarter revenues of \$11.6 million were fractionally above our call, though the beat was not significant enough to spur an upward revision. As we expected the company has inquired about a rate increase. In May, York asked the Pennsylvania Public Utility Commission for more than \$6 million (annual revenues) in customer rate hikes to recover replacement costs associated with water pipeline improvements, other infrastructure upgrades, as well as personnel and operational cost increases. York hopes to recover expenses incurred since its last rate case filing in 2013, and help balance future capital investments. A time frame for the decision has not yet been established. Capital spending ought to continue through 2018 and beyond. Year to date, York Water has invested only about \$3.0 million, specifically to complete a raw water pumping station and some modest infrastructure upgrades. An additional \$20 million is likely to be spent by year's end. Going forward, we expect further infrastructure upgrades and improvements to its waste water treatment plants. This spending is necessary not only as a response to its aging pipes and delivery methods, but also to handle its expanding customer base. This equity lacks investment appeal at this juncture. Shares of York Water have been lowered two spots on our Timeliness ranking scale, to 5 (Lowest). Thus, short-term accounts should turn the page. Similarly, those with a buy-and-hold mantra should take a pass, as the shares offer limited price upside 3- to 5-years out. Lastly, as a stand-alone dividend play (2.0% current yield), we think investors can find more-attractive options elsewhere.																			
Nicholas P. Patrikis July 13, 2018																			
(A) Diluted earnings. Next earnings report due late August. (B) Dividends historically paid in late February, June, September, and December. (C) Company's Financial Strength B+ Stock's Price Stability 60 Price Growth Persistence 65 Earnings Predictability 90																			

© 2018 Value Line, Inc. All rights reserved. Facted material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, stored, copied or transmitted in any printed, electronic or other form, or used for promoting or marketing any product or service or product.

Carolina Water Service, Inc. of North Carolina
Summary of Risk Premium Models for the
Proxy Group of Six Water Companies

	<u>Proxy Group of Six Water Companies</u>
Predictive Risk Premium Model (PRPM) (1)	10.90 %
Risk Premium Using an Adjusted Total Market Approach (2)	<u>10.56 %</u>
Average	<u>10.73 %</u>

Notes:

- (1) From page 11 of this Schedule.
- (2) From page 12 of this Schedule.

Carolina Water Service, Inc. of North Carolina
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
<u>Proxy Group of Six Water Companies</u>	<u>LT Average Predicted Variance</u>	<u>Spot Predicted Variance</u>	<u>Recommended Variance (2)</u>	<u>GARCH Coefficient</u>	<u>Predicted Risk Premium (3)</u>	<u>Risk-Free Rate (4)</u>	<u>Indicated ROE (5)</u>
American States Water Co.	0.38%	0.30%	0.30%	1.84918	6.81%	3.71%	10.52%
American Water Works Company Inc	NMF	NMF	NMF	5.57916	NMF	3.71%	NMF
Aqua America Inc	0.44%	0.25%	0.25%	2.29311	7.14%	3.71%	10.85%
California Water Service Group	0.32%	0.26%	0.26%	1.93864	6.33%	3.71%	10.04%
Middlesex Water Co.	0.30%	0.37%	0.30%	2.04292	7.60%	3.71%	11.31%
York Water Co.	0.46%	0.34%	0.34%	1.93972	8.26%	3.71%	11.97%
						Average	<u>10.94%</u>
						Median	<u>10.85%</u>
						Average of Mean and Median	<u>10.90%</u>

NMF = Not Meaningful Figure

Notes:

- (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 Bloomberg Professional Service.
- (2) Due to current market conditions, I have selected the lower value between the two predicted variances at this time.
- (3) $[1 + (\text{Column [3]} * \text{Column [4]})^{1/2}] - 1$.
- (4) From note 2 on page 22 of this Schedule.
- (5) Column [5] + Column [6].

Carolina Water Service, Inc. of North Carolina
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 Six Water Companies</u>
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	4.78 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.37</u> (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	5.15 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.07</u> (3)
5.	Adjusted Prospective Bond Yield	5.22 %
6.	Equity Risk Premium (4)	<u>5.34</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.56</u></u> %

- Notes:
- (1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 18-19 of this Schedule).
 - (2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.37% from page 13 of this Schedule.
 - (3) Adjustment to reflect the A2 / A3 Moody's LT issuer rating of the proxy group of six water companies as shown on page 14 of this Schedule. The 0.07% upward adjustment is derived by taking 1/6 of the spread between A2 and A3 Public Utility Bonds ($1/6 * 0.4\% = 0.07\%$) as derived from page 13 of this Schedule.
 - (4) From page 15 of this Schedule.

Carolina Water Service, Inc. of North Carolina
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1]	[2]	[3]
	<u>Aaa Rated Corporate Bond</u>	<u>A Rated Public Utility Bond</u>	<u>Baa Rated Public Utility Bond</u>
Sep-2018	3.98 %	4.32 %	4.74 %
Aug-2018	3.88	4.26	4.64
Jul-2018	<u>3.87</u>	<u>4.27</u>	<u>4.67</u>
Average	<u>3.91 %</u>	<u>4.28 %</u>	<u>4.68 %</u>

Selected Bond Spreads

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:
0.37 % (1)

Baa Rated Public Utility Bonds Over A Rated Public Utility Bonds:
0.40 % (2)

Notes:

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

Source of Information:
Bloomberg Professional Service

Carolina Water Service, Inc. of North Carolina
Comparison of Long-Term Issuer Ratings for
Proxy Group of Six Water Companies

	<u>Moody's</u>		<u>Standard & Poor's</u>	
	<u>Long-Term Issuer Rating</u>	<u>September 2018</u>	<u>Long-Term Issuer Rating</u>	<u>September 2018</u>
<u>Proxy Group of Six Water Companies</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting(1)</u>
American States Water Co. (2)	A2	6.0	A+	5.0
American Water Works Company Inc (3)	A3	7.0	A	6.0
Aqua America Inc (4)	NR	--	A+	5.0
California Water Service Group (5)	NR	--	A+	5.0
Middlesex Water Co.	NR	--	A	6.0
York Water Co.	NR	--	A-	7.0
Average	<u>A2/A3</u>	<u>6.5</u>	<u>A</u>	<u>5.7</u>

Notes:

- (1) From page 6 of Schedule DWD-4 (direct testimony).
- (2) Ratings that of Golden State Water Company.
- (3) Ratings that of New Jersey and Pennsylvania American Water Companies.
- (4) Ratings that of Aqua Pennsylvania, Inc.
- (5) Ratings that of California Water Service Company.

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

Carolina Water Service, Inc. of North Carolina
Judgment of Equity Risk Premium for
Proxy Group of Six Water Companies

<u>Line No.</u>		<u>Proxy Group of Six Water Companies</u>
1.	Calculated equity risk premium based on the total market using the beta approach (1)	6.15 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	<u>4.52</u>
3.	Average equity risk premium	<u><u>5.34 %</u></u>

Notes: (1) From page 16 of this Schedule.
(2) From page 20 of this Schedule.

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

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Six Water Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.70 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.28
3.	Ibbotson Equity Risk Premium based on PRPM (3)	6.41
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	6.01
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.64
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>10.30</u>
7.	Conclusion of Equity Risk Premium	7.89 %
8.	Adjusted Beta (7)	<u>0.78</u>
9.	Forecasted Equity Risk Premium	<u><u>6.15 %</u></u>

Notes provided on page 17 of this Schedule.

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

Notes:

- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2017 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2017.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2017 referenced in Note 1 above.
- (3) The Predictive Risk Premium Model (PRPM) is discussed in the 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 and average Aaa and Aa corporate monthly bond yields, from January 1928 through September 2018.
- (4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 4.78% (from page 12 of this Schedule) from the projected 3-5 year total annual market return of 10.79% (described fully in note 1 on page 22 of this Schedule).
- (5) Using data from Value Line for the S&P 500, an expected total return of 16.42% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.78% results in an expected equity risk premium of 11.64%.
- (6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 15.08% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.78% results in an expected equity risk premium of 10.30%.
- (7) Average of mean and median beta from page 21 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2018 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, October 1, 2018 and June 1, 2018
Bloomberg Professional Service

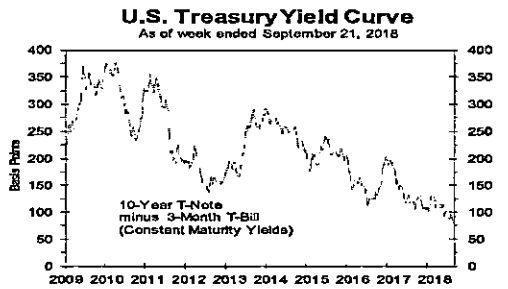
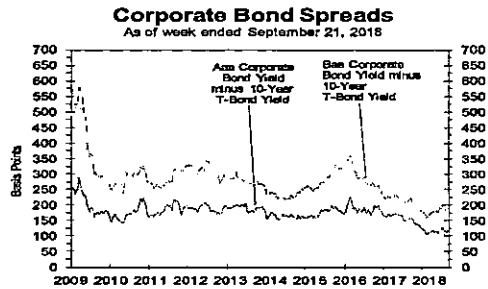
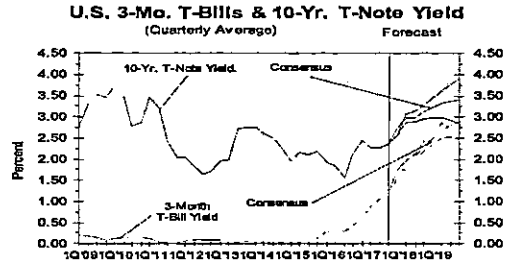
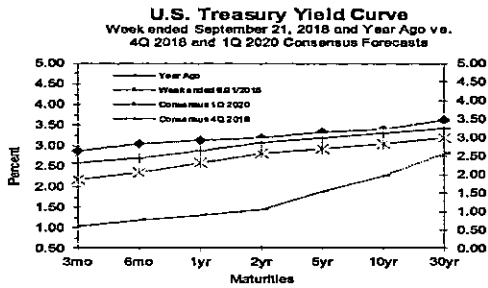
2 ■ BLUE CHIP FINANCIAL FORECASTS ■ OCTOBER 1, 2018

Consensus Forecasts of U.S. Interest Rates and Key Assumptions

Interest Rates	History								Consensus Forecasts-Quarterly Avg.						
	Average For Week Ending				Average For Month				Latest Qtr	4Q	1Q	2Q	3Q	4Q	1Q
	Sep 21	Sep 14	Sep 7	Aug 31	Aug	Jul	Jun	Q3 2018*	2018	2019	2019	2019	2019	2019	2020
Federal Funds Rate	1.92	1.92	1.91	1.92	1.91	1.91	1.81	1.91	2.2	2.4	2.7	2.8	2.9	2.9	2.9
Prime Rate	5.00	5.00	5.00	5.00	5.00	5.00	4.88	5.00	5.3	5.5	5.7	5.9	6.0	5.9	5.9
LIBOR, 3-mo.	2.35	2.33	2.32	2.32	2.33	2.34	2.33	2.33	2.6	2.8	3.0	3.1	3.2	3.2	3.2
Commercial Paper, 1-mo.	2.10	2.03	2.00	1.99	1.96	1.96	1.92	1.98	2.3	2.5	2.7	2.8	2.9	2.9	2.9
Treasury bill, 3-mo.	2.17	2.15	2.14	2.12	2.07	1.99	1.94	2.06	2.3	2.5	2.7	2.8	2.9	2.9	2.9
Treasury bill, 6-mo.	2.36	2.32	2.30	2.27	2.24	2.16	2.11	2.24	2.4	2.6	2.8	2.9	3.0	3.0	3.0
Treasury bill, 1 yr.	2.58	2.55	2.50	2.47	2.45	2.38	2.31	2.45	2.6	2.8	2.9	3.1	3.1	3.1	3.1
Treasury note, 2 yr.	2.80	2.75	2.67	2.65	2.64	2.60	2.51	2.65	2.8	3.0	3.1	3.2	3.2	3.2	3.2
Treasury note, 5 yr.	2.94	2.87	2.78	2.76	2.77	2.77	2.76	2.80	3.0	3.1	3.2	3.3	3.3	3.3	3.3
Treasury note, 10 yr.	3.05	2.97	2.91	2.87	2.90	2.88	2.90	2.91	3.1	3.2	3.3	3.4	3.4	3.4	3.4
Treasury note, 30 yr.	3.19	3.11	3.08	3.01	3.05	3.00	3.04	3.05	3.3	3.4	3.5	3.6	3.7	3.6	3.6
Corporate Aaa bond	4.17	4.12	4.10	4.03	4.04	4.06	4.09	4.07	4.3	4.5	4.6	4.7	4.7	4.7	4.7
Corporate Baa bond	4.86	4.83	4.82	4.75	4.75	4.79	4.81	4.78	5.1	5.3	5.4	5.5	5.6	5.6	5.6
State & Local bonds	3.75	3.71	3.67	3.63	3.63	3.60	3.62	3.64	4.0	4.1	4.2	4.3	4.4	4.4	4.4
Home mortgage rate	4.65	4.60	4.54	4.52	4.55	4.53	4.57	4.57	4.7	4.9	5.0	5.1	5.1	5.2	5.2

Key Assumptions	History								Consensus Forecasts-Quarterly					
	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
	2016	2017	2017	2017	2017	2018	2018	2018*	2018	2019	2019	2019	2019	2020
Major Currency Index	93.6	94.3	92.9	88.3	88.9	86.1	88.3	90.2	90.0	89.8	89.4	88.6	88.5	88.5
Real GDP	1.8	1.8	3.0	2.8	2.3	2.2	4.2	3.2	2.8	2.4	2.4	2.2	1.9	1.8
GDP Price Index	2.3	2.0	1.2	2.2	2.5	2.0	3.0	2.2	2.3	2.3	2.3	2.2	2.2	2.2
Consumer Price Index	2.7	3.0	0.1	2.1	3.3	3.5	1.7	2.2	2.4	2.4	2.2	2.3	2.3	2.3

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. 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). *Interest rate data for Q3 2018 based on historical data through the week ended September 21. Data for Q3 2018 Major Currency Index based on data through week ended September 21. Figures for Q3 2018 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question asked of the panelists this month.



14 ■ BLUE CHIP FINANCIAL FORECASTS ■ JUNE 1, 2018

Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2020 through 2024 and averages for the five-year periods 2020-2024 and 2025-2029. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

Interest Rates		Average For The Year					Five-Year Averages	
		2020	2021	2022	2023	2024	2020-2024	2025-2029
1. Federal Funds Rate	CONSENSUS	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Top 10 Average	3.5	3.6	3.6	3.5	3.5	3.5	3.5
	Bottom 10 Average	2.6	2.5	2.4	2.4	2.6	2.5	2.6
2. Prime Rate	CONSENSUS	6.1	6.0	6.0	6.0	6.1	6.0	6.0
	Top 10 Average	6.5	6.6	6.6	6.5	6.5	6.6	6.5
	Bottom 10 Average	5.6	5.5	5.4	5.5	5.6	5.5	5.6
3. LIBOR, 3-Mo.	CONSENSUS	3.3	3.3	3.3	3.3	3.4	3.3	3.3
	Top 10 Average	3.7	3.9	4.0	3.9	3.9	3.9	3.8
	Bottom 10 Average	2.9	2.8	2.7	2.7	2.9	2.8	2.9
4. Commercial Paper, 1-Mo.	CONSENSUS	3.1	3.2	3.1	3.1	3.2	3.1	3.2
	Top 10 Average	3.5	3.7	3.7	3.7	3.7	3.6	3.6
	Bottom 10 Average	2.7	2.6	2.6	2.6	2.7	2.6	2.7
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	3.0	3.0	2.9	2.9	3.0	3.0	3.0
	Top 10 Average	3.5	3.6	3.6	3.5	3.6	3.5	3.5
	Bottom 10 Average	2.5	2.4	2.4	2.4	2.5	2.4	2.5
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	3.1	3.1	3.1	3.1	3.2	3.1	3.2
	Top 10 Average	3.6	3.7	3.7	3.7	3.7	3.7	3.7
	Bottom 10 Average	2.7	2.6	2.5	2.5	2.7	2.6	2.7
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	3.2	3.3	3.2	3.2	3.3	3.2	3.3
	Top 10 Average	3.7	3.8	3.8	3.8	3.8	3.8	3.9
	Bottom 10 Average	2.8	2.7	2.6	2.7	2.8	2.7	2.8
8. Treasury Note Yield, 2-Yr.	CONSENSUS	3.4	3.4	3.4	3.4	3.4	3.4	3.5
	Top 10 Average	3.9	4.0	4.0	3.8	4.0	3.9	4.1
	Bottom 10 Average	2.9	2.9	2.8	2.8	2.9	2.8	2.9
10. Treasury Note Yield, 5-Yr.	CONSENSUS	3.6	3.6	3.6	3.6	3.7	3.6	3.8
	Top 10 Average	4.0	4.1	4.1	4.1	4.2	4.1	4.4
	Bottom 10 Average	3.2	3.2	3.0	3.1	3.2	3.1	3.2
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.8	3.8	3.8	3.8	3.8	3.8	3.9
	Top 10 Average	4.3	4.3	4.4	4.3	4.4	4.3	4.5
	Bottom 10 Average	3.3	3.3	3.2	3.2	3.3	3.2	3.4
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	4.1	4.2	4.2	4.2	4.2	4.2	4.4
	Top 10 Average	4.7	4.7	4.7	4.8	4.8	4.7	5.0
	Bottom 10 Average	3.6	3.6	3.6	3.6	3.7	3.6	3.7
13. Corporate Aaa Bond Yield	CONSENSUS	5.2	5.2	5.2	5.3	5.4	5.3	5.4
	Top 10 Average	5.7	5.8	5.9	6.0	6.0	5.9	6.0
	Bottom 10 Average	4.7	4.7	4.6	4.6	4.7	4.6	4.7
13. Corporate Baa Bond Yield	CONSENSUS	6.0	6.0	6.0	6.1	6.2	6.1	6.3
	Top 10 Average	6.6	6.8	6.9	7.0	7.0	6.9	7.0
	Bottom 10 Average	5.3	5.3	5.3	5.3	5.4	5.3	5.4
14. State & Local Bonds Yield	CONSENSUS	4.6	4.5	4.5	4.5	4.6	4.5	4.6
	Top 10 Average	5.1	5.1	5.1	5.1	5.1	5.1	5.2
	Bottom 10 Average	4.0	3.9	3.9	4.0	4.1	4.0	4.1
15. Home Mortgage Rate	CONSENSUS	5.4	5.4	5.4	5.4	5.5	5.4	5.6
	Top 10 Average	5.8	5.9	6.0	6.0	6.0	6.0	6.1
	Bottom 10 Average	4.9	4.9	4.8	4.8	4.9	4.9	5.0
A. FRB - Major Currency Index	CONSENSUS	89.6	89.4	89.6	90.0	90.1	89.7	90.4
	Top 10 Average	94.3	94.6	94.5	94.5	94.5	94.5	94.8
	Bottom 10 Average	84.6	84.0	84.3	85.4	85.6	84.8	85.9
B. Real GDP		Year-Over-Year, % Change					Five-Year Averages	
		2020	2021	2022	2023	2024	2020-2024	2025-2029
C. GDP Chained Price Index	CONSENSUS	1.9	1.9	2.0	2.1	2.1	2.0	2.1
	Top 10 Average	2.4	2.4	2.4	2.4	2.5	2.4	2.4
	Bottom 10 Average	1.5	1.3	1.5	1.8	1.8	1.6	1.8
D. Consumer Price Index	CONSENSUS	2.2	2.2	2.1	2.1	2.1	2.1	2.1
	Top 10 Average	2.4	2.4	2.3	2.2	2.3	2.3	2.2
	Bottom 10 Average	2.0	2.0	2.0	1.9	2.0	2.0	2.0
E. Consumer Price Index	CONSENSUS	2.3	2.3	2.3	2.2	2.2	2.3	2.2
	Top 10 Average	2.7	2.6	2.5	2.4	2.5	2.5	2.4
	Bottom 10 Average	1.9	2.0	2.1	2.0	2.0	2.0	2.1

Carolina Water Service, Inc. of North Carolina
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

<u>Line No.</u>		<u>Implied Equity Risk Premium</u>
	<u>Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):</u>	
1.	Historical Equity Risk Premium	4.04 %
2.	Regression of Historical Equity Risk Premium (2)	5.43
3.	Forecasted Equity Risk Premium Based on PRPM (3)	3.72
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	4.72
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	<u>4.67</u>
6.	Average Equity Risk Premium (6)	<u>4.52 %</u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2017. 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.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A rated public utility bond yields from 1928 - 2017 referenced in note 1 above.
- (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 January 1928 - September 2018.
- (4) Using data from Value Line for the S&P Utilities Index, an expected return of 9.87% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A rated public utility bond yield of 5.15%, calculated on line 3 of page 12 of this Schedule results in an equity risk premium of 4.72%. (9.87% - 5.15% = 4.72%)
- (5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.82% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A rated public utility bond yield of 5.15%, calculated on line 3 of page 12 of this Schedule results in an equity risk premium of 4.67%. (9.82% - 5.15% = 4.67%)
- (6) Average of lines 1 through 5.

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

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Six Water Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Bloomberg Adjusted Beta</u>	<u>Average Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate</u>	<u>ECAPM Cost Rate</u>	<u>Indicated Common Equity Cost Rate (3)</u>
American States Water Co.	0.80	0.71	0.76	8.99 %	3.71 %	10.54 %	11.08 %	10.81 %
American Water Works Company Inc	0.65	0.63	0.64	8.99	3.71	9.46	10.27	9.87
Aqua America Inc	0.75	0.71	0.73	8.99	3.71	10.27	10.88	10.57
California Water Service Group	0.80	0.87	0.84	8.99	3.71	11.26	11.62	11.44
Middlesex Water Co.	0.80	0.80	0.80	8.99	3.71	10.90	11.35	11.13
York Water Co.	0.80	0.87	0.84	8.99	3.71	11.26	11.62	11.44
Mean			0.77			10.62 %	11.14 %	10.88 %
Median			0.78			10.72 %	11.21 %	10.97 %
Average of Mean and Median			0.78			10.67	11.18	10.93 %

Notes on page 22 of this Schedule.

Carolina Water Service, Inc. of North Carolina
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

- (1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2017)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2017:	12.07 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.15
MRP based on Ibbotson Historical Data:	<u>6.92 %</u>

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2017)

8.59 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - September 2018)

7.26 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending September 28, 2018)

Total projected return on the market 3-5 years hence*:	10.79 %
Projected Risk-Free Rate (see note 2):	3.71
MRP based on Value Line Summary & Index:	<u>7.08 %</u>
*Forecasted 3-5 year capital appreciation plus expected dividend yield	

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	16.42 %
Projected Risk-Free Rate (see note 2):	3.71
MRP based on Value Line data	<u>12.71 %</u>

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	15.08 %
Projected Risk-Free Rate (see note 2):	3.71
MRP based on Bloomberg data	<u>11.37 %</u>

Average of Value Line, Ibbotson, and Bloomberg MRP: 8.99 %

- (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 Blue Chip Financial Forecasts. (See pages 18-19 of this Schedule.) The projection of the risk-free rate is illustrated below:

Fourth Quarter 2018	3.30 %
First Quarter 2019	3.40
Second Quarter 2019	3.50
Third Quarter 2019	3.60
Fourth Quarter 2019	3.70
First Quarter 2020	3.60
2020-2024	4.20
2025-2029	4.40
	<u>3.71 %</u>

- (3) Average of Column 6 and Column 7.

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, October 1, 2018 and June 1, 2018
Stocks, Bonds, Bills, and Inflation - 2018 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Carolina Water Service, Inc. of North Carolina
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group was then selected based on the unadjusted beta range of 0.33 – 0.75 and residual standard error of the regression range of 2.5251 – 3.0115 of the Utility 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 Utility Proxy Group's residual standard error of the regression is 0.1216. 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

$$\text{Thus, } 0.1216 = \frac{2.7683}{\sqrt{518}} = \frac{2.7683}{22.7596}$$

Source of Information: Value Line, Inc., September 2018
Value Line Investment Survey (Standard Edition)

Carolina Water Service, Inc. of North Carolina
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Six 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.	0.75	0.59	2.8678	0.1079
American Water Works Company Inc	0.60	0.34	2.1070	0.0793
Aqua America Inc	0.70	0.48	2.2225	0.0836
California Water Service Group	0.75	0.58	2.8593	0.1076
Middlesex Water Co.	0.75	0.59	3.1751	0.1195
York Water Co.	0.80	0.64	3.3783	0.1271
Average	<u>0.73</u>	<u>0.54</u>	<u>2.7683</u>	<u>0.1042</u>
Beta Range (+/- 2 std. Devs. of Beta) 2 std. Devs. of Beta	0.33 0.21	0.75		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.5251	3.0115		
Std. dev. of the Res. Std. Err.	0.1216			
2 std. devs. of the Res. Std. Err.	0.2432			

Source of Information: Valueline Proprietary Database, September 2018

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

	[1]	[2]	[3]	[4]
<u>Proxy Group of Seventeen 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>
AutoZone Inc.	0.80	0.67	2.7751	0.1044
Cheesecake Factory	0.75	0.55	2.7961	0.1052
Cboe Global Markets	0.75	0.59	2.7130	0.1021
Cracker Barrel	0.80	0.64	3.0058	0.1131
Chemed Corp.	0.80	0.68	2.6135	0.0983
C.H. Robinson	0.80	0.68	2.5785	0.0970
Campbell Soup	0.65	0.45	2.6367	0.0992
Dollar General	0.85	0.73	2.9989	0.1128
Dunkin' Brands Group	0.65	0.44	2.7974	0.1053
Darden Restaurants	0.85	0.70	2.9531	0.1111
Forrester Research	0.70	0.54	2.6049	0.0980
HCA Holdings	0.85	0.74	2.9907	0.1125
Hormel Foods	0.70	0.54	2.5543	0.0961
Vail Resorts	0.80	0.68	2.5433	0.0957
NVR, Inc.	0.85	0.70	2.8597	0.1076
Pinnacle Foods	0.75	0.62	2.5873	0.0974
Texas Roadhouse	0.85	0.73	2.9257	0.1101
Average	0.78	0.63	2.7600	0.1000
Proxy Group of Six Water Companies	0.73	0.54	2.7683	0.1042

Source of Information:

Valueline Proprietary Database, September 2018

Carolina Water Service, Inc. of North Carolina
Summary of Cost of Equity Models Applied to
Proxy Group of Seventeen Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Six Water Companies

<u>Principal Methods</u>	<u>Proxy Group of Seventeen Non- Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	13.79 %
Risk Premium Model (RPM) (2)	12.32
Capital Asset Pricing Model (CAPM) (3)	11.52
	Mean <u>12.54 %</u>
	Median <u>12.32 %</u>
	Average of Mean and Median <u>12.43 %</u>

Notes:

- (1) From page 27 of this Schedule.
- (2) From page 28 of this Schedule.
- (3) From page 31 of this Schedule.

Carolina Water Service, Inc. of North Carolina
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Average Dividend Yield</u>	<u>Value Line Projected Five Year Growth in EPS</u>	<u>Reuters Mean Consensus Projected Five Year Growth Rate in EPS</u>	<u>Zack's Five Year Projected Growth Rate in EPS</u>	<u>Yahoo Finance Projected Five Year Growth in EPS</u>	<u>Average Projected Five Year Growth Rate in EPS</u>	<u>Adjusted Dividend Yield</u>	<u>Indicated Common Equity Cost Rate (1)</u>
AutoZone Inc.	- %	12.50 %	10.93 %	12.20 %	10.93 %	11.64 %	- %	NA %
Cheesecake Factory	2.45	7.00	10.78	14.40	10.78	10.74	2.58	13.32
Choe Global Markets	1.23	17.00	14.20	11.80	14.20	14.30	1.32	15.62
Cracker Barrel	3.35	12.00	4.50	7.20	7.25	7.74	3.48	11.22
Chemed Corp.	0.38	13.00	10.00	10.00	10.00	10.75	0.40	11.15
C.H. Robinson	1.95	10.50	13.22	9.00	13.21	11.48	2.06	13.54
Campbell Soup	3.44	3.50	NMF	5.90	NMF	4.70	3.52	8.22
Dollar General	1.11	13.00	15.13	13.60	15.13	14.22	1.19	15.41
Dunkin' Brands Group	1.92	12.50	13.35	12.40	13.35	12.90	2.04	14.94
Darden Restaurants	2.66	12.00	12.40	9.30	12.40	11.53	2.81	14.34
Forrester Research	1.73	8.00	NA	12.00	12.00	10.67	1.82	12.49
HCA Holdings	1.12	14.00	15.08	12.20	15.08	14.09	1.20	15.29
Hormel Foods	1.96	9.50	10.50	8.30	10.50	9.70	2.06	11.76
Vail Resorts	2.04	18.00	23.09	NA	23.09	21.39	2.26	23.65
NVR, Inc.	-	17.50	19.00	15.00	19.00	17.63	-	NA
Pinnacle Foods	1.96	10.00	9.67	8.00	9.67	9.34	2.05	11.39
Texas Roadhouse	1.47	20.50	17.20	11.80	17.20	16.68	1.59	18.27
							Mean	<u>14.04 %</u>
							Median	<u>13.54 %</u>
							Average of Mean and Median	<u>13.79 %</u>

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the utility proxy group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of September 28, 2018. The dividend yield is then adjusted by 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 09/28/2018
www.zacks.com Downloaded on 09/28/2018
www.yahoo.com Downloaded on 09/28/2018

Carolina Water Service, Inc. of North Carolina
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 Seventeen Non- Price Regulated Companies</u>
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	5.61 %
2.	Equity Risk Premium (2)	<u>6.71</u>
3.	Risk Premium Derived Common Equity Cost Rate	<u><u>12.32 %</u></u>

Notes: (1) Average forecast of Baa corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated October 1, 2018 and June 1, 2018 (see pages 18 and 19 of this Schedule). The estimates are detailed below.

Fourth Quarter 2018	5.10 %
First Quarter 2019	5.30
Second Quarter 2019	5.40
Third Quarter 2019	5.50
Fourth Quarter 2019	5.60
First Quarter 2020	5.60
2020-2024	6.10
2025-2029	<u>6.30</u>
Average	<u><u>5.61 %</u></u>

(2) From page 30 of this Schedule.

Carolina Water Service, Inc. of North Carolina
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Moody's</u> <u>Long-Term Issuer Rating</u> <u>September 2018</u>		<u>Standard & Poor's</u> <u>Long-Term Issuer Rating</u> <u>September 2018</u>	
	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>
AutoZone Inc.	Baa1	8.0	BBB	9.0
Cheesecake Factory	NR	--	NR	--
Cboe Global Markets	Baa1	8.0	A-	7.0
Cracker Barrel	WR	--	NR	--
Chemed Corp.	WR	--	NR	--
C.H. Robinson	Baa2	9.0	BBB+	8.0
Campbell Soup	Baa2	9.0	BBB-	10.0
Dollar General	Baa2	9.0	BBB	9.0
Dunkin' Brands Group	NR	--	NR	--
Darden Restaurants	Baa2	9.0	BBB	9.0
Forrester Research	NR	--	NR	--
HCA Holdings	Ba2	12.0	BB+	11.0
Hormel Foods	A1	5.0	A	6.0
Vail Resorts	NR	--	NR	--
NVR, Inc.	Baa2	9.0	BBB+	8.0
Pinnacle Foods	NR	--	BB-	13.0
Texas Roadhouse	NR	--	NR	--
Average	Baa2	8.7	BBB	9.0

Notes:

(1) From page 6 of Schedule DWD-4 (direct testimony).

Source of Information:

Bloomberg Professional Services

Carolina Water Service, Inc. of North Carolina
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Seventeen Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Seventeen Non- Price Regulated Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.70 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.28
3.	Ibbotson Equity Risk Premium based on PRPM (3)	6.41
5.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	6.01
6.	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies (5)	11.64
7.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>10.30</u>
8.	Conclusion of Equity Risk Premium	7.89 %
9.	Adjusted Beta (7)	<u>0.85</u>
10.	Forecasted Equity Risk Premium	<u><u>6.71 %</u></u>

Notes:

- (1) From note 1 of page 16 of this Schedule.
- (2) From note 2 of page 16 of this Schedule.
- (3) From note 3 of page 16 of this Schedule.
- (4) From note 4 of page 16 of this Schedule.
- (5) From note 5 of page 16 of this Schedule.
- (6) From note 6 of page 16 of this Schedule.
- (7) Average of mean and median beta from page 31 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2018 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, October 1, 2018 and June 1, 2018
Bloomberg Professional Services

Carolina Water Service, Inc. of North Carolina
 Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Six Water Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Bloomberg Beta</u>	<u>Average Beta</u>	<u>Market Risk Premium (1)</u>	<u>Risk-Free Rate (2)</u>	<u>Traditional CAPM Cost Rate</u>	<u>ECAPM Cost Rate</u>	<u>Indicated Common Equity Cost Rate (3)</u>
AutoZone Inc.	0.80	0.83	0.82	8.99 %	3.71 %	11.08 %	11.48 %	11.28 %
Cheesecake Factory	0.75	0.91	0.83	8.99	3.71	11.17	11.55	11.36
Cboe Global Markets	0.75	1.19	0.97	8.99	3.71	12.43	12.50	12.46
Cracker Barrel	0.80	0.98	0.89	8.99	3.71	11.71	11.96	11.83
Chemed Corp.	0.80	0.94	0.87	8.99	3.71	11.53	11.82	11.68
C.H. Robinson	0.80	0.94	0.87	8.99	3.71	11.53	11.82	11.68
Campbell Soup	0.70	0.55	0.62	8.99	3.71	9.28	10.14	9.71
Dollar General	0.90	0.71	0.81	8.99	3.71	10.99	11.42	11.20
Dunkin' Brands Group	0.65	0.94	0.79	8.99	3.71	10.81	11.28	11.05
Darden Restaurants	0.85	0.91	0.88	8.99	3.71	11.62	11.89	11.75
Forrester Research	0.70	1.06	0.88	8.99	3.71	11.62	11.89	11.75
HCA Holdings	0.85	0.65	0.75	8.99	3.71	10.45	11.01	10.73
Hormel Foods	0.75	0.58	0.67	8.99	3.71	9.73	10.47	10.10
Vail Resorts	0.85	0.97	0.91	8.99	3.71	11.89	12.09	11.99
NVR, Inc.	0.85	0.88	0.87	8.99	3.71	11.53	11.82	11.68
Pinnacle Foods	0.80	0.65	0.73	8.99	3.71	10.27	10.88	10.57
Texas Roadhouse	0.85	1.04	0.94	8.99	3.71	12.16	12.29	12.23
Mean			<u>0.83</u>			<u>11.16 %</u>	<u>11.55 %</u>	<u>11.36 %</u>
Median			<u>0.87</u>			<u>11.53 %</u>	<u>11.82 %</u>	<u>11.68 %</u>
Average of Mean and Median			<u>0.85</u>			<u>11.35 %</u>	<u>11.69 %</u>	<u>11.52 %</u>

Notes:

- (1) From note 1, page 22 of this Schedule.
- (2) From note 2, page 22 of this Schedule.
- (3) Average of CAPM and ECAPM cost rates.

Carolina Water Service, Inc. of North Carolina
Summary of Cost of Equity Models Applied to
Proxy Group of Seventeen Non-Price Regulated Companies
Comparable in Total Risk to the
Mr. Hinton's Water Proxy Group

<u>Principal Methods</u>	<u>Proxy Group of Seventeen Non- Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	14.13 %
Risk Premium Model (RPM) (2)	12.32
Capital Asset Pricing Model (CAPM) (3)	<u>11.52</u>
	Mean <u>12.66 %</u>
	Median <u>12.32 %</u>
	Average of Mean and Median <u>12.49 %</u>

Notes:

- (1) From page 2 of this Schedule.
- (2) From page 28 of Schedule DWD-1R
- (3) From page 31 of Schedule DWD-1R

Carolina Water Service, Inc. of North Carolina
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Mr. Hinton's Water Proxy Group

	[1]	[2]	[3]	[4]	[5]
<u>Proxy Group of Seventeen Non-Price Regulated Companies</u>	<u>Average Dividend Yield</u>	<u>Value Line Projected Five Year Growth in EPS</u>	<u>Yahoo! Finance Projected Five Year Growth in EPS</u>	<u>Average Projected Five Year Growth Rate in EPS</u>	<u>Indicated Common Equity Cost Rate (1)</u>
AutoZone Inc.	- %	12.50 %	10.93 %	11.72 %	NA %
Cheesecake Factory	2.54	7.00	10.78	8.89	11.43
Cboe Global Markets	1.14	17.00	14.20	15.60	16.74
Cracker Barrel	3.34	12.00	7.25	9.63	12.97
Chemed Corp.	0.43	13.00	10.00	11.50	11.93
C.H. Robinson	2.12	10.50	13.21	11.86	13.98
Campbell Soup	3.43	3.50	NMF	3.50	6.93
Dollar General	1.18	13.00	15.13	14.07	15.25
Dunkin' Brands Group	2.06	12.50	13.35	12.93	14.99
Darden Restaurants	2.67	12.00	12.40	12.20	14.87
Forrester Research	1.84	8.00	12.00	10.00	11.84
HCA Holdings	1.20	14.00	15.08	14.54	15.74
Honnell Foods	2.11	9.50	10.50	10.00	12.11
Vail Resorts	2.04	18.00	23.09	20.55	22.59
NVR, Inc.	-	17.50	19.00	18.25	NA
Pinnacle Foods	2.32	10.00	9.67	9.84	12.16
Texas Roadhouse	1.60	20.50	17.20	18.85	20.45
				Mean	<u>14.27 %</u>
				Median	<u>13.98 %</u>
				Average of Mean and Median	<u>14.13 %</u>

NA= Not Available
NMF= Not Meaningful Figure

(1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the corrected application of the DCF to Mr. Hinton's water proxy group. The dividend yield is derived by using the 13 week average price and the projected dividend as of September 28, 2018 and is added to the average expected EPS growth rate from Value Line and Yahoo! Finance.

Source of Information: Value Line Investment Survey
www.yahoo.com Downloaded on 09/28/2018

Carolina Water Service, Inc. of North Carolina
Corrected DCF Analysis Reflecting Exclusive Reliance on
Expected Growth in EPS

Line No.	Company Name	Yield	Value		Forecast EPS Growth Rate
			Line Forecast	Yahoo Forecast	
			EPS 5- Yr.	EPS 5-Yr.	
1	American States Water	1.9	6.0	4.0	5.0
2	American Water Works	2.2	10.0	8.1	9.1
3	Aqua America	2.5	7.5	5.0	6.3
4	California Water	1.9	9.5	9.8	9.7
5	Middlesex Water	2.1	8.0	2.7	5.4
6	York Water	2.1	9.0	4.9	7.0
	Average	2.1	8.3	5.8	7.0
	DCF Result		10.4	7.9	9.1

Source of Information:
Hinton Exhibit JRH-3

Carolina Water Service, Inc. of North Carolina
**Demonstration of the Inadequacy of
a DCF Return Rate Related to Book Value
When Market Value is Greater than Book Value**

		[A]	[B]
Line No.		Based on Mr. Hinton's Water Proxy Group	
		Market Value	Book Value
1.	Per Share	\$ 50.04 (1)	\$ 15.56 (2)
2.	DCF Cost Rate (3)	8.70%	8.70%
3.	Return in Dollars (4)	\$ 4.354	\$ 1.354
4.	Dividends (5)	\$ 1.051	\$ 1.051
5.	Growth in Dollars (6)	\$ 3.303	\$ 0.303
6.	Return on Market Value (7)	8.70%	2.71%
7.	Rate of Growth on Market Value (8)	6.60%	0.61%

Notes:

- (1) Average of the average 13-week prices from Value Line as used by Mr. Hinton.
- (2) Average book value dividing total common equity at year-end 2017 by common shares outstanding at year-end 2017 for each proxy group company.
- (3) Mr. Hinton's Recommended DCF cost rate on from Hinton Exhibit JRH-3.
- (4) Line 1 x Line 2.
- (5) Dividends are based on a 2.10% dividend yield, from Hinton Exhibit JRH-3.
- (6) Line 3 - Line 4.
- (7) Line 3 / Line 1.
- (8) Line 5 / Line 1.

Carolina Water Service, Inc. of North Carolina
 Calculation of Indicated DCF Applied to Book Value Capital Structure
 of Mr. Hinton's Proxy Group

Un-lever Indicated Market Capital Structure DCF

$$\begin{aligned}
 K_u &= K_e - \left(\left(K_u - i \right) \left(1 - t \right) \frac{D}{E} \right) - \left(K_u - d \right) \frac{P}{E} \\
 K_u &= 8.70\% - \left(\left(K_u - 5.25\% \right) \left(1 - 21\% \right) \frac{22.20\%}{77.74\%} \right) - \left(K_u - 7.26\% \right) \frac{0.06\%}{77.74\%} \\
 K_u &= 8.70\% - \left(\left(K_u - 5.25\% \right) 79.00\% \right) \frac{28.55\%}{77.74\%} - \left(K_u - 7.26\% \right) \frac{0.08\%}{77.74\%} \\
 K_u &= 8.70\% - \left(79.00\% * K_u - 4.1463\% \right) \frac{28.55\%}{77.74\%} - \left(0.08\% * K_u - 0.01\% \right) \\
 K_u &= 8.70\% - \left(22.56\% * K_u - 1.18\% \right) \frac{28.55\%}{77.74\%} - \left(0.08\% * K_u - 0.01\% \right) \\
 K_u &= 8.70\% - 22.56\% * K_u + 1.18\% - 0.08\% * K_u + 0.01\% \\
 K_u &= 9.89\% - 22.64\% * K_u \\
 122.64\% * K_u &= 9.89\% \\
 K_u &= 8.06\%
 \end{aligned}$$

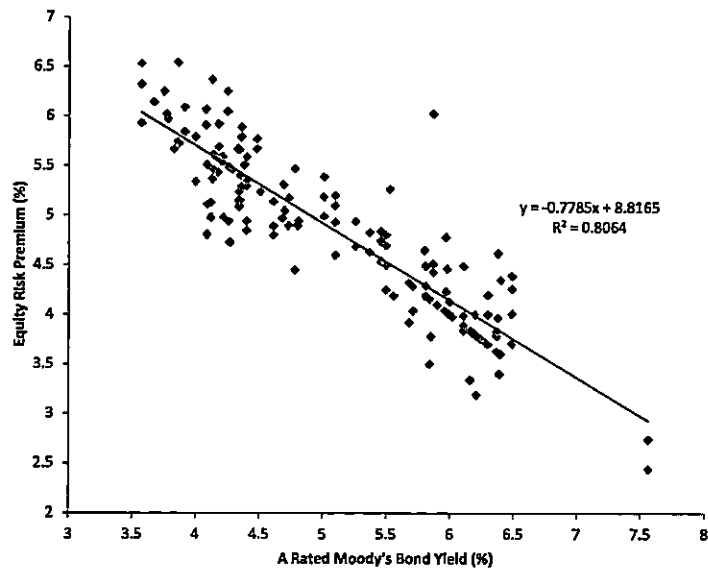
Re-lever to Indicated Book Value Capital Structure DCF

$$\begin{aligned}
 K_e &= K_u + \left(\left(K_u - i \right) \left(1 - t \right) \frac{D}{E} \right) + \left(K_u - d \right) \frac{P}{E} \\
 K_e &= 8.06\% + \left(\left(8.06\% - 5.25\% \right) \left(1 - 21\% \right) \frac{45.27\%}{54.61\%} \right) + \left(8.06\% - 7.26\% \right) \frac{0.12\%}{54.61\%} \\
 K_e &= 8.06\% + \left(2.82\% \right) \frac{79\%}{54.61\%} \frac{82.89\%}{54.61\%} + \left(0.80\% \right) \frac{0.22\%}{54.61\%} \\
 K_e &= 8.06\% + \left(2.22\% \right) \frac{82.89\%}{54.61\%} + \left(0.00\% \right) \\
 K_e &= 8.06\% + \left(1.84\% \right) + \left(0.00\% \right) \\
 K_e &= 9.91\%
 \end{aligned}$$

Where:

- Ku = Un-levered (i.e., 100% equity) cost of common equity
- Ke = Market determined cost of common equity
- i = Cost of debt
- t = Income tax rate
- D = Debt ratio
- E = Equity ratio
- d = Cost of preferred stock
- P = Preferred equity ratio

Carolina Water Service, Inc. of North Carolina
Prediction of Equity Risk Premiums Relative to
Moody's A Rated Utility Bond Yields



Constant	Slope	Prospective A Rated Utility Bond (1)	Prospective Equity Risk Premium	Indicated ROE
8.816452 %	-0.77848	5.07 %	4.87 %	9.94 %

Notes:

(1) Prospective Moody's A rated utility bond is calculated by first calculating the

	Aaa Bonds
Third Quarter 2018	4.10%
Fourth Quarter 2018	4.30%
First Quarter 2019	4.50%
Second Quarter 2019	4.60%
Third Quarter 2019	4.70%
Fourth Quarter 2019	4.80%
2020-2024	5.30%
2025-2029	5.40%
	<u>4.71%</u>

After calculating the prospective Moody's Aaa corporate yield, we apply a recent spread between Aaa corporate bonds and A rate utility bonds to arrive at a prospective Moody's A rated utility bond.

	Aaa Corp	A Utility	Spread
Jun-18	3.96%	4.27%	0.31%
Jul-18	3.87%	4.27%	0.40%
Aug-18	3.88%	4.26%	<u>0.38%</u>
Average			<u>0.36%</u>
Prospective Moody's A rated utility bond yield			<u>5.07%</u>

Sources of Information:

Blue Chip Financial Forecasts September 1, 2018 and June 1, 2018
Hinton Exhibit JRH-4
Bloomberg Professional Services

Carolina Water Service, Inc. of North Carolina
Calculation of Range of ROEs needed
to Obtain a Single "A" Rating

	Capitalization Ratio (1) (a)	Embedded Cost (b)	Overall Cost Rate (2) (c)	Pre-Tax Cost of Capital (d)
<u>Company Proposed Rates</u>				
Debt	49.09%	5.68% (1)	2.79%	2.79%
Equity	50.91%	10.80% (3)	5.50%	7.17% (4)
Total	100.00%		8.29%	9.96%
				Pre-Tax Interest Coverage 3.71
<u>Public Staff Proposed Rates</u>				
Debt	49.09%	5.68% (1)	2.79%	2.79%
Equity	50.91%	9.20% (5)	4.68%	6.11% (4)
Total	100.00%		7.47%	8.90%
				Pre-Tax Interest Coverage 3.31
<u>Highest Rate Scenario</u>				
Debt	49.09%	5.68% (1)	2.79%	2.79%
Equity	50.91%	20.08%	10.22%	13.34% (4)
Total	100.00%		13.01%	16.13%
				Pre-Tax Interest Coverage 6.00
<u>Lowest Rate Scenario</u>				
Debt	49.09%	5.68% (1)	2.79%	2.79%
Equity	50.91%	7.94%	4.04%	5.28% (4)
Total	100.00%		6.83%	8.07%
				Pre-Tax Interest Coverage 3.00

Notes

- (1) From Schedule DWD-1R, page 1.
- (2) Column (a) x Column (b)
- (3) Low end of updated recommended range as shown on Schedule DWD-1R, page 1.
- (4) Overall Equity Cost Rate x Tax Conversion Factor
- (5) Hinton Direct Testimony

Carolina Water Services, Inc. of North Carolina
 Portfolio Returns by Size and Risk Premiums over CAPM Results
 As Controlled By Duff and Phelps 2018 Guide to Cost of Capital

Portfolio Rank by Size	B-1		B-2		B-3		B-4		B-5		B-6		B-7		B-8	
	Average Mkt. Value (in \$millions)	Smoothed Premium over CAPM	Average Book Val. (in \$millions)	Smoothed Premium over CAPM	5 yr Average Net Inc. (in \$millions)	Smoothed Premium over CAPM	MVIC (in \$millions)	Smoothed Premium over CAPM	Total Assets (in \$millions)	Smoothed Premium over CAPM	5 yr Average EBITDA (in \$millions)	Smoothed Premium over CAPM	Sales (in \$millions)	Smoothed Premium over CAPM	Average Number of Employees	Smoothed Premium over CAPM
1	246,026	0.00%	70,131	1.27%	10,793	1.43%	282,024	0.11%	172,815	1.25%	23,040	1.52%	135,727	1.57%	359,432	0.81%
2	70,278	0.69%	21,281	1.81%	2,897	1.98%	69,370	0.87%	54,941	1.77%	6,661	2.02%	39,303	2.11%	112,125	1.66%
3	41,102	0.89%	14,015	1.89%	1,769	2.18%	62,769	1.21%	37,285	1.66%	4,484	2.21%	21,626	2.39%	66,351	1.68%
4	27,190	1.23%	8,416	2.17%	1,205	2.34%	37,985	1.43%	28,876	2.09%	3,334	2.33%	16,108	2.53%	48,103	2.10%
5	21,248	1.48%	6,957	2.31%	871	2.49%	28,258	1.62%	18,380	2.25%	2,398	2.47%	12,532	2.64%	38,021	2.28%
6	15,920	1.69%	5,378	2.42%	672	2.69%	21,988	1.79%	14,739	2.37%	1,757	2.60%	10,088	2.74%	29,323	2.44%
7	12,280	1.89%	4,470	2.60%	533	2.86%	17,124	1.95%	11,278	2.49%	1,383	2.58%	8,182	2.70%	22,444	2.58%
8	10,250	2.03%	3,543	2.61%	420	2.78%	13,951	2.08%	9,212	2.49%	1,165	2.77%	6,839	2.92%	18,793	2.71%
9	8,702	2.15%	2,887	2.68%	342	2.85%	11,240	2.29%	7,602	2.66%	780	2.66%	5,817	2.89%	15,682	2.83%
10	7,220	2.29%	2,537	2.76%	289	2.93%	9,461	2.34%	6,571	2.66%	624	2.73%	5,040	3.07%	13,534	2.98%
11	6,058	2.42%	2,173	2.83%	248	3.00%	8,198	2.43%	5,591	2.81%	495	2.81%	4,291	3.07%	12,220	2.98%
12	5,049	2.55%	1,810	2.89%	223	3.04%	7,024	2.53%	4,715	2.89%	369	3.00%	3,379	3.14%	10,657	3.02%
13	4,279	2.69%	1,533	2.95%	184	3.10%	5,783	2.69%	4,143	2.89%	289	3.18%	3,139	3.29%	9,535	3.16%
14	3,693	2.79%	1,317	3.03%	169	3.16%	4,939	2.79%	3,653	3.02%	229	3.02%	2,792	3.34%	8,108	3.26%
15	3,118	2.82%	1,219	3.09%	145	3.22%	4,359	2.89%	3,078	3.02%	182	3.16%	2,192	3.39%	7,021	3.34%
16	2,711	3.03%	1,078	3.14%	120	3.24%	3,729	3.07%	2,639	3.16%	148	3.25%	1,792	3.44%	6,100	3.43%
17	2,389	3.12%	934	3.20%	103	3.36%	3,109	3.24%	2,314	3.22%	115	3.30%	2,242	3.44%	5,213	3.53%
18	2,052	3.24%	803	3.27%	88	3.43%	2,660	3.17%	1,915	3.20%	93	3.22%	1,809	3.59%	4,389	3.65%
19	1,709	3.37%	674	3.35%	68	3.53%	2,257	3.28%	1,581	3.40%	72	3.40%	1,641	3.69%	3,521	3.76%
20	1,449	3.50%	545	3.44%	54	3.62%	1,899	3.40%	1,305	3.46%	58	3.46%	1,140	3.76%	2,452	3.82%
21	1,190	3.65%	454	3.53%	42	3.73%	1,547	3.53%	1,083	3.57%	42	3.59%	934	3.76%	2,245	4.08%
22	908	3.85%	373	3.61%	33	3.83%	1,212	3.69%	792	3.71%	31	3.71%	751	3.85%	1,771	4.23%
23	683	4.05%	298	3.71%	24	3.95%	882	3.90%	597	3.84%	21	3.84%	561	4.09%	1,278	4.44%
24	456	4.37%	212	3.87%	16	4.13%	599	4.15%	418	4.00%	16	4.00%	372	4.28%	832	4.72%
25	148	5.22%	77	4.32%	5	4.59%	198	4.88%	159	4.44%	16	4.57%	124	4.79%	265	5.45%

Mr. Hiltner's Water Proxy Group	B-1 Value	Portfolio Ranking	B-2 Value	Portfolio Ranking	B-3 Value	Portfolio Ranking	B-4 Value	Portfolio Ranking	B-5 Value	Portfolio Ranking	B-6 Value	Portfolio Ranking	B-7 Value	Portfolio Ranking	B-8 Value	Portfolio Ranking
OWS/NC	\$ 4,760	12-13	\$ 1,488	13-14	\$ 134	15-16	\$ 6,648	12-13	\$ 5,181	11-12	\$ 385	14-15	\$ 909	21	1,797	22
Indicated Risk Premium Relative to Mr. Hiltner's Water Proxy Group	2.18%		1.33%		1.35%		1.92%		1.59%		1.35%		0.94%		1.22%	

Sources of Information:
 Duff & Phelps 2018 Valuation Handbook Exhibit B-1 through B-8
 SNL Financial
 Company Annual Reports

Carolina Water Service, Inc. of North Carolina
R-Squareds of Mr. Hinton's Proxy Group

<u>Mr. Hinton's Water Proxy Group</u>	<u>R-Squared</u>
American States Water Co.	0.1043
American Water Works	0.0664
Aqua America inc.	0.1153
California Water Service Group	0.1023
Middlesex Water	0.0863
York Water Company	<u>0.0896</u>
Average	<u>0.0941</u>

Source of Information: Value Line Proprietary Database, September 2018

Carolina Water Service, Inc. of North Carolina
Rate Mechanisms in Place at Proxy Group Operating Subsidiaries

Ticker	Company (bold if parent)	State	Decoupling?	Mechanism Name	Type of Mechanism	Source
AWR	American States Water Company					
	Golden State Water Company	CA	Yes	Water Revenue Adjustment Mechanism (WRAM)	Full Decoupling (Actual to Target Revenues)	Annual Report 2017, tariff
AWK	American Water					
	California American Water	CA	Yes	Water Revenue Adjustment Mechanism (WRAM); Modified Cost Balancing Adjustment (MCBA)	Full Decoupling (Actual to Target Revenues)	Annual Report 2017, tariff
	Hawaii American Water	HI	No			Annual Report 2017
	Illinois American Water	IL	Yes	Volume Balancing Adjustment Rider (VBA); Qualifying Infrastructure Plant (QIP) Surcharge	Full Decoupling (Actual to Target Revenues); Capital Recovery	Annual Report 2017; tariff; Commission Order dated December 13, 2016, Docket No. 16-0083
	Indiana American Water	IN	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report 2017, tariff
	Iowa American Water	IA	No			Annual Report 2017, tariff
	Kentucky American Water	KY	No			Annual Report 2017, tariff
	Maryland American Water	MD	No			Annual Report 2017, tariff
	Michigan American Water	MI	No			Annual Report 2017
	Missouri American Water	MO	No	Infrastructure System Replacement Surcharge	Capital Recovery	Annual Report 2017, tariff
	New Jersey American Water	NJ	No			Annual Report 2017, tariff
	New York American Water	NY	Yes	Revenue And Production Cost Reconciliation Adjustment Clause and Property Tax Clause (RAPTC)	Full Decoupling (Actual to Target Revenues)	Commission Order in Case 07-W-0508 and Case 16-W-0258
	Pennsylvania American Water	PA	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report 2017, tariff
	Tennessee American Water	TN	No			Annual Report 2017, tariff
	Virginia American Water (1)	VA	No	Water & Wastewater Infrastructure Service Charge "WWISC" Rider	Capital Recovery	Annual Report 2017, tariff
	West Virginia American Water	WV	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report 2017, tariff
WTR	Aqua America					
	Aqua Illinois, Inc.	IL	No			Annual Report 2017
	Aqua Indiana, Inc.	IN	No			Annual Report 2017, tariff
	Aqua New Jersey, Inc.	NJ	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report 2017, tariff
	Aqua North Carolina, Inc.	NC	No	Water and Sewer Improvement Charge (WSIC and SSIC)		Annual Report 2017
	Aqua Ohio, Inc.	OH	No			Annual Report 2017
	Aqua Pennsylvania, Inc.	PA	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report 2017; tariff
	Aqua Texas, Inc.	TX	No			Annual Report 2017
	Aqua Virginia, Inc.	VA	No			Annual Report 2017
CWT	California Water Service Group					
	California Water Service Co.	CA	Yes	Water Revenue Adjustment Mechanism (WRAM); Modified Cost Balancing Adjustment (MCBA); and Sales Reconciliation Mechanism (SRM)	Full Decoupling (Actual to Target Revenues)	Annual Report 2017, tariff
	New Mexico Water Service Co.	NM	No			Annual Report 2017, tariff
	Washington Water Service Co.	WA	No			Annual Report 2017, tariff
	Hawaii Water Service Co.	HI	No			Annual Report 2017, tariff
MSEX	Middlesex Water Company					
	Middlesex Water Company	NJ	No			Annual Report 2017; tariff
	Southern Shores Water Company	DE	No			Annual Report 2017
	Tidewater Utilities, Inc.	DE	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report 2017; tariff
	Pinebluffs Water Company	NJ	No			Annual Report 2017; tariff
	Twin Lakes Utilities, Inc.	PA	No			Annual Report 2017; tariff
YORW	York Water Company	PA	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	

Notes:

(1) WWISC is only applicable to customers under the Alexandria Rate Schedule.