

OFFICIAL COPY

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1	T A B L E O F C O N T E N T S	
2	E X A M I N A T I O N S	
3		PAGE
4	DYLAN W. D'ASCENDIS (Cont'd.)	
5	Examination by Chair Mitchell.....	6
6	Examination by Mr. Grantmyre.....	16
7		
8	J. BRYCE MENDENHALL	
9	Direct Examination by Ms. Sanford.....	22
10	Examination by Commissioner Clodfelter.....	47
11	Examination by Commissioner Brown-Bland.....	50
12	Further Examination by Commissioner Clodfelter.....	61
13	Examination by Commissioner Gray.....	62
14	Examination by Chair Mitchell.....	63
15	Examination by Commissioner Hughes.....	64
16	Examination by Ms. Sanford.....	67
17		
18	GINA Y. CASSELBERRY	
19	Direct Examination by Ms. Holt.....	73
20	Examination by Commissioner Clodfelter.....	113
21	Examination by Commissioner Brown-Bland.....	113
22	Examination by Ms. Holt.....	115
23		
24		

1	T A B L E O F C O N T E N T S	
2	E X A M I N A T I O N S (Cont'd)	
3		PAGE
4	PANEL - WINDLEY E. HENRY, CHARLES JUNIS	
5	Direct Examination by Ms. Holt.....	117
6	Cross Examination by Mr. Allen.....	166
7	Cross Examination by Mr. Bennink.....	167
8	Redirect Examination by Ms. Holt.....	222
9		
10	E X H I B I T S	
11		IDENTIFIED/ADMITTED
12	D'Ascendis Exhibit 1.....	--/21
13	(Schedules DWD-1 to DWD-8)	
14	D'Ascendis Rebuttal Exhibit 1.....	--/21
15	(Schedules DWD-1R to DWD-12R)	
16	Public Staff D'Ascendis Cross Examination	
17	Exhibit Numbers 1-10.....	--/21
18	Casselberry Exhibit Numbers 1-28.....	75/116
19	Public Staff Henry Exhibit I.....	119/--
20	Revised Public Staff Henry Exhibit I.....	119/--
21		
22		
23		
24		

NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE: 12-1-19 DOCKET NO.: W-354 - Sub ³⁶³ 364, 365
ATTORNEY NAME and TITLE: Jo Anne Sanford
FIRM NAME: Sanford Law Office
ADDRESS: PO Box 28085
CITY: Raleigh STATE: NC ZIP CODE: 27611
APPEARING FOR: CW SNC

APPLICANT: ☒ COMPLAINANT: ☐ INTERVENOR: ☐
PROTESTANT: ☐ RESPONDENT: ☐ DEFENDANT: ☐

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NORTH CAROLINA UTILITIES COMMISSION

APPEARANCE SLIP

DATE: 12/2/19 DOCKET NO.: W-354, Sub ³⁶⁵₃₆₃ 364
ATTORNEY NAME and TITLE: Robert H. BENNINK, JR.
FIRM NAME: BENNINK LAW OFFICE
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CITY: CARY STATE: NC ZIP CODE: 27513
APPEARING FOR: CAROLINA WATER SERVICE, INC. OF NC

APPLICANT: ☒ COMPLAINANT: ☐ INTERVENOR: ☐
PROTESTANT: ☐ RESPONDENT: ☐ DEFENDANT: ☐

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SIGNATURE: Robert H. Bennink, Jr.

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NORTH CAROLINA UTILITIES COMMISSION

APPEARANCE SLIP

DATE: December 2, 2019 DOCKET NO.: W-354, Sub 363, 364, 365
ATTORNEY NAME and TITLE: MARK ALSON
FIRM NAME: Ice Miller LLP
ADDRESS: One American Square, Suite 2900
CITY: Indianapolis STATE: IN ZIP CODE: 46282
APPEARING FOR: CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

APPLICANT: X COMPLAINANT: ___ INTERVENOR: ___
PROTESTANT: ___ RESPONDENT: ___ DEFENDANT: ___

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SIGNATURE: Mark R. Alson

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE: 12/2/2019 DOCKET NO.: W-35456364

ATTORNEY NAME and TITLE: Brady Allen

FIRM NAME: The Allen Law Offices, PLLC

ADDRESS: 1514 Glenwood Ave Suite 200

CITY: Raleigh STATE: NC ZIP CODE: 27604

APPEARING FOR: Corolla Light Community Association, ~~Inc~~ Inc

APPLICANT: ___ COMPLAINANT: ___ INTERVENOR: ✓

PROTESTANT: ___ RESPONDENT: ___ DEFENDANT: ___

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NORTH CAROLINA UTILITIES COMMISSION
PUBLIC STAFF - APPEARANCE SLIP

DATE December 2, 2019 DOCKET #: W-354, Sub 364

PUBLIC STAFF MEMBER William E. Grantmyre

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

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WATER _____
COMMUNICATIONS _____
ELECTRIC _____
GAS _____
TRANSPORTATION _____
ECONOMICS _____
LEGAL william.grantmyre@psncuc.nc.gov
CONSUMER SERVICES _____

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1 Number of copies of confidential portion of
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***PLEASE INDICATE BELOW WHO HAS SIGNED A CONFIDENTIALITY
AGREEMENT. IF YOU DO NOT SIGN, YOU WILL NOT RECEIVE THE
CONFIDENTIAL PORTIONS!!!!



Signature of Public Staff Member

NORTH CAROLINA UTILITIES COMMISSION
PUBLIC STAFF - APPEARANCE SLIP

DATE December 2, 2019 DOCKET #: W-354, Sub 364

PUBLIC STAFF MEMBER Gina Holt

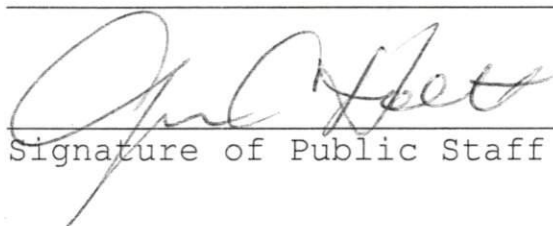
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PUBLIC STAFF - PLEASE INDICATE YOUR DIVISION AS WELL AS
YOUR EMAIL ADDRESS BELOW:

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WATER _____
COMMUNICATIONS _____
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GAS _____
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ECONOMICS _____
LEGAL gina.holt@psncuc.nc.gov
CONSUMER SERVICES _____

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Docket Search from the drop-down menu, and enter the
docket number.

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AGREEMENT. IF YOU DO NOT SIGN, YOU WILL NOT RECEIVE THE
CONFIDENTIAL PORTIONS!!!!



Signature of Public Staff Member

NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE: 12/2/19 DOCKET NO.: D-354 Sub 361

ATTORNEY NAME and TITLE: John L. Hlb, NC Public Staff

FIRM NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP CODE: _____

APPEARING FOR: North Carolina Public Staff

APPLICANT: ___ COMPLAINANT: ___ INTERVENOR: ___

PROTESTANT: ___ RESPONDENT: ___ DEFENDANT: ___

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SIGNATURE: John L. Hlb

(Signature required for distribution of ALL transcripts)

I/A

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 Service, Inc. of North Carolina
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at March 31, 2019

<u>Type Of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	52.04%	5.59% (1)	2.91%
Common Equity	<u>47.96%</u>	10.75% (2)	<u>5.16%</u>
Total	<u>100.00%</u>		<u>8.07%</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)	8.70%
2.	Risk Premium Model (RPM) (2)	10.62%
3.	Capital Asset Pricing Model (CAPM) (3)	10.21%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>11.78%</u>
5.	Indicated Common Equity Cost Rate before Adjustment for Size Risk	10.35%
6.	Size Risk Adjustment (5)	<u>0.40%</u>
7.	Recommended Common Equity Cost Rate after Adjustment for Size Risk	<u><u>10.75%</u></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)
2014 - 2018, Inclusive

	2018	2017	2016	2015	2014	
	(MILLIONS OF DOLLARS)					
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	\$2,806,355	\$2,520,354	\$2,397,831	\$2,285,766	\$2,178,876	
SHORT-TERM DEBT	\$198,340	\$212,952	\$175,872	\$117,184	\$94,428	
TOTAL CAPITAL EMPLOYED	<u>\$3,004,695</u>	<u>\$2,733,306</u>	<u>\$2,573,703</u>	<u>\$2,402,950</u>	<u>\$2,273,304</u>	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	4.852 %	4.97 %	5.182 %	5.248 %	5.393 %	
PREFERRED STOCK	5.92 %	5.91 %	5.91 %	5.91 %	5.67 %	
						5 YEAR AVERAGE
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	45.14 %	43.47 %	44.03 %	44.81 %	44.08 %	44.31 %
PREFERRED STOCK	0.11	0.12	0.13	0.13	0.14	0.12
COMMON EQUITY	54.75	56.41	55.84	55.06	55.78	55.57
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	48.62 %	47.48 %	46.82 %	46.30 %	46.28 %	47.10 %
PREFERRED STOCK	0.10	0.11	0.12	0.13	0.14	0.12
COMMON EQUITY	51.28	52.41	53.06	53.57	53.58	52.78
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	3.56 %	3.46 %	3.73 %	4.55 %	4.84 %	4.03 %
MARKET / AVERAGE BOOK RATIO	307.51	303.79	271.29	219.78	202.93	261.06
DIVIDEND YIELD	2.05	2.06	2.31	2.83	3.00	2.45
DIVIDEND PAYOUT RATIO	57.39	59.63	61.35	61.54	61.49	60.28
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.83 %	10.43 %	9.97 %	9.90 %	9.74 %	10.17 %
TOTAL DEBT / EBITDA (3)	3.98 x	3.43 x	3.42 x	3.46 x	3.54 x	3.56 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	23.84 %	25.57 %	23.90 %	26.23 %	26.00 %	25.11 %
TOTAL DEBT / TOTAL CAPITAL	48.62 %	47.48 %	46.82 %	46.30 %	46.28 %	47.10 %

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
2014 - 2018, Inclusive

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>5 YEAR AVERAGE</u>
<u>American States Water Co.</u>						
Long-Term Debt	36.54 %	37.75 %	39.40 %	41.15 %	39.15 %	38.80 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	63.46	62.25	60.60	58.85	60.85	61.20
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	56.55 %	55.81 %	54.74 %	53.89 %	52.70 %	54.74 %
Preferred Stock	0.05	0.07	0.09	0.11	0.15	0.09
Common Equity	43.40	44.12	45.17	46.00	47.15	45.17
Total Capital	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
<u>Artesian Resources Corporation</u>						
Long-Term Debt	43.42 %	42.17 %	42.71 %	44.23 %	45.81 %	43.67 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	56.58	57.83	57.29	55.77	54.19	56.33
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	52.74 %	43.40 %	45.83 %	44.69 %	40.46 %	45.42 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	47.26	56.60	54.17	55.31	59.54	54.58
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	38.94 %	38.65 %	38.91 %	40.44 %	41.55 %	39.70 %
Preferred Stock	0.59	0.64	0.68	0.69	0.71	0.66
Common Equity	60.47	60.71	60.41	58.87	57.74	59.64
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	42.68 %	43.02 %	42.60 %	44.46 %	44.81 %	43.51 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	57.32	56.98	57.40	55.54	55.19	56.49
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	45.14 %	43.47 %	44.03 %	44.81 %	44.08 %	44.31 %
Preferred Stock	0.11	0.12	0.13	0.13	0.14	0.12
Common Equity	54.75	56.41	55.84	55.06	55.78	55.57
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>

Source of Information
Annual Forms 10-K

Carolina Water Service, 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]
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.	1.57 %	8.00 %	6.00 %	6.00 %	6.00 %	6.50 %	1.62 %	8.12 %
American Water Works Company Inc	1.95	9.50	10.60	8.10	8.20	9.10	2.04	11.14
Artesian Resources Corporation	2.61	NA	NA	NA	4.00	4.00	2.66	6.66
California Water Service Group	1.52	8.50	NA	7.00	9.80	8.43	1.58	10.01
Middlesex Water Co.	1.70	7.50	NA	NA	2.70	5.10	1.74	6.84
York Water Co.	2.02	9.50	NA	NA	4.90	7.20	2.09	9.29
							Average	8.68 %
							Median	8.71 %
							Average of Mean and Median	8.70 %

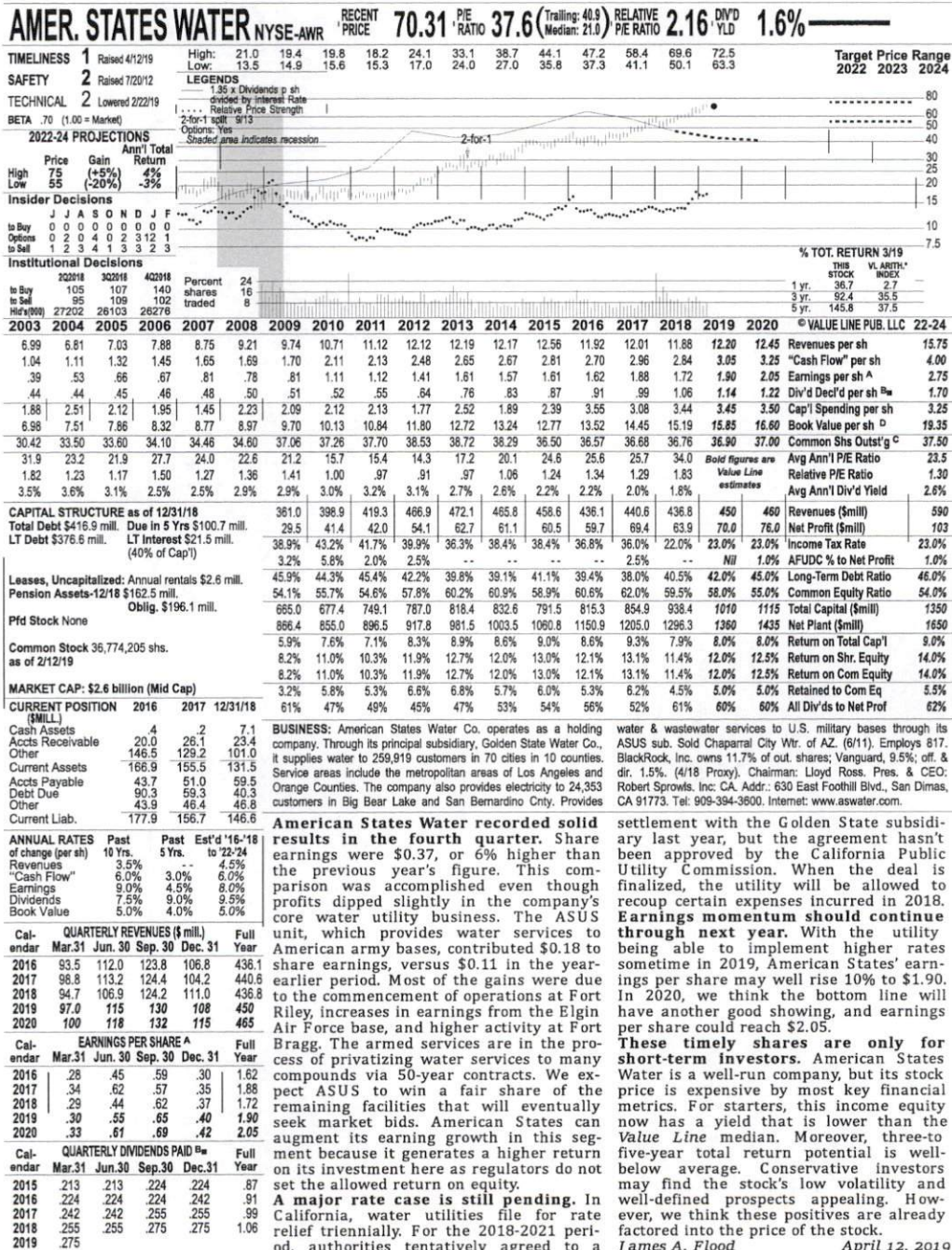
NA= Not Available

Notes:

- (1) Indicated dividend at 04/30/2019 divided by the average closing price of the last 60 trading days ending 04/30/2019 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., $1.57\% \times (1 + (1/2 \times 6.50\%)) = 1.62\%$.
- (5) Column 6 + column 7.

Source of Information:

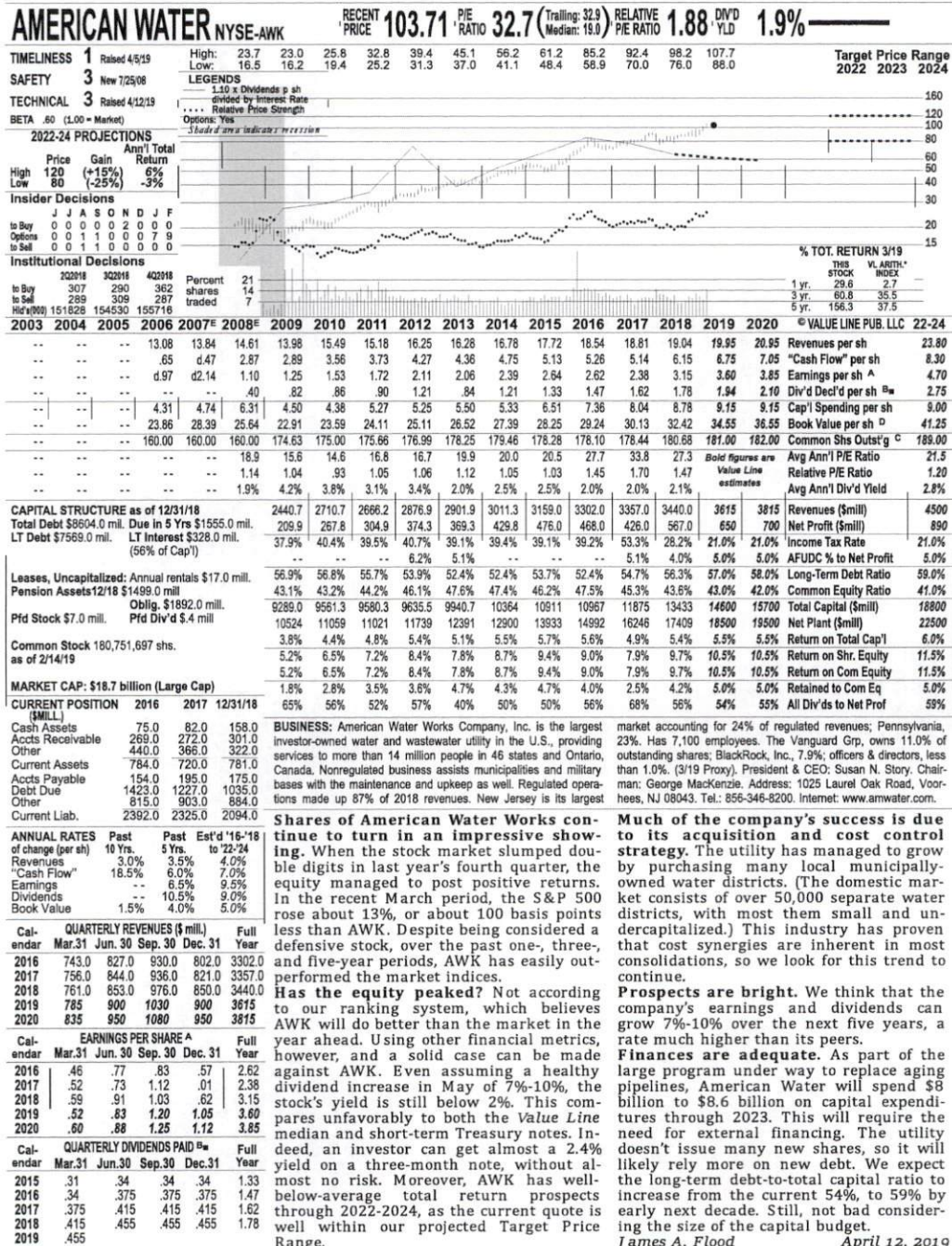
Value Line Investment Survey
www.reuters.com Downloaded on 04/30/2019
www.zacks.com Downloaded on 04/30/2019
www.yahoo.com Downloaded on 04/30/2019



(A) Primary earnings. Excludes nonrecurring gains/losses: '04, 7¢; '05, 13¢; '06, 3¢; '06, June, September, and December. * Div'd rein- (14¢), '10, (2¢); '11, 1¢. Next earnings report due mid-May.
(B) Dividends historically paid in early March, June, September, and December. * Div'd rein-vestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 12/31/18; \$1.1 million/\$0.03 a share.

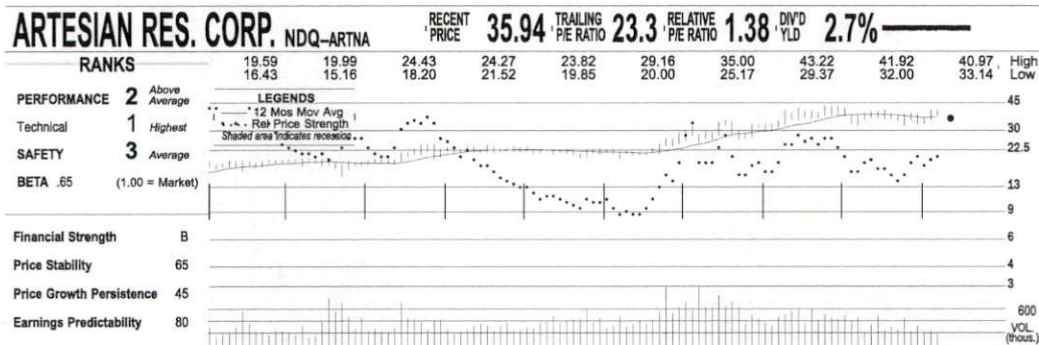
Company's Financial Strength A
Stock's Price Stability 85
Price Growth Persistence 80
Earnings Predictability 85

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(A) Diluted earnings. Excludes nonrecurring losses: '08, \$4.82; '09, \$2.63; '11, \$0.07. Disc. oper.: '06, (\$0.04); '11, \$0.03; '12, (\$0.10); '13, (\$0.01). GAAP used as of 2012. Next earnings report due mid-May. Quarterly earnings do not sum in '16 due to rounding. (C) In millions. (D) Includes intangibles. On 12/31/18: \$1.659 billion, \$9.18/share. (E) Pro forma numbers for '06 & '07. Company's Financial Strength B+ Stock's Price Stability 100 Price Growth Persistence 85 Earnings Predictability 85

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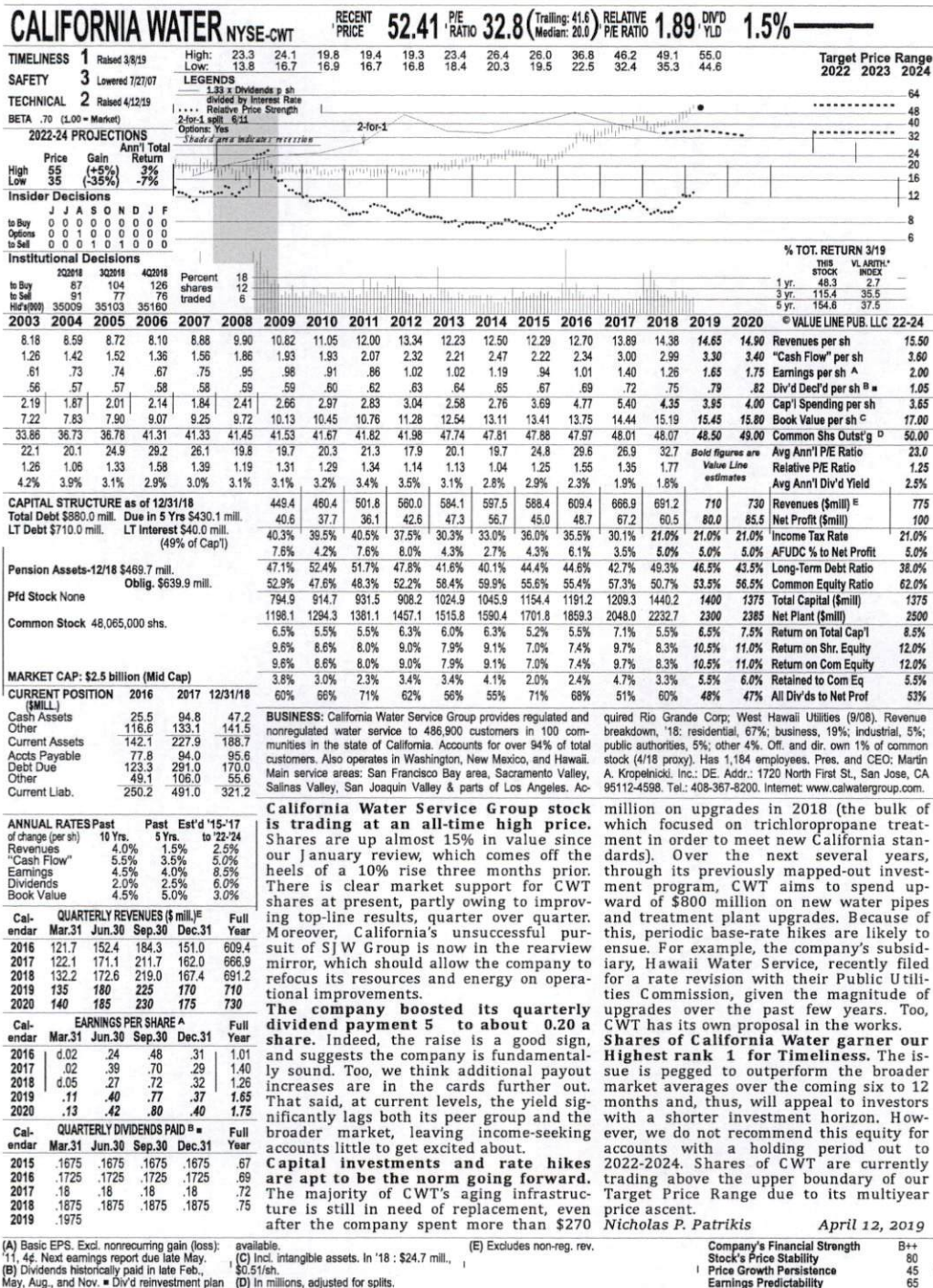


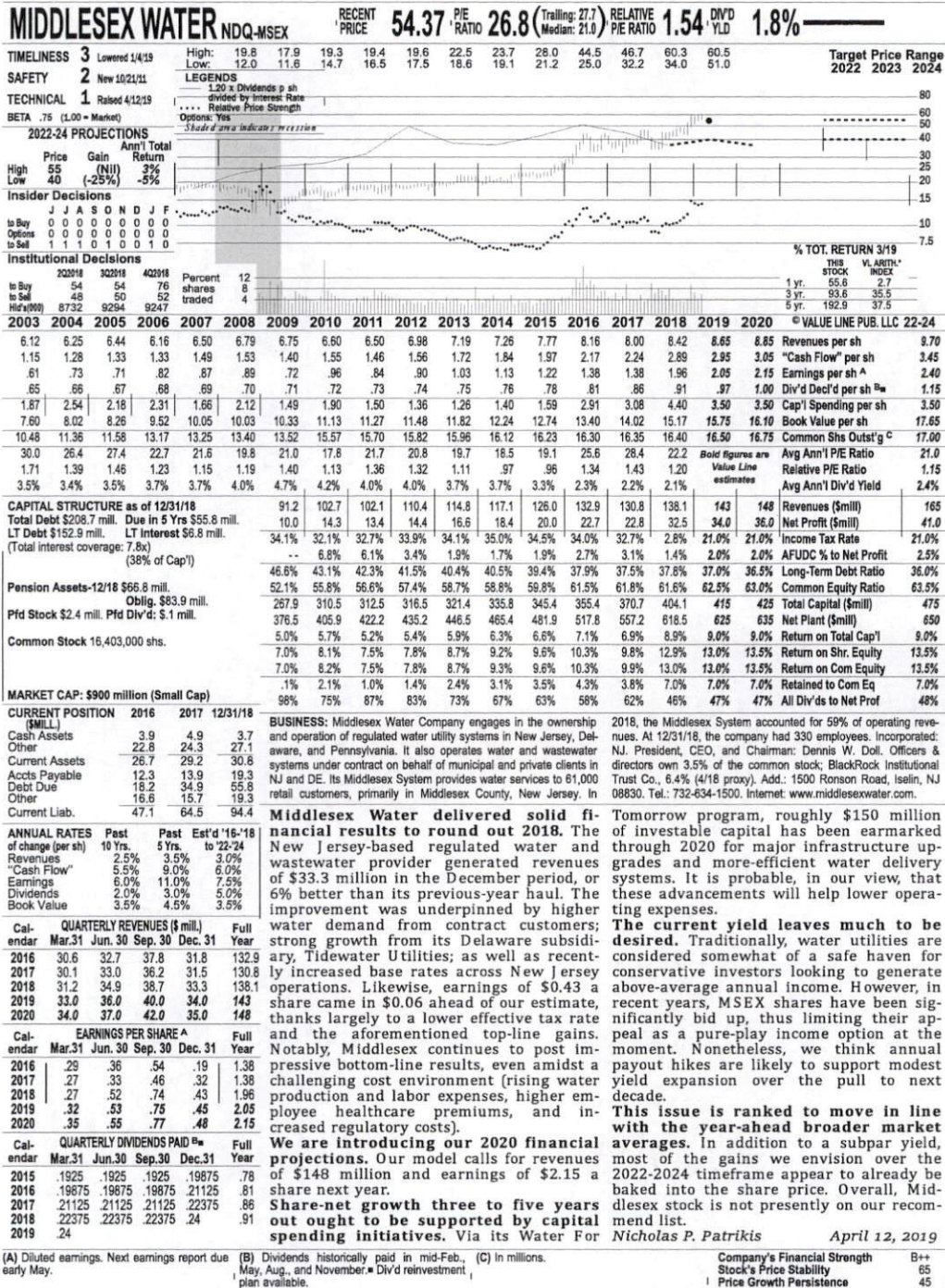
© VALUE LINE PUBLISHING LLC	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019/2020
SALES PER SH	8.48	7.56	8.10	7.82	8.13	8.50	8.67	8.92	8.69	
"CASH FLOW" PER SH	1.92	1.64	2.04	1.87	2.04	2.22	2.43	2.55	2.66	
EARNINGS PER SH	1.00	.83	1.13	.94	1.07	1.26	1.41	1.51	1.54	NA/NA
DIV'D DECL'D PER SH	.75	.76	.79	.82	.85	.87	.90	.93	.96	
CAP'L SPENDING PER SH	2.57	1.83	2.36	2.40	2.66	2.28	3.10	4.46	5.30	
BOOK VALUE PER SH	12.44	13.12	13.57	13.80	14.09	14.61	15.23	15.91	16.57	
COMMON SHS OUTST'G (MILL)	7.65	8.61	8.71	8.83	8.91	9.06	9.13	9.22	9.25	
AVG ANNU'L P/E RATIO	18.2	22.5	18.3	23.9	20.5	18.0	20.9	24.2	23.9	NA/NA
RELATIVE P/E RATIO	1.16	1.41	1.17	1.34	1.08	.93	1.14	1.21	1.35	
AVG ANNU'L DIV'D YIELD	4.1%	4.1%	3.8%	3.7%	3.9%	3.8%	3.1%	2.5%	2.6%	
SALES (\$MILL)	64.9	65.1	70.6	69.1	72.5	77.0	79.1	82.2	80.4	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.
OPERATING MARGIN	46.5%	45.5%	48.7%	47.0%	48.8%	43.0%	44.4%	44.6%	46.1%	
DEPRECIATION (\$MILL)	7.0	7.4	7.9	8.3	8.7	8.8	9.2	9.6	10.3	
NET PROFIT (\$MILL)	7.6	6.7	9.8	8.3	9.5	11.3	13.0	14.0	14.3	
INCOME TAX RATE	40.0%	40.8%	40.2%	40.2%	40.1%	—	—	—	—	
NET PROFIT MARGIN	11.7%	10.4%	14.0%	12.0%	13.1%	14.7%	16.4%	17.0%	17.8%	
WORKING CAP'L (\$MILL)	d27.9	d11.4	d11.4	d12.3	d13.5	d8.8	d4.7	d9.5	d21.6	
LONG-TERM DEBT (\$MILL)	105.1	106.5	106.3	105.5	105.0	103.6	102.3	105.6	115.9	
SHR. EQUITY (\$MILL)	95.1	113.0	118.2	121.8	125.6	132.3	139.0	146.6	153.3	
RETURN ON TOTAL CAP'L	5.6%	4.6%	5.9%	5.1%	5.5%	6.3%	6.7%	6.8%	6.5%	
RETURN ON SHR. EQUITY	8.0%	6.0%	8.3%	6.8%	7.6%	8.5%	9.3%	9.5%	9.3%	
RETAINED TO COM EQ	2.0%	.5%	2.5%	.9%	1.6%	2.6%	3.4%	3.7%	3.6%	
ALL DIV'DS TO NET PROF	75%	92%	70%	87%	79%	69%	63%	61%	62%	

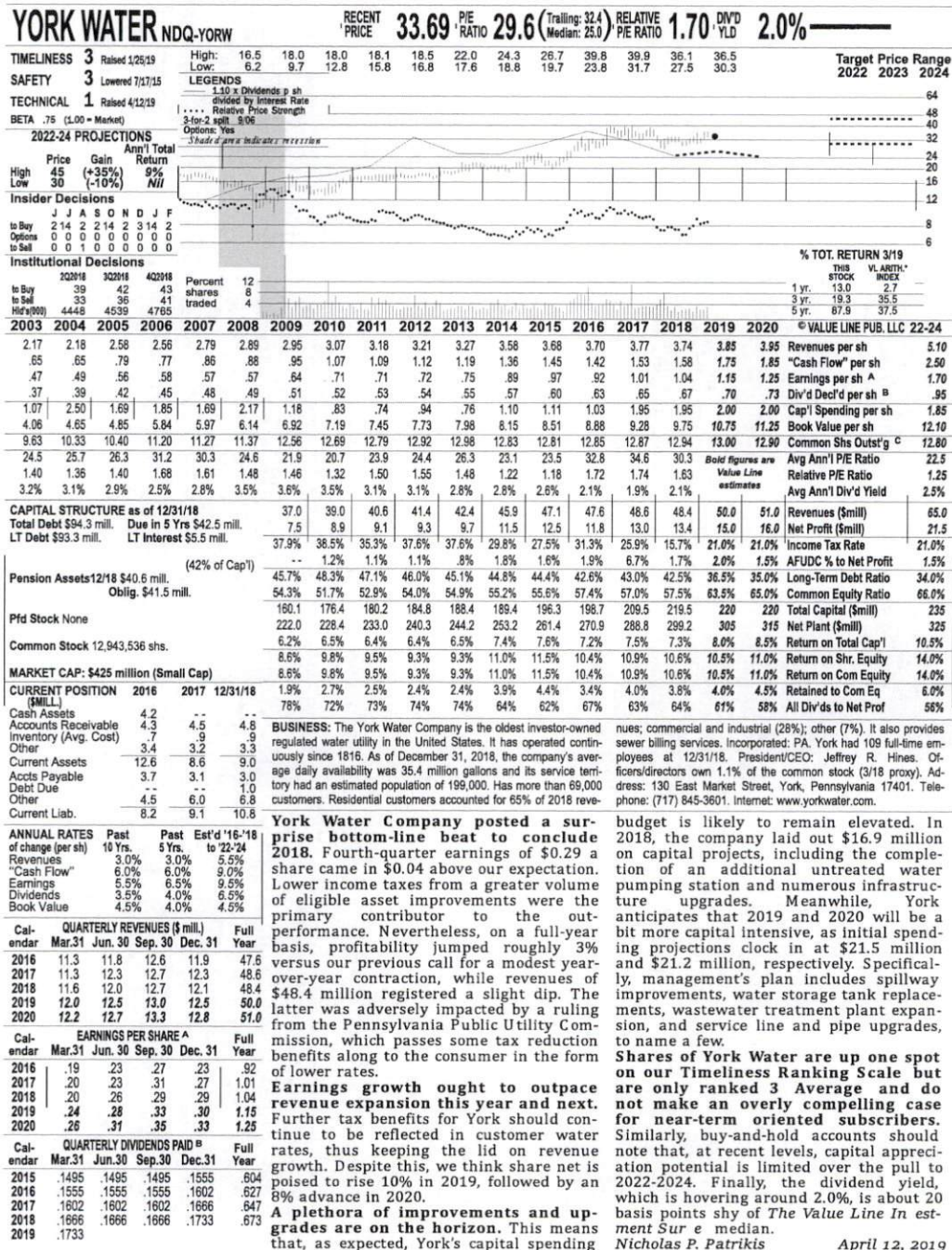
Note: No analyst estimates available.

ANNUAL RATES						INDUSTRY: Water Utility				
of change (per share)		5 Yrs.	1 Yr.	ASSETS (\$mill.)		2016	2017	12/31/18	BUSINESS: Artesian Resources Corp. operates as the holding company of nine wholly-owned subsidiaries offering water, wastewater and other services in Delaware, Maryland and Pennsylvania. Artesian Water, its principal subsidiary, distributes and sells water to residential, commercial, industrial, governmental, municipal, and utility customers throughout Delaware. In addition, Artesian Water provides services to other water utilities, including operations and billing functions, and has contract operation agreements with private and municipal water providers. It also provide water for public and private fire protection to customers in service territories. Artesian Water produced approximately 90% of 2018 consolidated operating revenues. Artesian supplies 7.9 billion gallons of water per year through 1,311 miles of main to over 300,000 people. Has 241 employees. Chairman, C.E.O. & President: Dian C. Taylor. Address: 664 Churchmans Rd., Newark, DE 19702. Tel.: (302) 453-6900. Internet: www.artesianresources.com.	
Sales		2.5%	-2.5%	Cash Assets		2	1.0	.3		
"Cash Flow"		6.5%	4.0%	Receivables		7.8	8.9	8.2		
Earnings		9.0%	2.0%	Inventory		1.6	1.5	1.5		
Dividends		3.0%	3.0%	Other		5.0	7.6	6.1		
Book Value		3.5%	4.0%	Current Assets		14.6	19.0	16.1		
Fiscal Year	QUARTERLY SALES (\$mill.)				Full Year	Property, Plant & Equip. at cost				
	1Q	2Q	3Q	4Q						
12/31/16	18.5	19.4	21.8	19.4	79.1	539.7	582.0	629.4		
12/31/17	19.2	20.5	22.3	20.2	82.2	110.3	117.6	126.9		
12/31/18	18.9	20.2	21.9	19.4	80.4	429.4	464.4	502.5		
12/31/19						7.0	11.2	11.2		
						2016	2017	12/31/18		
Fiscal Year	EARNINGS PER SHARE				Full Year	LIABILITIES (\$mill.)				
	1Q	2Q	3Q	4Q						
12/31/15	.28	.36	.41	.21	1.26	5.6	9.2	8.3		
12/31/16	.30	.33	.48	.30	1.41	8.4	11.0	17.7		
12/31/17	.34	.35	.42	.40	1.51	5.3	8.3	11.7		
12/31/18	.38	.42	.42	.32	1.54	19.3	28.5	37.7		
12/31/19										
Cal-endar	QUARTERLY DIVIDENDS PAID				Full Year	LONG-TERM DEBT AND EQUITY as of 12/31/18				
	1Q	2Q	3Q	4Q						
2016	.222	.225	.225	.228	.90	Total Debt \$133.5 mill. Due in 5 Yrs. \$24.4 mill.				
2017	.228	.232	.232	.235	.93	LT Debt \$115.9 mill.				
2018	.235	.239	.239	.242	.96	Including Cap. Leases None (43% of CapT)				
2019	.242					Leases, Uncapitalized Annual rentals \$1 mill.				
INSTITUTIONAL DECISIONS						Pension Liability None in '18 vs. None in '17				
	2Q'18	3Q'18	4Q'18	Pfd Stock None		Pfd Div'd Paid None				
to Buy	32	40	38	Common Stock 9,250,000 shares		(57% of CapT)				
to Sell	33	26	27							
Hld's(000)	3514	3582	3846							
						TOTAL SHAREHOLDER RETURN				
						Dividends plus appreciation as of 3/31/2019				
						3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
						7.60%	2.68%	4.84%	44.72%	94.42%

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(A) Diluted earnings. Next earnings report due late May.
(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 95

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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)	11.20 %
Risk Premium Using an Adjusted Total Market Approach (2)	<u>10.03 %</u>
Average	<u><u>10.62 %</u></u>

Notes:

- (1) From page 2 of this Schedule.
- (2) From page 3 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%	1.92108	7.05%	3.33%	10.38%
American Water Works Company Inc	NMF	NMF	NMF	6.25441	NMF	3.33%	NMF
Artesian Resources Corporation	0.33%	0.34%	0.33%	2.10682	8.63%	3.33%	11.96%
California Water Service Group	0.32%	0.26%	0.26%	2.00786	6.45%	3.33%	9.78%
Middlesex Water Co.	0.30%	0.38%	0.30%	2.10636	7.92%	3.33%	11.25%
York Water Co.	0.45%	0.36%	0.36%	2.01388	9.03%	3.33%	12.36%
						Average	<u>11.15%</u>
						Median	<u>11.25%</u>
					Average of Mean and Median		<u>11.20%</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) $(1 + (\text{Column [3]} * \text{Column [4]})^{12}) - 1$.
- (4) From note 2 on page 2 of Schedule DWD-5.
- (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)	4.25 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.41 (2)</u>
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	4.66 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.08 (3)</u>
5.	Adjusted Prospective Bond Yield	4.74 %
6.	Equity Risk Premium (4)	<u>5.29</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.03 %</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 0.41% from page 4 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 5 of this Schedule. The 0.08% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds ($1/6 * 0.49\% = 0.08\%$) as derived from page 4 of this Schedule.
 - (4) From page 7 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>
Apr-2019	3.69 %	4.08 %	4.55 %
Mar-2019	3.77	4.16	4.65
Feb-2019	<u>3.79</u>	<u>4.25</u>	<u>4.76</u>
Average	<u>3.75 %</u>	<u>4.16 %</u>	<u>4.65 %</u>

Selected Bond Spreads

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:

0.41 % (1)

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

0.49 % (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

	Moody's		Standard & Poor's	
	Long-Term Issuer Rating		Long-Term Issuer Rating	
	April 2019		April 2019	
<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
Artesian Resources Corporation	NR	--	NR	--
California Water Service Group (4)	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>5.8</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 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 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)	5.84 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	<u>4.73</u>
3.	Average equity risk premium	<u><u>5.29 %</u></u>

Notes: (1) From page 8 of this Schedule.
(2) From page 12 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)	5.54 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.93
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.32
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	9.57
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.78
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>9.10</u>
7.	Conclusion of Equity Risk Premium	8.71 %
8.	Adjusted Beta (7)	<u>0.67</u>
9.	Forecasted Equity Risk Premium	<u><u>5.84 %</u></u>

Notes provided on page 9 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® 2019 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2018.
- (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 1928-2018 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 April 2019.
- (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 4.25% (from page 3 of this Schedule) from the projected 3-5 year total annual market return of 13.82% (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 16.03% 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 4.25% results in an expected equity risk premium of 11.78%.
- (6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 13.35% 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 4.25% results in an expected equity risk premium of 9.10%.
- (7) Average of mean and median beta from Schedule DWD-5.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2019 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, May 1, 2019 and December 1, 2018
Bloomberg Professional Service

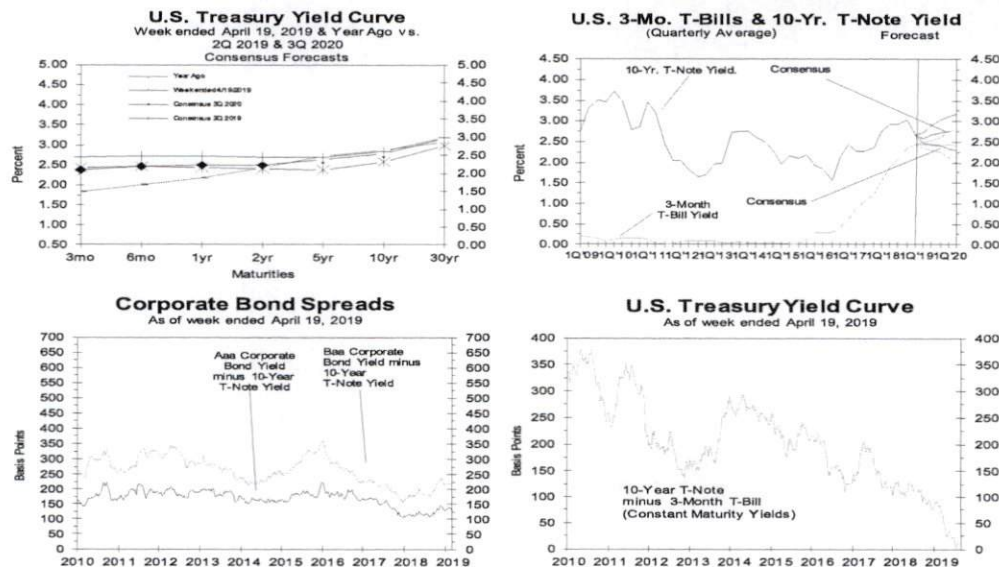
2 ■ BLUE CHIP FINANCIAL FORECASTS ■ MAY 1, 2019

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	2Q 2019				3Q 2019			
	Apr 19	Apr 12	Apr 5	Mar 29	Mar	Feb	Jan	Q1 2019		2019	2019	2019	2020	2020	2020	2020	
Federal Funds Rate	2.41	2.41	2.42	2.41	2.41	2.40	2.40	2.40	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
Prime Rate	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
LIBOR, 3-mo.	2.59	2.59	2.60	2.60	2.61	2.68	2.77	2.69	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	
Commercial Paper, 1-mo.	2.45	2.43	2.46	2.46	2.44	2.43	2.48	2.45	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.5	
Treasury bill, 3-mo.	2.43	2.43	2.43	2.44	2.45	2.44	2.42	2.44	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
Treasury bill, 6-mo.	2.47	2.47	2.46	2.46	2.51	2.50	2.51	2.51	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Treasury bill, 1 yr.	2.44	2.43	2.41	2.41	2.49	2.55	2.58	2.54	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Treasury note, 2 yr.	2.40	2.35	2.33	2.24	2.41	2.50	2.54	2.48	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Treasury note, 5 yr.	2.39	2.32	2.31	2.20	2.37	2.49	2.54	2.47	2.4	2.5	2.6	2.6	2.6	2.6	2.6	2.6	
Treasury note, 10 yr.	2.58	2.52	2.50	2.41	2.57	2.68	2.71	2.65	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8	
Treasury note, 30 yr.	2.98	2.93	2.91	2.84	2.98	3.02	3.04	3.01	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2	
Corporate Aaa bond	3.88	3.86	3.86	3.79	3.95	3.98	4.12	4.01	3.8	3.9	4.0	4.0	4.1	4.1	4.1	4.1	
Corporate Baa bond	4.60	4.61	4.65	4.60	4.76	4.84	5.02	4.87	4.8	4.9	4.9	5.0	5.1	5.1	5.1	5.1	
State & Local bonds	3.50	3.50	3.50	3.48	3.55	3.62	3.67	3.61	3.6	3.7	3.8	3.8	3.9	3.9	3.9	3.9	
Home mortgage rate	4.17	4.12	4.08	4.06	4.27	4.37	4.46	4.37	4.3	4.4	4.4	4.5	4.5	4.5	4.6	4.6	

Key Assumptions	History								Consensus Forecasts-Quarterly								
	2Q 2017				2Q 2018				2Q 2019	2Q 2019				2Q 2020			
	2017	2017	2017	2018	2018	2018	2018	2019		2019	2019	2019	2020	2020	2020	2020	
Fed's AFE \$ Index	111.1	105.6	106.2	102.9	105.5	107.8	109.4	109.4	108.7	108.8	108.8	108.5	108.2	107.9	107.9	107.9	
Real GDP	3.0	2.8	2.3	2.2	4.2	3.4	2.2	3.2	2.5	2.1	2.0	1.7	1.7	1.7	1.7	1.7	
GDP Price Index	1.2	2.2	2.5	2.0	3.0	1.8	1.7	0.9	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
Consumer Price Index	0.4	2.2	3.1	3.2	2.1	2.0	1.5	0.9	2.9	2.3	2.1	2.1	2.1	2.1	2.1	2.1	

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: 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).



14 ■ BLUE CHIP FINANCIAL FORECASTS ■ DECEMBER 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.

		Average For The Year					Five-Year Averages	
		2020	2021	2022	2023	2024	2020-2024	2025-2029
Interest Rates								
1. Federal Funds Rate	CONSENSUS	2.9	2.8	2.8	3.0	3.0	2.9	3.1
	Top 10 Average	3.5	3.6	3.6	3.6	3.6	3.6	3.6
	Bottom 10 Average	2.1	1.9	2.0	2.3	2.5	2.2	2.6
2. Prime Rate	CONSENSUS	5.9	5.8	5.9	6.0	6.1	5.9	6.1
	Top 10 Average	6.5	6.6	6.6	6.6	6.6	6.6	6.6
	Bottom 10 Average	5.2	4.9	5.1	5.4	5.6	5.2	5.7
3. LIBOR, 3-Mo.	CONSENSUS	3.3	3.2	3.2	3.5	3.5	3.3	3.5
	Top 10 Average	3.9	4.0	4.0	4.2	4.2	4.0	4.0
	Bottom 10 Average	2.7	2.5	2.5	2.8	2.9	2.7	3.1
4. Commercial Paper, 1-Mo.	CONSENSUS	3.0	2.9	3.0	3.1	3.1	3.0	3.1
	Top 10 Average	3.5	3.6	3.6	3.6	3.6	3.6	3.6
	Bottom 10 Average	2.5	2.3	2.3	2.6	2.6	2.4	2.6
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	2.9	2.8	2.8	3.0	3.0	2.9	3.1
	Top 10 Average	3.5	3.6	3.6	3.6	3.6	3.6	3.6
	Bottom 10 Average	2.1	1.9	2.0	2.3	2.5	2.1	2.6
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	3.0	2.9	3.0	3.1	3.2	3.1	3.2
	Top 10 Average	3.6	3.7	3.7	3.7	3.8	3.7	3.7
	Bottom 10 Average	2.4	2.1	2.2	2.5	2.7	2.4	2.8
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	3.1	3.1	3.1	3.2	3.3	3.2	3.4
	Top 10 Average	3.7	3.8	3.8	3.8	3.8	3.8	3.9
	Bottom 10 Average	2.5	2.3	2.3	2.6	2.8	2.5	2.9
8. Treasury Note Yield, 2-Yr.	CONSENSUS	3.2	3.2	3.2	3.3	3.4	3.3	3.5
	Top 10 Average	3.8	3.9	3.9	3.9	4.0	3.9	4.0
	Bottom 10 Average	2.5	2.4	2.4	2.7	2.8	2.6	2.9
10. Treasury Note Yield, 5-Yr.	CONSENSUS	3.4	3.3	3.4	3.5	3.5	3.4	3.6
	Top 10 Average	4.0	4.0	4.1	4.1	4.1	4.1	4.2
	Bottom 10 Average	2.7	2.7	2.6	2.8	2.9	2.7	3.0
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.5	3.5	3.5	3.6	3.7	3.6	3.8
	Top 10 Average	4.2	4.2	4.3	4.3	4.3	4.3	4.4
	Bottom 10 Average	2.9	2.9	2.8	3.0	3.0	2.9	3.2
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	3.8	3.8	3.9	4.0	4.0	3.9	4.2
	Top 10 Average	4.5	4.5	4.6	4.7	4.7	4.6	4.9
	Bottom 10 Average	3.2	3.2	3.2	3.3	3.4	3.2	3.5
13. Corporate Aaa Bond Yield	CONSENSUS	4.9	4.9	4.9	5.0	5.1	5.0	5.1
	Top 10 Average	5.6	5.7	5.8	5.8	5.8	5.7	5.9
	Bottom 10 Average	4.2	4.1	4.1	4.2	4.3	4.2	4.4
13. Corporate Baa Bond Yield	CONSENSUS	5.8	5.8	5.9	5.9	6.0	5.9	6.0
	Top 10 Average	6.5	6.6	6.8	6.8	6.8	6.7	6.9
	Bottom 10 Average	5.2	5.1	5.1	5.2	5.3	5.2	5.3
14. State & Local Bonds Yield	CONSENSUS	4.6	4.5	4.5	4.5	4.6	4.5	4.7
	Top 10 Average	5.1	5.0	5.0	5.0	5.1	5.1	5.2
	Bottom 10 Average	4.2	4.0	3.9	4.0	4.0	4.0	4.1
15. Home Mortgage Rate	CONSENSUS	5.2	5.2	5.2	5.3	5.4	5.3	5.5
	Top 10 Average	5.8	5.8	5.9	6.0	6.0	5.9	6.1
	Bottom 10 Average	4.6	4.5	4.5	4.7	4.8	4.6	4.9
A. FRB - Major Currency Index	CONSENSUS	90.1	89.7	89.4	90.0	89.8	89.8	89.9
	Top 10 Average	94.6	94.6	94.4	94.2	94.0	94.3	93.9
	Bottom 10 Average	85.5	84.8	84.2	85.8	85.6	85.2	85.8
		Year-Over-Year, % Change					Five-Year Averages	
		2020	2021	2022	2023	2024	2020-2024	2025-2029
B. Real GDP	CONSENSUS	1.8	1.8	2.1	2.2	2.1	2.0	2.1
	Top 10 Average	2.4	2.3	2.4	2.6	2.5	2.5	2.5
	Bottom 10 Average	1.3	1.3	1.7	1.8	1.7	1.6	1.8
C. GDP Chained Price Index	CONSENSUS	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	Top 10 Average	2.4	2.4	2.3	2.4	2.3	2.3	2.3
	Bottom 10 Average	1.9	1.8	1.9	1.9	1.9	1.9	1.9
D. Consumer Price Index	CONSENSUS	2.1	2.1	2.2	2.2	2.2	2.2	2.2
	Top 10 Average	2.5	2.5	2.5	2.5	2.4	2.5	2.4
	Bottom 10 Average	1.7	1.8	1.9	2.0	1.9	1.9	2.0

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	4.00 %
2.	Regression of Historical Equity Risk Premium (2)	5.72
3.	Forecasted Equity Risk Premium Based on PRPM (3)	3.93
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	5.67
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	<u>4.35</u>
6.	Average Equity Risk Premium (6)	<u><u>4.73 %</u></u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2018. 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 - 2018 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 - April 2019.
- (4) Using data from Value Line for the S&P Utilities Index, an expected return of 10.33% 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 4.66%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 5.67%. $(10.33\% - 4.66\% = 5.67\%)$
- (5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.01% 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 4.66%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 4.35%. $(9.01\% - 4.66\% = 4.35\%)$
- (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]
	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
<u>Proxy Group of Six Water Companies</u>								
American States Water Co.	0.70	0.57	0.64	9.73 %	3.33 %	9.56 %	10.43 %	10.00 %
American Water Works Company Inc	0.60	0.62	0.61	9.73	3.33	9.27	10.21	9.74
Artesian Resources Corporation	0.65	0.57	0.61	9.73	3.33	9.27	10.21	9.74
California Water Service Group	0.70	0.66	0.68	9.73	3.33	9.95	10.72	10.34
Middlesex Water Co.	0.75	0.76	0.76	9.73	3.33	10.72	11.31	11.02
York Water Co.	0.75	0.68	0.72	9.73	3.33	10.34	11.02	10.68
Mean			0.67			9.85 %	10.65 %	10.25 %
Median			0.66			9.75 %	10.58 %	10.17 %
Average of Mean and Median			0.67			9.80	10.62	10.21 %

Notes on page 2 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 (1926-2018)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2018:	11.89 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.12
MRP based on Ibbotson Historical Data:	<u>6.77 %</u>

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

9.00 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - April 2019)

9.40 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending May 03, 2019)

Total projected return on the market 3-5 years hence*:	13.82 %
Projected Risk-Free Rate (see note 2):	3.33
MRP based on Value Line Summary & Index:	<u>10.49 %</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:	16.03 %
Projected Risk-Free Rate (see note 2):	3.33
MRP based on Value Line data	<u>12.70 %</u>

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	13.35 %
Projected Risk-Free Rate (see note 2):	3.33
MRP based on Bloomberg data	<u>10.02 %</u>

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.73 %

- (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 2019	3.00 %
Third Quarter 2019	3.00
Fourth Quarter 2019	3.10
First Quarter 2020	3.10
Second Quarter 2020	3.10
Third Quarter 2020	3.20
2020-2024	3.90
2025-2029	4.20
	<u>3.33 %</u>

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

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, May 1, 2019 and December 1, 2018
Stocks, Bonds, Bills, and Inflation - 2019 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 0.29 – 0.71 and residual standard error of the regression range of 2.7224 – 3.2468 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 0.1070. 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

$$\text{Thus, } 0.1070 = \frac{2.9846}{\sqrt{518}} = \frac{2.9846}{22.7596}$$

Source of Information: Value Line, Inc., March 2019
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]
	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
<u>Proxy Group of Six Water Companies</u>				
American States Water Co.	0.70	0.51	2.7757	0.0995
American Water Works Company Inc	0.60	0.38	2.1299	0.0763
Artesian Resources Corporation	0.65	0.39	3.3738	0.1209
California Water Service Group	0.70	0.51	2.9311	0.1051
Middlesex Water Co.	0.75	0.60	3.2488	0.1164
York Water Co.	0.75	0.59	3.4482	0.1236
Average	0.69	0.50	2.9846	0.1070
Beta Range (+/- 2 std. Devs. of Beta)	0.29	0.71		
2 std. Devs. of Beta	0.21			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.7224	3.2468		
Std. dev. of the Res. Std. Err.	0.1311			
2 std. devs. of the Res. Std. Err.	0.2622			

Source of Information: Valueline Proprietary Database, March 2019

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]
Proxy Group of Eleven Non-Price Regulated Companies	VL Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
AutoZone Inc.	0.80	0.63	2.8677	0.1028
Cheesecake Factory	0.75	0.57	2.8706	0.1029
Casey's Gen'l Stores	0.75	0.56	3.0452	0.1091
Cboe Global Markets	0.75	0.58	2.8746	0.1030
Cracker Barrel	0.75	0.55	2.9858	0.1070
Dollar General	0.80	0.68	3.0342	0.1088
Dunkin' Brands Group	0.70	0.48	2.8579	0.1024
Darden Restaurants	0.80	0.66	2.9476	0.1057
Integra LifeSciences	0.80	0.67	3.1668	0.1135
Viad Corp.	0.80	0.62	3.1016	0.1112
Valvoline Inc.	0.80	0.66	2.9495	0.1832
Average	0.77	0.61	2.9700	0.1100
Proxy Group of Six Water Companies	0.69	0.50	2.9846	0.1070

Source of Information:

Valueline Proprietary Database, March 2019

Carolina Water Service, Inc. of North Carolina
Coefficients of Variation of the
Proxy Group of Six Water Companies
and the Proxy Group of Eleven Non-Price Regulated Companies

Proxy Group of Six Water Companies	Net Profit (millions)										Standard Deviation	Mean	Coefficient of Variation
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
American States Water Co.	\$ 29.5	\$ 41.4	\$ 42.0	\$ 54.1	\$ 62.7	\$ 61.1	\$ 60.5	\$ 59.7	\$ 69.4	\$ 63.9	\$ 12.0	\$ 54.4	0.2203
American Water Works Company Inc	209.9	267.8	304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0	101.5	389.3	0.2607
Artesian Resources Corporation	7.3	7.6	6.7	9.8	8.3	9.5	11.3	13.0	14.0	14.3	2.7	10.2	0.2635
California Water Service Group	40.6	37.7	36.1	42.6	47.3	56.7	45.0	48.7	67.2	60.5	9.7	48.2	0.2012
Middlesex Water Co.	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	22.8	32.5	6.1	18.5	0.3289
York Water Co.	7.5	8.9	9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	1.9	10.7	0.1794
												Mean	0.2423
												Median	0.2405

Proxy Group of Eleven Non-Price Regulated Companies	Net Profit (millions)										Standard Deviation	Mean	Coefficient of Variation
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
AutoZone Inc.	\$ 657.1	\$ 738.3	\$ 849.0	\$ 930.4	\$ 1,016.5	\$ 1,069.7	\$ 1,160.2	\$ 1,241.0	\$ 1,280.9	\$ 1,406.3	\$ 231.2	\$ 1,034.9	0.2234
Cheesecake Factory	58.8	86.1	95.1	103.8	114.0	101.7	120.1	139.6	125.1	113.0	21.4	105.7	0.2022
Casey's Gen'l Stores	117.0	94.6	116.8	110.6	134.5	183.0	226.0	177.5	143.0	195.0	40.9	149.8	0.2732
Cboe Global Markets	107.8	99.4	139.4	157.4	176.0	189.7	205.0	185.7	400.6	425.2	107.3	208.6	0.5146
Cracker Barrel	66.0	85.3	91.1	107.9	119.0	135.1	163.9	189.3	201.9	222.2	50.9	138.2	0.3684
Dollar General	339.4	627.9	766.7	952.7	1,025.1	1,065.3	1,165.1	1,251.1	1,228.2	1,589.5	335.6	1,001.1	0.3352
Dunkin' Brands Group	NA	95.9	101.7	149.7	165.8	186.4	188.0	208.7	223.8	246.3	48.6	174.0	0.2792
Darden Restaurants	381.5	414.2	478.7	476.5	412.6	183.2	342.9	456.6	504.5	606.2	106.3	425.7	0.2498
Integra LifeSciences	63.5	89.9	82.2	87.2	70.6	34.0	6.9	74.6	64.7	62.0	24.2	63.6	0.3808
Viad Corp.	(2.2)	3.6	11.3	22.0	25.5	32.1	29.4	48.9	53.5	47.7	18.2	27.2	0.6699
Valvoline Inc.	NA	NA	NA	NA	NA	NA	NA	273.0	283.0	254.0	12.0	270.0	0.0445
												Mean	0.3219
												Median	0.2792

NA = Not Available
Bold figures indicate estimates

Source of Information:
Value Line Investment Survey

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

<u>Principal Methods</u>	<u>Proxy Group of Eleven Non-Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	11.88 %
Risk Premium Model (RPM) (2)	12.00
Capital Asset Pricing Model (CAPM) (3)	<u>11.17</u>
Mean	<u><u>11.68 %</u></u>
Median	<u><u>11.88 %</u></u>
Average of Mean and Median	<u><u>11.78 %</u></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 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]
Proxy Group of Eleven 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)
AutoZone Inc.	- %	13.50 %	12.48 %	12.00 %	12.48 %	12.62 %	- %	NA %
Cheesecake Factory	2.80	6.50	8.60	13.00	8.60	9.18	2.93	12.11
Casey's Gen'l Stores	0.88	8.00	16.03	10.00	16.03	12.52	0.94	13.46
Cboe Global Markets	1.29	14.50	0.72	6.60	0.72	5.64	1.33	6.97
Cracker Barrel	3.10	10.00	2.40	10.00	2.40	6.20	3.20	9.40
Dollar General	1.07	13.00	11.43	12.50	11.43	12.09	1.13	13.22
Dunkin' Brands Group	2.07	10.50	7.25	10.70	7.25	8.93	2.16	11.09
Darden Restaurants	2.63	12.00	12.95	10.30	12.95	12.05	2.79	14.84
Integra LifeSciences	-	24.00	13.25	12.80	13.20	15.81	-	NA
Viad Corp.	0.71	11.00	NA	NA	14.00	12.50	0.75	13.25
Valvoline Inc.	2.24	7.50	7.50	9.80	7.50	8.08	2.33	10.41
							Mean	11.64 %
							Median	12.11 %
							Average of Mean and Median	11.88 %

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 April 30, 2019. 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 04/30/2019
www.zacks.com Downloaded on 04/30/2019
www.yahoo.com Downloaded on 04/30/2019

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 Eleven Non-Price Regulated Companies</u>
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	5.21 %
2.	Equity Risk Premium (2)	<u>6.79</u>
3.	Risk Premium Derived Common Equity Cost Rate	<u><u>12.00</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 May 1, 2019 and December 1, 2018 (see pages 10 and 11 of Schedule DWD-4). The estimates are detailed below.

Second Quarter 2019	4.80 %
Third Quarter 2019	4.90
Fourth Quarter 2019	4.90
First Quarter 2020	5.00
Second Quarter 2020	5.10
Third Quarter 2020	5.10
2020-2024	5.90
2025-2029	<u>6.00</u>
Average	<u><u>5.21</u> %</u>

(2) From page 5 of this Schedule.

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

Proxy Group of Eleven Non- Price Regulated Companies	Moody's Long-Term Issuer Rating April 2019		Standard & Poor's Long-Term Issuer Rating April 2019	
	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
AutoZone Inc.	Baa1	8.0	BBB	9.0
Cheesecake Factory	NR	--	NR	--
Casey's Gen'l Stores	NR	--	NR	--
Cboe Global Markets	A3	7.0	A-	7.0
Cracker Barrel	WR	--	NR	--
Dollar General	Baa2	9.0	BBB	9.0
Dunkin' Brands Group	NR	--	NR	6.0
Darden Restaurants	Baa2	9.0	BBB	9.0
Integra LifeSciences	NR	--	NR	--
Viad Corp.	WR	--	NR	--
Valvoline Inc.	Ba3	13.0	BB+	11.0
Average	Baa2	9.2	BBB+/BBB	8.5

Notes:

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

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 Eleven 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 Eleven Non-Price Regulated Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.54 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.93
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.32
5.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	9.57
6.	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies (5)	11.78
8.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>9.10</u>
9.	Conclusion of Equity Risk Premium	8.71 %
10.	Adjusted Beta (7)	<u>0.78</u>
11.	Forecasted Equity Risk Premium	<u><u>6.79 %</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 mean and median beta from page 6 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2019 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, May 1, 2019 and December 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]
Proxy Group of Eleven Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
AutoZone Inc.	0.80	0.60	0.70	9.73 %	3.33 %	10.14 %	10.87 %	10.51 %
Cheesecake Factory	0.75	0.73	0.74	9.73	3.33	10.53	11.16	10.85
Casey's Gen'l Stores	0.75	0.82	0.79	9.73	3.33	11.02	11.53	11.27
Cboe Global Markets	0.75	0.85	0.80	9.73	3.33	11.11	11.60	11.36
Cracker Barrel	0.75	0.72	0.74	9.73	3.33	10.53	11.16	10.85
Dollar General	0.80	0.73	0.77	9.73	3.33	10.82	11.38	11.10
Dunkin' Brands Group	0.70	0.86	0.78	9.73	3.33	10.92	11.45	11.19
Darden Restaurants	0.80	0.77	0.79	9.73	3.33	11.02	11.53	11.27
Integra LifeSciences	0.80	0.85	0.83	9.73	3.33	11.41	11.82	11.61
Viad Corp.	0.80	0.86	0.83	9.73	3.33	11.41	11.82	11.61
Valvoline Inc.	0.80	0.70	0.75	9.73	3.33	10.63	11.24	10.93
Mean			0.77			10.87 %	11.41 %	11.14 %
Median			0.78			10.92 %	11.45 %	11.19 %
Average of Mean and Median			0.78			10.90 %	11.43 %	11.17 %

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

		[1]		[2]	[3]	[4]	
Line No.		Market Capitalization on April 30, 2019		Applicable Decile of the NYSE/AMEX/NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)	
		(1) (millions)	(times larger)				
1.	<u>Carolina Water Service, Inc. of North Carolina</u>	\$	217.491	10	5.22%		
2.	<u>Proxy Group of Six Water Companies</u>	\$	4,385.585	20.2 x	5	1.28%	3.94%
			[A]	[B]	[C]	[D]	
			Decile	Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Size Premium (Return in Excess of CAPM)*	
	Largest		1	\$ 29,428.909	\$ 1,073,390.566	-0.30%	
			2	13,512.960	29,022.867	0.52%	
			3	7,275.967	13,455.802	0.81%	
			4	4,504.066	7,524.230	0.85%	
			5	2,996.003	4,503.549	1.28%	
			6	1,961.831	2,992.251	1.50%	
			7	1,292.791	1,960.201	1.58%	
			8	730.047	1,292.224	1.80%	
			9	325.360	727.843	2.46%	
	Smallest		10	2.455	321.578	5.22%	

*From 2019 Duff & Phelps Cost of Capital Navigator

Notes:

- (1) From page 2 of this Schedule.
- (2) Gleaned from Columns [B] and [C] 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 in Column [D] on the bottom of this page.
- (4) Line No. 1 Column [3] - Line No. 2 Column [3]. For example, the 3.94% in Column [4], Line No. 2 is derived as follows 3.94% = 5.22% - 1.28%.

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

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Exchange	Common Stock Shares Outstanding at Fiscal Year End 2018 (millions)	Book Value per Share at Fiscal Year End 2018 (1)	Total Common Equity at Fiscal Year End 2018 (millions)	Closing Stock Market Price on April 30, 2019	Market-to- Book Ratio on April 30, 2019 (2)	Market Capitalization on April 30, 2019 (3) (millions)
Carolina Water Service, Inc. of North Carolina		NA	NA	62.623 (4)	NA		
Based upon Proxy Group of Six Water Companies						347.3 (5)	\$ 217.491 (6)
<u>Proxy Group of Six Water Companies</u>							
American States Water Co.	NYSE	36.758	\$ 15.187	\$ 558.223	\$ 71.170	468.6 %	\$ 2,616.056
American Water Works Company Inc	NYSE	180.684	32.454	5,864.000	108.190	333.4	19,548.202
Artesian Resources Corporation	NYSE	9.250	16.568	153.251	36.280	219.0	335.590
California Water Service Group	NYSE	48.065	15.191	730.157	50.390	331.7	2,421.981
Middlesex Water Co.	NYSE	16.403	15.167	248.787	57.990	382.3	951.210
York Water Co.	NYSE	12.944	9.750	126.195	34.030	349.0	440.469
Average		50.684	\$ 17.386	\$ 1,280.102	\$ 59.675	347.3 %	\$ 4,385.585

NA= Not Available

Notes: (1) Column 3 / Column 1.

(2) Column 4 / Column 2.

(3) Column 1 * Column 4.

(4) Requested rate base multiplied by requested equity ratio.

(5) The market-to-book ratio of Carolina Water Service, Inc. of North Carolina on April 30, 2019 is assumed to be equal to the market-to-book ratio of Proxy Group of Six Water Companies on April 30, 2019 as appropriate.

(6) Column [3] multiplied by Column [5].

Source of Information: 2018 Annual Forms 10K
yahoo.finance.com

I/A

Carolina Water Service, Inc. of North Carolina
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at September 30, 2019

<u>Type Of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	50.90%	5.36% (1)	2.73%
Common Equity	<u>49.10%</u>	10.20% (2)	<u>5.01%</u>
Total	<u>100.00%</u>		<u>7.74%</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)	8.81%
2.	Risk Premium Model (RPM) (2)	10.12%
3.	Capital Asset Pricing Model (CAPM) (3)	9.35%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	11.29%
5.	Indicated Common Equity Cost Rate before Adjustment for Size Risk	9.80%
6.	Size Risk Adjustment (5)	0.40%
7.	Recommended Common Equity Cost Rate after Adjustment for Size Risk	10.20%

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]	[4]	[5]	[6]	[7]	[8]
	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	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)
Proxy Group of Six Water Companies							
American States Water Co.	1.38 %	8.00 %	8.00 %	6.00 %	7.33 %	1.43 %	8.76 %
American Water Works Company Inc	1.63	9.50	8.10	8.20	8.60	1.70	10.30
Artesian Resources Corporation	2.76	NA	NA	4.00	4.00	2.82	6.82
California Water Service Group	1.46	8.00	10.00	9.80	9.27	1.53	10.80
Middlesex Water Co.	1.55	7.50	NA	2.70	5.10	1.59	6.69
York Water Co.	1.74	9.50	NA	4.90	7.20	1.80	9.00
						Average	8.73 %
						Median	8.88 %
						Average of Mean and Median	8.81 %

NA= Not Available

Notes:

- (1) Indicated dividend at 10/18/2019 divided by the average closing price of the last 60 trading days ending 10/18/2019 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., $1.38\% \times (1 + \{1/2 \times 7.33\%\}) = 1.43\%$.
- (5) Column 6 + column 7.

Source of Information:

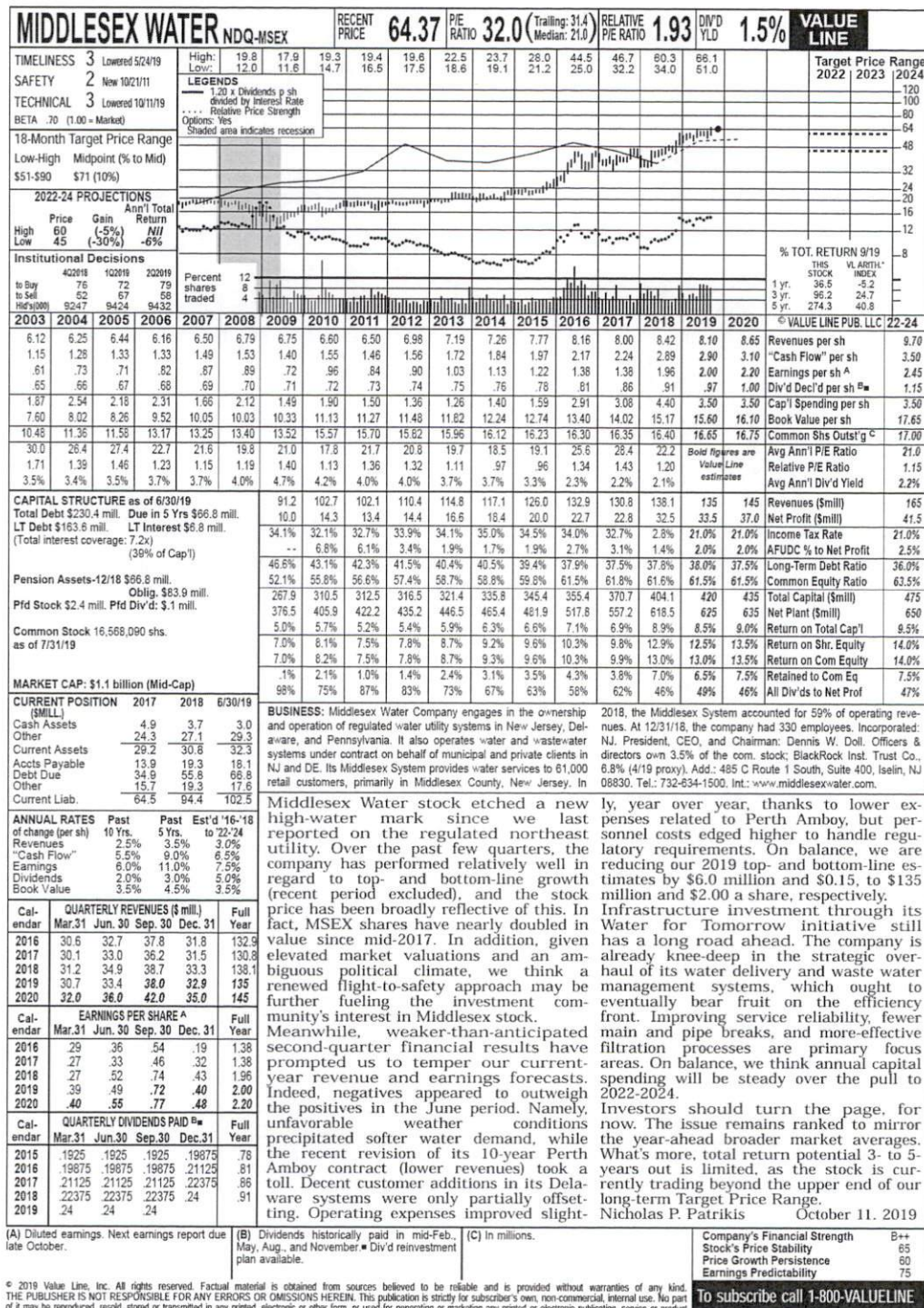
Value Line Investment Survey
www.reuters.com Downloaded on 10/18/2019
www.zacks.com Downloaded on 10/18/2019
www.yahoo.com Downloaded on 10/18/2019

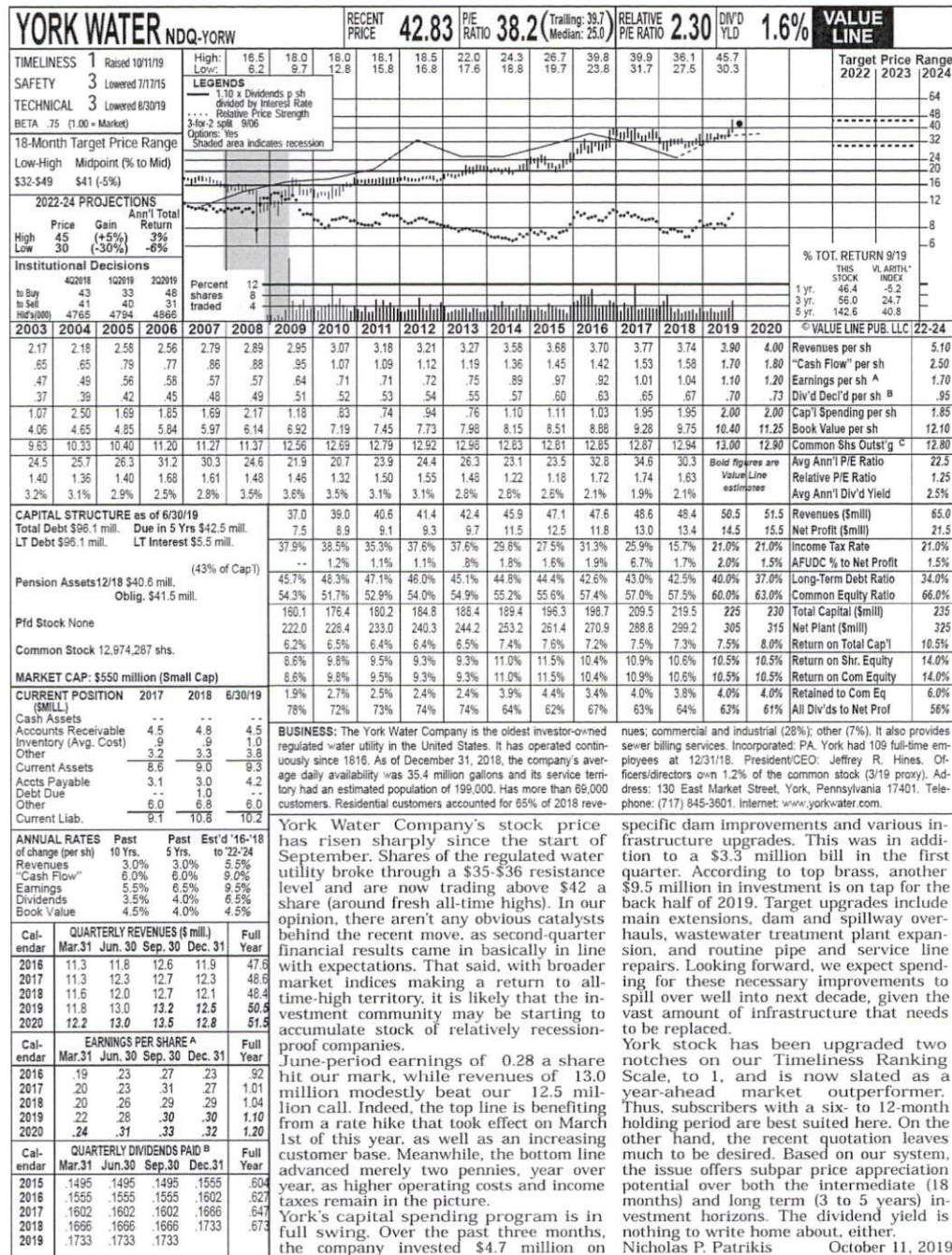
AMER. STATES WATER NYSE-AWR										RECENT PRICE	90.00	P/E RATIO	42.3 (Trailing: 43.7 Median: 21.0)	RELATIVE P/E RATIO	2.55	DIV'D YLD	1.4%	VALUE LINE	
TIMELINESS 1		Raised 8/9/19		High: 21.0	Low: 13.5	14.9	15.6	18.2	24.1	33.1	38.7	44.1	47.2	58.4	69.6	94.4			
SAFETY 2		Raised 7/20/12		13.5	14.9	15.6	16.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1	63.3				
TECHNICAL 2		Raised 10/11/19		LEGENDS														Target Price Range	
BETA .65 (1.00 = Market)				1.35 x Dividends p.sh. divided by Interest Rate														2022 2023 2024	
18-Month Target Price Range				Relative Price Strength 2-Mo. p.sh. 913														96	
Low-High Midpoint (% to Mid)				Options: Yes														64	
S72-S103 \$88 (-5%)				Shaded area indicates recession														48	
2022-24 PROJECTIONS																		32	
Price Gain Ann'l Total																		24	
High 75 (-15%) 109%																		16	
Low 55 (-40%) 9%																		12	
Institutional Decisions																			
4Q2019 1Q2019 2Q2019																			
To Buy 140 138 139																			
To Sell 102 105 109																			
Held 25276 26624 26893																			
2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020																			
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 12.01 11.88 12.45 12.85																			
1.04 1.11 1.32 1.45 1.85 1.69 1.70 2.11 2.13 2.48 2.65 2.67 2.81 2.70 2.96 2.84 3.10 3.30																			
.39 .53 .66 .67 .81 .78 .81 1.11 1.12 1.41 1.61 1.57 1.61 1.62 1.88 1.72 2.10 2.20																			
.44 .44 .45 .46 .48 .50 .52 .55 .64 .76 .83 .87 .91 .99 1.06 1.14 1.22 1.22																			
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 3.08 3.44 3.45 3.50																			
6.98 7.51 7.86 8.32 8.77 9.70 10.13 10.84 11.80 12.72 13.24 12.77 13.52 14.45 15.19 15.85 16.60 16.60																			
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 36.68 36.76 36.90 37.00																			
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 25.7 34.0 34.0 34.0																			
1.82 1.23 1.17 1.50 1.27 1.36 1.41 1.00 97 91 97 1.06 1.24 1.34 1.29 1.83 1.83 1.83																			
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% 1.8% 1.8% 1.8%																			
CAPITAL STRUCTURE as of 6/30/19																			
Total Debt \$281.3 mill. Due in 5 Yrs \$100.7 mill.																			
LT Debt \$281.0 mill. LT Interest \$24.0 mill. (33% of Cap'l)																			
Leases, Uncapitalized: Annual rentals \$2.6 mill.																			
Pension Assets-12/18 \$162.5 mill. Oblig. \$195.1 mill.																			
Pfd Stock None																			
Common Stock 36,831,867 shs. as of 8/2/19																			
MARKET CAP: \$3.3 billion (Mid Cap)																			
CURRENT POSITION 2017 2018 6/30/19																			
Cash Assets 2 7.1 1.5																			
Accounts Receivable 26.1 23.4 24.2																			
Other 129.2 101.0 96.3																			
Current Assets 155.5 131.5 122.0																			
Accounts Payable 51.0 59.5 55.6																			
Debt Due 59.3 40.3 3																			
Other 46.4 45.8 50.4																			
Current Liab. 156.7 146.6 105.3																			
ANNUAL RATES of change (per sh)																			
Revenues 3.5% 3.0% 4.5% 6.0%																			
"Cash Flow" 3.0% 3.0% 4.5% 6.0%																			
Earnings 9.0% 9.0% 9.5% 9.5%																			
Dividends 7.5% 9.0% 9.5% 9.5%																			
Book Value 5.0% 4.0% 5.0% 5.0%																			
QUARTERLY REVENUES (\$ mill.)																			
Cal- Mar.31 Jun.30 Sep.30 Dec.31 Full Year																			
2016 93.5 112.0 123.8 106.8 436.1																			
2017 98.8 113.2 124.4 104.2 440.6																			
2018 94.7 106.9 124.2 111.0 436.8																			
2019 101.7 124.6 138.7 105 470																			
2020 105 130 140 105 480																			
EARNINGS PER SHARE ^A																			
Cal- Mar.31 Jun.30 Sep.30 Dec.31 Full Year																			
2016 .28 .45 .59 .30 1.62																			
2017 .34 .62 .57 .35 1.88																			
2018 .29 .44 .62 .37 1.72																			
2019 .35 .72 .65 .38 2.10																			
2020 .38 .67 .70 .45 2.20																			
QUARTERLY DIVIDENDS PAID ^B																			
Cal- Mar.31 Jun.30 Sep.30 Dec.31 Full Year																			
2015 213 213 224 224 87																			
2016 224 224 224 242 91																			
2017 242 242 255 255 99																			
2018 255 255 275 275 106																			
2019 275 275 305																			
BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 259,919 customers in 70 cities in 10 counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,353 customers in Big Bear Lake and San Bernardino City. Provides water & wastewater services to U.S. military bases through its ASUS sub. Sold Chaparral City Wtr. of AZ (6/11). Employs about 815. BlackRock, Inc. owns 15.1% of out. shares: Vanguard, 11.5%; iG & dir. 1.2% (4/19 Proxy). Chairman: Lloyd Ross, Pres. & CEO: Robert Sprowls, Inc. CA. Addr.: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3800. Internet: www.aswater.com.																			
Shares of American States Water have performed well since our July report. The stock price, which had already been on a roll over the past one-, three-, and five year periods, surged over 20% in the last three months. By comparison, the S&P 500 Index returns have been flatish. We attribute the showing to the positive earnings and dividend news (more below). Rate relief is spurring the bottom line. In California, utilities petition for higher rates triennially. State regulators recently finalized the Golden States Water subregulator's ruling. Hence, there was a \$0.08-a-share gain in the June quarter resulting from the new rates being retroactive to the beginning of the year. Wider margins also helped as the company has done a good job of cutting costs. To reflect this, we have raised our earnings-per-share estimates for 2019 and 2020, \$0.15 and \$0.10, respectively, to \$2.10 and \$2.20. Nonregulated activities are also providing a boost. Through its ASUS operations, the company provides water services to U.S. Army bases around the country. For the first half of the year, share-earnings contributions from this business doubled from 2018's \$0.11, to \$0.22. The inclusion of revenues generated from Fort Riley were part of the reason, as was an increase in management fees and construction at other bases. As more military complexes privatize their water services, we expect this segment to gain in importance. Moreover, profits made here are not regulated by state authorities. The most recent dividend hike was better than expected. In the last quarter, the payout was raised a hefty 11% to an annual rate of \$1.22 a share. Still, The yield on this equity has declined meaningfully. At 1.4%, AWR is now yielding about 80 basis points lower than the Value Line median. And, while much of this is due to the robust dividend growth prospects, the equity is now richly valued as to many key financial metrics. In any case, our ranking system pegs AWR to outperform the market in the year ahead. However, the stock is now trading above our 2022-2024 TPR. Price performance over the next 18-month period is also projected to be subpar. James A. Flood October 11, 2019																			
(A) Primary earnings. Excludes nonrecurring gains/losses: '04, 7c; '05, 13c; '06, 3c; '08, (14c); '10, (23c); '11, 10c. Net earnings report due mid-November.																			
(B) Dividends historically paid in early March, June, September, and December. * Div'd reinvestment plan available.																			
(C) In millions, adjusted for split. * Includes intangibles. As of 6/30/19; \$1.1 million/\$0.03 a share.																			
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To subscribe call 1-800-VALUELINE																			

AMERICAN WATER NYSE-AWK										RECENT PRICE	123.86	P/E RATIO	34.1	(Trailing: 38.6 Median: 19.0)	RELATIVE P/E RATIO	2.05	DIV'D YLD	1.7%	VALUE LINE				
TIMELINESS		1	Raised 4/5/19	High: 23.7	23.0	25.8	32.8	39.4	45.1	56.2	61.2	86.2	92.4	98.2	129.9				Target Price Range	2022	2023	2024	
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	78.0	88.0								
TECHNICAL		3	Lowered 10/4/19	LEGENDS																			
BETA		.60	(1.00 = Market)	1.10 x Dividends p/sh divided by Interest Rate																			
				Relative Price Strength																			
				Options: Yes																			
				Shaded area indicates recession																			

ARTESIAN RES. CORP. NDQ-ARTNA										RECENT PRICE	36.31	TRAILING P/E RATIO	23.6	RELATIVE P/E RATIO	1.41	DIV'D YLD	2.7%	VALUE LINE	
RANKS										19.99 15.16	24.43 18.20	24.27 21.52	23.82 19.85	29.16 20.00	35.00 25.17	43.22 29.37	41.92 32.00	40.97 33.14	High Low
PERFORMANCE	3	Average																	45
Technical	3	Average																	30
SAFETY	3	Average																	22.5
BETA .65	(1.00 = Market)	13																	
Financial Strength	B		9																
Price Stability	65		6																
Price Growth Persistence	50		4																
Earnings Predictability	85		3																
																			500 VOL. (thous.)
© VALUE LINE PUBLISHING LLC										2011	2012	2013	2014	2015	2016	2017	2018	2019	2020/2021
SALES PER SH										7.56	8.10	7.82	8.13	8.50	8.67	8.92	8.69	--	
"CASH FLOW" PER SH										1.64	2.04	1.87	2.04	2.22	2.43	2.55	2.66	--	
EARNINGS PER SH										.83	1.13	.94	1.07	1.26	1.41	1.51	1.54	NA	NA/NA
DIV'DS DECL'D PER SH										.76	.79	.82	.85	.87	.90	.93	.96	--	
CAP'L SPENDING PER SH										1.83	2.36	2.40	2.66	2.28	3.10	4.46	5.30	--	
BOOK VALUE PER SH										13.12	13.57	13.80	14.09	14.61	15.23	15.91	16.57	--	
COMMON SHS OUTST'G (MILL)										8.61	8.71	8.83	8.91	9.06	9.13	9.22	9.25	--	
AVG ANN'L P/E RATIO										22.5	18.3	23.9	20.5	18.0	20.9	24.2	23.9	NA	NA/NA
RELATIVE P/E RATIO										1.41	1.17	1.34	1.08	.93	1.14	1.21	1.35	--	
AVG ANN'L DIV'D YIELD										4.1%	3.8%	3.7%	3.9%	3.8%	3.1%	2.5%	2.6%	--	
SALES (\$MILL)										65.1	70.6	69.1	72.5	77.0	79.1	82.2	80.4	--	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.
OPERATING MARGIN										45.5%	48.7%	47.0%	48.8%	43.0%	44.4%	44.6%	46.1%	--	
DEPRECIATION (\$MILL)										7.4	7.9	8.3	8.7	8.8	9.2	9.6	10.3	--	
NET PROFIT (\$MILL)										6.7	9.8	8.3	9.5	11.3	13.0	14.0	14.3	--	
INCOME TAX RATE										40.8%	40.2%	40.2%	40.1%	--	--	--	--	--	
NET PROFIT MARGIN										10.4%	14.0%	12.0%	13.1%	14.7%	16.4%	17.0%	17.8%	--	
WORKING CAP'L (\$MILL)										d11.4	d11.4	d12.3	d13.5	d8.8	d4.7	d9.5	d21.6	--	
LONG-TERM DEBT (\$MILL)										106.5	106.3	105.5	105.0	103.6	102.3	105.6	115.9	--	
SHR. EQUITY (\$MILL)										113.0	118.2	121.8	125.6	132.3	139.0	146.6	153.3	--	
RETURN ON TOTAL CAP'L										4.6%	5.9%	5.1%	5.5%	6.3%	6.7%	6.8%	6.5%	--	
RETURN ON SHR. EQUITY										6.0%	8.3%	6.8%	7.6%	8.5%	9.3%	9.5%	9.3%	--	
RETAINED TO COM EQ										.5%	2.5%	.9%	1.6%	2.6%	3.4%	3.7%	3.6%	--	
ALL DIV'DS TO NET PROF										92%	70%	87%	79%	69%	63%	61%	62%	--	
Note: No analyst estimates available.																			
ANNUAL RATES										INDUSTRY: Water Utility									
of change (per share)										BUSINESS: Artesian Resources Corp. operates as the holding company of nine wholly-owned subsidiaries offering water, wastewater and other services in Delaware, Maryland and Pennsylvania. Artesian Water, its principal subsidiary, distributes and sells water to residential, commercial, industrial, governmental, municipal, and utility customers throughout Delaware. In addition, Artesian Water provides services to other water utilities, including operations and billing functions, and has contract operation agreements with private and municipal water providers. It also provides water for public and private fire protection to customers in service territories. Artesian supplies 7.9 billion gallons of water per year through 1,311 miles of main to nearly a third of Delaware residents. Artesian Wastewater Management, Inc. is a regulated entity that owns wastewater collection and treatment infrastructure and provides wastewater services to customers in Delaware. Has 241 employees. Chairman, C.E.O. & President: Dian C. Taylor Address: 664 Churchmans Rd., Newark, DE 19702. Tel.: (302) 453-6900. Internet: www.artesianresources.com.									
5 Yrs.										1.0									
1 Yr.										3									
Sales										2.5									
"Cash Flow"										8.2									
Earnings										4.6									
Dividends										1.5									
Book Value										4.6									
Fiscal Year										19.0									
QUARTERLY SALES (\$mill.)										16.1									
1Q										10.7									
2Q																			
3Q																			
4Q																			
Full Year																			
12/31/17										582.0									
12/31/18										629.4									
12/31/19										--									
12/31/20										--									
Fiscal Year										464.4									
EARNINGS PER SHARE										502.5									
1Q										11.2									
2Q										11.2									
3Q										11.8									
4Q										11.8									
Full Year										516.0									
12/31/16										494.6									
12/31/17										529.8									
12/31/18										536.5									
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CALIFORNIA WATER NYSE-CWT										RECENT PRICE	52.74	P/E RATIO	33.2	(Trailing: 41.9 Median: 22.0)	RELATIVE P/E RATIO	2.00	DIV'D YLD	1.5%	VALUE LINE																										
TIMELINESS	3	Lowered 9/20/19	High: 23.3	24.1	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	67.6	77.7	87.8	97.9	108.0	Target Price Range	2022	2023	2024																						
SAFETY	3	Lowered 7/27/07	Low: 13.8	16.7	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6																															
TECHNICAL	2	Raised 9/27/19	<div>LEGENDS</div> <div>1.33 x Dividends p sh divided by Interest Rate</div> <div>..... Relative Price Strength</div> <div>2 for 1 split 6/11</div> <div>Options: Yes</div> <div>Shaded area indicates recession</div>										<div>18-Month Target Price Range</div> <div>Low-High Midpoint (% to Mid)</div> <div>\$46-\$72 \$59 (10%)</div>																																
2022-24 PROJECTIONS																																													
High Price Gain Ann'l Total Return																																													
Low 35 55 (+5%) 3% -7%																																													
Institutional Decisions																																													
4Q2018 1Q2019 2Q2019																																													
to Buy 126 132 120																																													
to Sell 76 81 102																																													
Net Buy 50 51 18																																													
(Net Sell) 35160 35598 35947																																													
Percent shares traded																																													
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© VALUE LINE PUB. LLC 22-24																																													
2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Revenues per sh					15.50																						
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	13.89	14.53	14.45	14.90	"Cash Flow" per sh					3.60																						
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	3.00	3.11	3.00	3.35	Earnings per sh					2.00																						
1.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.35	1.70	Div'd Decl'd per sh					1.05																						
.56	.57	.57	.58	.58	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	.82		Cap'l Spending per sh					3.65																						
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	5.40	5.65	3.95	4.60	Book Value per sh					17.00																						
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	14.44	15.19	15.45	15.80	Common Shs Outstanding					50.00																						
33.86	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	48.01	48.07	48.50	48.00	Avg Ann'l P/E Ratio					23.0																						
22.1	20.1	24.9	29.2	28.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	30.3	30.3	Avg Ann'l Div'd Yield					1.25																						
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	1.55	1.35	1.64	1.64	1.64																												
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%	1.8%	1.8%	1.8%																												
CAPITAL STRUCTURE as of 6/30/19																			449.4	460.4	501.8	560.0	584.1	597.5	585.4	609.4	666.9	698.2	700	730	Revenues (\$mil) E					775									
Total Debt \$978.1 mil. Due in 5 Yrs \$430.1 mil.																			40.6	37.7	36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	66.0	83.5	Net Profit (\$mil)					100									
LT Debt \$807.7 mil. LT Interest \$40.0 mil. (53% of Cap'l)																			7.6%	39.5%	40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	21.0%	21.0%	Income Tax Rate					21.0%									
																			4.3%	4.2%	7.6%	8.0%	3.4%	2.7%	4.3%	6.1%	3.5%	3.1%	5.0%	5.0%	AFUDC % to Net Profit					5.0%									
Pension Assets-12/18 \$460.7 mil. Oblig. \$639.9 mil.																			47.1%	52.4%	51.7%	47.8%	41.4%	40.1%	44.4%	44.6%	42.7%	49.3%	51.5%	47.5%	Long-Term Debt Ratio					39.5%									
Pfd Stock None																			52.9%	47.6%	48.3%	52.2%	58.4%	59.5%	55.6%	55.4%	57.3%	50.7%	48.5%	52.5%	Common Equity Ratio					60.5%									
Common Stock 48,140,000 shs.																			794.9	914.7	931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1550	1475	Total Capital (\$mil)					1400									
																			118.1	1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1659.3	2048.0	2232.7	2300	2385	Net Plant (\$mil)					2500									
																			6.5%	5.5%	5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.0%	6.5%	Return on Total Cap'l					8.0%									
																			9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.5%	11.0%	Return on Shr. Equity					12.0%									
																			9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.5%	11.0%	Return on Com Equity					12.0%									
																			3.8%	3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.5%	5.5%	Related to Com Eq					5.5%									
																			60%	66%	71%	62%	56%	55%	71%	68%	51%	55%	58%	48%	All Divs to Net Prof					53%									
CASH ASSETS																			94.8	47.2	54.6																								
Other																			133.1	141.5	151.4																								
Current Assets																			227.9	188.7	206.0																								
Accts Payable																			94.0	95.6	97.4																								
Debt Due																			291.0	170.0	170.4																								
Other																			106.0	55.6	63.6																								
Current Liab.																			491.0	321.2	331.4																								
BUSINESS: California Water Service Group provides regulated and nonregulated water service to 486,900 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, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp. West Hawaii Utilities (8/08). Revenue breakdown: '18: residential, 67%; business, 19%; industrial, 5%; public authorities, 5%; other 4%. Off. and dir. own 1% of common stock (4/19 proxy). Has 1,184 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.																																													
Similar to its industry peers, California Water Service Group stock stamped a fresh all-time high price in early September. The shares have risen almost 10% in value since our July review, but are currently trading slightly below record levels. In our view, it is more likely that the recent price surge is being fueled by the market's increased appetite for defensive securities amidst elevated valuations, rather than company-specific fundamentals. Even so, second-quarter results were generally good. Revenues of \$179 million, an annual improvement of about 2%, came in on par with our expectation, as base rate increases provided a modest boost. On the earnings front, California posted June-period share net of \$0.35, four cents better than the previous-year tally, but a nickel shy of our call. It would appear that management has yet to corral operating expenses, and is still faced with higher income taxes and interest costs. All told, we are shaving \$0.05 from our current-year bottom-line forecast, to \$1.35 a share. The long-term story has not changed much. Specifically, through an intensive capital allocation program, California Water is poised to invest approximately \$750 million over the coming three to five years to revamp its aging infrastructure. The upgrades, which focus largely on water pipe systems and improving treatment plant processes, should modestly lower operating costs through increased efficiencies and more-reliable service. In addition, rate hikes are likely in the cards, which would aid in recuperating a portion of the capital spent on upgrades. Overall, we remain optimistic that the company can earn \$2.00 per share by 2022-2024. We would be remiss to recommend these shares at recent levels. Though long-term business prospects are bright, and the regulated water space tends to hold up better than most in a down market, capital appreciation potential three to five years hence is limited. Moreover, upside 18 months out is only average. Finally, the issue is ranked to track the broader market over the coming six to 12 months, and the dividend yield falls short of the Value Line median.																																													
Nicholas P. Patrikis																																													
October 11, 2019																																													
(A) Basic EPS. Excl. nonrecurring gain (loss). '11, 4¢. Next earnings report due early Nov. (B) Dividends historically paid in late Feb., May, Aug., and Nov. ÷ Div'd reinvestment plan																																													
available. Incl. intangible assets. In '18: \$24.7 mil. \$0.51/sh. (D) In millions, adjusted for splits.																																													
Company's Financial Strength B++ Stock's Price Stability 80 Price Growth Persistence 60 Earnings Predictability 65																																													
To subscribe call 1-800-VALUELINE																																													





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)	10.84 %
Risk Premium Using an Adjusted Total Market Approach (2)	<u>9.39 %</u>
Average	<u>10.12 %</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]
Proxy Group of Six Water Companies	LT Average Predicted Variance	Spot Predicted Variance	Recommended Variance (2)	GARCH Coefficient	Predicted Risk Premium (3)	Risk-Free Rate (4)	Indicated ROE (5)
American States Water Co.	0.38%	0.44%	0.41%	1.98126	10.16%	2.64%	12.80%
American Water Works Company Inc	NMF	NMF	NMF	6.51236	NMF	2.64%	NMF
Artesian Resources Corporation	0.32%	0.27%	0.29%	2.11410	7.74%	2.64%	10.38%
California Water Service Group	0.32%	0.27%	0.29%	2.02252	7.39%	2.64%	10.03%
Middlesex Water Co.	0.30%	0.24%	0.27%	2.18875	7.39%	2.64%	10.03%
York Water Co.	0.45%	0.31%	0.38%	2.20343	10.61%	2.64%	13.25%
						Average	11.30%
						Median	10.38%
					Average of Mean and Median		10.84%

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) Average of columns [1] and [2].
- (3) $(1 + (\text{Column [3]} * \text{Column [4]})^{12}) - 1$.
- (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)	3.60 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	<u>0.35</u> (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	3.95 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.06</u> (3)
5.	Adjusted Prospective Bond Yield	4.01 %
6.	Equity Risk Premium (4)	<u>5.38</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u>9.39</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 0.35% 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 0.06% upward adjustment is derived by taking 1/6 of the spread between A2 and A3 Public Utility Bonds ($1/6 * 0.37\% = 0.06\%$) 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-2019	3.03 %	3.37 %	3.71 %
Aug-2019	2.98	3.29	3.63
Jul-2019	<u>3.29</u>	<u>3.69</u>	<u>4.13</u>
Average	<u>3.10 %</u>	<u>3.45 %</u>	<u>3.82 %</u>

Selected Bond Spreads

A Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:

0.35 % (1)

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

0.37 % (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

	Moody's		Standard & Poor's	
	Long-Term Issuer Rating		Long-Term Issuer Rating	
	October 2019		October 2019	
<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
Artesian Resources Corporation	NR	--	NR	--
California Water Service Group (4)	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>5.8</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)	5.66 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	<u>5.10</u>
3.	Average equity risk premium	<u><u>5.38 %</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)	5.54 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.70
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.12
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	10.23
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.92
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>9.56</u>
7.	Conclusion of Equity Risk Premium	8.85 %
8.	Adjusted Beta (7)	<u>0.64</u>
9.	Forecasted Equity Risk Premium	<u><u>5.66 %</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® 2018 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2018.
- (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 1928-2018 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 2019.
- (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 3.60% (from page 12 of this Schedule) from the projected 3-5 year total annual market return of 13.83% (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 14.52% 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 3.60% results in an expected equity risk premium of 10.92%.
- (6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 13.16% 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 3.60% results in an expected equity risk premium of 9.56%.
- (7) Average of mean and median beta from page 21 of this Schedule.

Sources of Information:

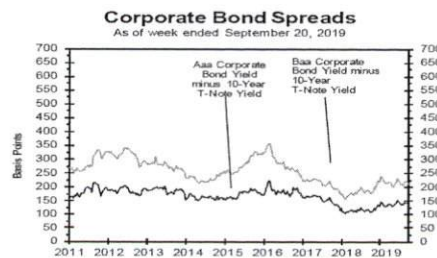
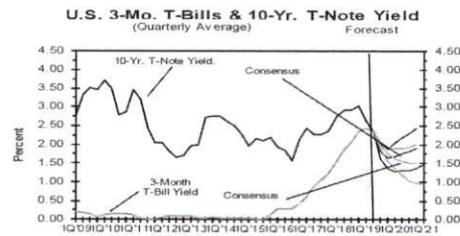
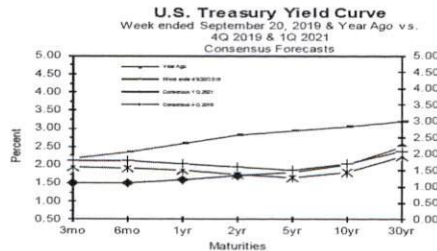
Stocks, Bonds, Bills, and Inflation - 2019 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, October 1, 2019 and June 1, 2019
Bloomberg Professional Service

2 ■ BLUE CHIP FINANCIAL FORECASTS ■ OCTOBER 1, 2019

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 2019	1Q 2020	2Q 2020	3Q 2020	4Q 2020	1Q 2021
	Sep 20	Sep 13	Sep 6	Aug 30	Aug	Jul	Jun	3Q 2019*							
	2019	2018	2018	2018	2018	2019	2019	2019**							
Federal Funds Rate	2.19	2.13	2.13	2.12	2.13	2.40	2.38	2.25	1.8	1.6	1.5	1.5	1.5	1.4	1.4
Prime Rate	5.25	5.25	5.25	5.25	5.25	5.50	5.50	5.35	4.9	4.8	4.7	4.7	4.6	4.6	4.6
LIBOR, 3-mo.	2.15	2.13	2.12	2.13	2.16	2.29	2.40	2.21	2.0	1.9	1.8	1.8	1.8	1.8	1.8
Commercial Paper, 1-mo.	2.07	2.04	2.03	2.06	2.08	2.25	2.35	2.14	1.9	1.7	1.6	1.6	1.6	1.6	1.5
Treasury bill, 3-mo.	1.95	1.96	1.97	1.99	1.99	2.15	2.22	2.04	1.8	1.6	1.6	1.5	1.5	1.5	1.5
Treasury bill, 6-mo.	1.92	1.89	1.88	1.90	1.93	2.08	2.17	1.98	1.8	1.7	1.6	1.5	1.6	1.5	1.5
Treasury bill, 1 yr.	1.86	1.81	1.72	1.75	1.77	1.96	2.00	1.85	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Treasury note, 2 yr.	1.73	1.69	1.50	1.52	1.57	1.84	1.81	1.69	1.6	1.6	1.6	1.6	1.6	1.6	1.7
Treasury note, 5 yr.	1.66	1.61	1.38	1.40	1.49	1.83	1.83	1.63	1.5	1.6	1.6	1.7	1.7	1.7	1.8
Treasury note, 10 yr.	1.80	1.76	1.52	1.50	1.63	2.06	2.07	1.81	1.7	1.7	1.8	1.8	1.9	1.9	2.0
Treasury note, 30 yr.	2.24	2.22	2.00	1.98	2.12	2.57	2.57	2.30	2.1	2.2	2.2	2.3	2.4	2.4	2.5
Corporate Aaa bond	3.18	3.18	2.96	2.93	3.06	3.43	3.56	3.21	3.0	3.0	3.2	3.3	3.4	3.4	3.5
Corporate Baa bond	3.92	3.92	3.72	3.70	3.82	4.16	4.33	3.96	4.0	4.1	4.2	4.3	4.4	4.4	4.4
State & Local bonds	3.21	3.14	3.06	3.05	3.08	3.24	3.29	3.15	2.9	2.9	3.0	3.1	3.1	3.1	3.2
Home mortgage rate	3.73	3.56	3.49	3.58	3.62	3.77	3.80	3.66	3.6	3.6	3.7	3.7	3.8	3.8	3.8
Key Assumptions	History								Consensus Forecasts-Quarterly						
	4Q				1Q				4Q 2019	1Q 2020	2Q 2020	3Q 2020	4Q 2020	1Q 2021	
	2017	2018	2018	2018	2018	2019	2019	2019**							
	2017	2018	2018	2018	2018	2019	2019	2019**							
Fed's AFE \$ Index	106.2	102.9	105.5	107.8	109.4	109.4	110.2	110.4	110.3	110.0	109.2	108.9	108.6	108.9	108.9
Real GDP	3.5	2.5	3.5	2.9	1.1	3.1	2.0	2.0	1.8	1.7	1.7	1.6	1.8	1.8	1.9
GDP Price Index	2.6	2.3	3.2	2.0	1.6	1.1	2.4	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0
Consumer Price Index	3.1	3.2	2.1	2.0	1.5	0.9	2.9	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0

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 3Q 2019 are based on historical data through the week ended September 20. **Data for 3Q 2019 for the Fed's AFE \$ Index based on data through week ended September 20. Figures for 3Q 2019 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, 2019

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 2021 through 2025 and averages for the five-year periods 2021-2025 and 2026-2030. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

		Average For The Year					Five-Year Averages	
		2021	2022	2023	2024	2025	2021-2025	2026-2030
1. Federal Funds Rate	CONSENSUS	2.4	2.4	2.6	2.7	2.8	2.6	2.8
	Top 10 Average	3.1	3.2	3.4	3.4	3.4	3.3	3.4
	Bottom 10 Average	1.5	1.6	1.7	2.1	2.2	1.8	2.1
2. Prime Rate	CONSENSUS	5.4	5.5	5.6	5.8	5.8	5.6	5.7
	Top 10 Average	6.1	6.2	6.4	6.4	6.4	6.3	6.2
	Bottom 10 Average	4.6	4.7	4.8	5.1	5.3	4.9	5.1
3. LIBOR, 3-Mo.	CONSENSUS	2.7	2.8	2.8	3.0	3.0	2.9	3.0
	Top 10 Average	3.3	3.4	3.6	3.6	3.6	3.5	3.6
	Bottom 10 Average	2.1	2.1	2.0	2.4	2.5	2.2	2.5
4. Commercial Paper, 1-Mo.	CONSENSUS	2.5	2.6	2.7	2.9	2.9	2.7	2.9
	Top 10 Average	3.1	3.2	3.4	3.4	3.5	3.3	3.4
	Bottom 10 Average	2.0	2.0	2.0	2.4	2.4	2.2	2.4
5. Treasury Bill Yield, 3-Mo.	CONSENSUS	2.4	2.4	2.5	2.7	2.8	2.6	2.8
	Top 10 Average	3.1	3.2	3.4	3.4	3.4	3.3	3.4
	Bottom 10 Average	1.5	1.6	1.7	2.0	2.2	1.8	2.1
6. Treasury Bill Yield, 6-Mo.	CONSENSUS	2.4	2.5	2.7	2.9	2.9	2.7	2.9
	Top 10 Average	3.1	3.3	3.5	3.5	3.5	3.4	3.5
	Bottom 10 Average	1.7	1.7	1.8	2.2	2.4	2.0	2.3
7. Treasury Bill Yield, 1-Yr.	CONSENSUS	2.5	2.6	2.8	3.0	3.0	2.8	3.0
	Top 10 Average	3.3	3.4	3.6	3.6	3.7	3.5	3.7
	Bottom 10 Average	1.8	1.8	2.0	2.3	2.4	2.0	2.3
8. Treasury Note Yield, 2-Yr.	CONSENSUS	2.6	2.7	2.9	3.0	3.1	2.9	3.1
	Top 10 Average	3.3	3.5	3.7	3.8	3.8	3.6	3.8
	Bottom 10 Average	1.8	1.9	2.0	2.3	2.4	2.1	2.3
10. Treasury Note Yield, 5-Yr.	CONSENSUS	2.8	2.9	3.1	3.2	3.3	3.0	3.3
	Top 10 Average	3.5	3.7	4.0	4.0	4.0	3.8	4.1
	Bottom 10 Average	2.0	2.1	2.2	2.3	2.5	2.2	2.4
11. Treasury Note Yield, 10-Yr.	CONSENSUS	3.0	3.1	3.3	3.3	3.4	3.2	3.4
	Top 10 Average	3.6	3.9	4.2	4.2	4.2	4.0	4.4
	Bottom 10 Average	2.3	2.4	2.4	2.5	2.6	2.4	2.6
12. Treasury Bond Yield, 30-Yr.	CONSENSUS	3.3	3.5	3.6	3.7	3.8	3.6	3.8
	Top 10 Average	4.0	4.3	4.5	4.6	4.6	4.4	4.8
	Bottom 10 Average	2.7	2.7	2.8	2.9	2.9	2.8	2.9
13. Corporate Aaa Bond Yield	CONSENSUS	4.4	4.6	4.7	4.7	4.8	4.6	4.8
	Top 10 Average	5.0	5.2	5.5	5.5	5.5	5.3	5.6
	Bottom 10 Average	3.8	3.9	3.9	4.0	4.0	3.9	4.0
13. Corporate Baa Bond Yield	CONSENSUS	5.3	5.6	5.7	5.7	5.7	5.6	5.8
	Top 10 Average	6.0	6.3	6.6	6.6	6.7	6.5	6.8
	Bottom 10 Average	4.7	4.8	4.7	4.8	4.8	4.7	4.8
14. State & Local Bonds Yield	CONSENSUS	4.1	4.2	4.3	4.3	4.3	4.2	4.4
	Top 10 Average	4.6	4.9	5.0	5.0	5.0	4.9	5.1
	Bottom 10 Average	3.5	3.6	3.6	3.6	3.6	3.6	3.6
15. Home Mortgage Rate	CONSENSUS	4.7	4.8	4.9	5.0	5.0	4.9	5.0
	Top 10 Average	5.3	5.5	5.8	5.8	5.8	5.6	5.9
	Bottom 10 Average	4.0	4.0	4.0	4.2	4.2	4.1	4.2
A. Fed's AFE Nominal \$ Index	CONSENSUS	108.5	108.2	108.0	107.6	106.9	107.8	106.7
	Top 10 Average	110.8	110.5	110.9	110.8	110.6	110.7	111.2
	Bottom 10 Average	106.6	105.8	104.9	104.6	103.6	105.1	102.9
		Year-Over-Year, % Change					Five-Year Averages	
		2021	2022	2023	2024	2025	2021-2025	2026-2030
B. Real GDP	CONSENSUS	1.9	1.9	2.0	2.1	2.1	2.0	2.1
	Top 10 Average	2.3	2.4	2.4	2.5	2.5	2.4	2.6
	Bottom 10 Average	1.5	1.4	1.6	1.8	1.8	1.6	1.8
C. GDP Chained Price Index	CONSENSUS	2.1	2.1	2.0	2.0	2.0	2.1	2.0
	Top 10 Average	2.4	2.4	2.2	2.2	2.2	2.3	2.2
	Bottom 10 Average	1.8	1.8	1.8	1.9	1.9	1.9	1.8
D. Consumer Price Index	CONSENSUS	2.1	2.2	2.2	2.1	2.1	2.1	2.1
	Top 10 Average	2.5	2.4	2.4	2.4	2.4	2.4	2.4
	Bottom 10 Average	1.7	1.8	1.9	1.9	1.9	1.8	1.8

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	4.00 %
2.	Regression of Historical Equity Risk Premium (2)	6.30
3.	Forecasted Equity Risk Premium Based on PRPM (3)	3.92
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	6.30
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	<u>4.99</u>
6.	Average Equity Risk Premium (6)	<u><u>5.10 %</u></u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2018. 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 - 2018 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 2019.
- (4) Using data from Value Line for the S&P Utilities Index, an expected return of 10.25% 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 3.95%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 6.30%. (10.25% - 3.95% = 6.30%)
- (5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 8.94% 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 3.95%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 4.99%. (8.94% - 3.95% = 4.99%)
- (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]
Proxy Group of Six Water Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
American States Water Co.	0.65	0.53	0.59	9.87 %	2.64 %	8.46 %	9.47 %	8.97 %
American Water Works Company Inc	0.60	0.57	0.59	9.87	2.64	8.46	9.47	8.97
Artesian Resources Corporation	0.65	0.55	0.60	9.87	2.64	8.56	9.55	9.05
California Water Service Group	0.70	0.61	0.66	9.87	2.64	9.15	9.99	9.57
Middlesex Water Co.	0.70	0.70	0.70	9.87	2.64	9.55	10.29	9.92
York Water Co.	0.75	0.62	0.69	9.87	2.64	9.45	10.21	9.83
Mean			0.64			8.94 %	9.83 %	9.39 %
Median			0.63			8.86 %	9.77 %	9.31 %
Average of Mean and Median			0.64			8.90	9.80	9.35 %

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 (1926-2018)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2018:	11.89 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.12
MRP based on Ibbotson Historical Data:	<u>6.77 %</u>

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2018)

9.69 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - September 2019)

9.14 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending October 18, 2019)

Total projected return on the market 3-5 years hence*:	13.83 %
Projected Risk-Free Rate (see note 2):	2.64
MRP based on Value Line Summary & Index:	<u>11.19 %</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:	14.52 %
Projected Risk-Free Rate (see note 2):	2.64
MRP based on Value Line data	<u>11.88 %</u>

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	13.16 %
Projected Risk-Free Rate (see note 2):	2.64
MRP based on Bloomberg data	<u>10.52 %</u>

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.87 %

- (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 2019	2.10 %
First Quarter 2020	2.20
Second Quarter 2020	2.20
Third Quarter 2020	2.30
Fourth Quarter 2020	2.40
First Quarter 2021	2.50
2021-2025	3.60
2026-2030	3.80
	<u>2.64 %</u>

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

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, October 1, 2019 and June 1, 2019
Stocks, Bonds, Bills, and Inflation - 2019 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 0.24 – 0.68 and residual standard error of the regression range of 2.7385 – 3.2661 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 0.1319. 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

$$\text{Thus, } 0.1070 = \frac{3.0023}{\sqrt{518}} = \frac{3.0023}{22.7596}$$

Source of Information: Value Line, Inc., September 2019
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]
	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
<u>Proxy Group of Six Water Companies</u>				
American States Water Co.	0.65	0.45	2.6675	0.0960
American Water Works Company Inc	0.60	0.34	2.1751	0.0783
Artesian Resources Corporation	0.65	0.41	3.4253	0.1233
California Water Service Group	0.70	0.48	2.9094	0.1047
Middlesex Water Co.	0.70	0.54	3.3409	0.1202
York Water Co.	0.75	0.55	3.4957	0.1258
Average	0.68	0.46	3.0023	0.1081
Beta Range (+/- 2 std. Devs. of Beta) 2 std. Devs. of Beta	0.24 0.22	0.68		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.7385	3.2661		
Std. dev. of the Res. Std. Err.	0.1319			
2 std. devs. of the Res. Std. Err.	0.2638			

Source of Information: Valueline Proprietary Database, September 2019

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]
Proxy Group of Ten Non-Price Regulated Companies	VL Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
AutoZone Inc.	0.80	0.64	2.8861	0.1039
Cheesecake Factory	0.75	0.55	2.8814	0.1037
Casey's Gen'l Stores	0.75	0.56	3.0241	0.1088
Cracker Barrel	0.70	0.54	3.0683	0.1104
Campbell Soup	0.65	0.46	2.9384	0.1057
Dunkin' Brands Group	0.70	0.47	2.8395	0.1022
Darden Restaurants	0.80	0.63	2.9091	0.1047
Tyson Foods 'A'	0.75	0.59	3.2539	0.1171
Texas Roadhouse	0.80	0.67	3.1481	0.1133
Viad Corp.	0.80	0.64	3.0017	0.1080
Average	0.75	0.58	3.0000	0.1100
Proxy Group of Six Water Companies	0.68	0.46	3.0023	0.1081

Source of Information:

Valueline Proprietary Database, September 2019

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

<u>Principal Methods</u>	<u>Proxy Group of Ten Non-Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	11.63 %
Risk Premium Model (RPM) (2)	11.41
Capital Asset Pricing Model (CAPM) (3)	<u>10.44</u>
	Mean <u>11.16</u> %
	Median <u>11.41</u> %
	Average of Mean and Median <u>11.29</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]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Ten Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth 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)
AutoZone Inc.	- %	13.50 %	12.20 %	10.25 %	11.98 %	- %	NA %
Cheesecake Factory	3.60	7.50	11.80	6.98	8.76	3.76	12.52
Casey's Gen'l Stores	0.77	5.50	9.10	7.88	7.49	0.80	8.29
Cracker Barrel	3.16	10.00	10.00	(0.40)	10.00	3.32	13.32
Campbell Soup	3.13	1.00	6.00	(4.00)	3.50	3.18	6.68
Dunkin' Brands Group	1.87	10.00	9.80	7.58	9.13	1.96	11.09
Darden Restaurants	2.95	11.00	8.90	8.63	9.51	3.09	12.60
Tyson Foods 'A'	0.75	7.50	NA	6.25	6.88	0.78	7.66
Texas Roadhouse	2.30	12.50	11.30	8.55	10.78	2.42	13.20
Viad Corp.	0.60	9.50	NA	14.00	11.75	0.64	12.39
						Mean	10.86 %
						Median	12.39 %
					Average of Mean and Median		11.63 %

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 October 18, 2019. 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.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 10/18/2019
www.zacks.com Downloaded on 10/18/2019
www.yahoo.com Downloaded on 10/18/2019

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 Ten Non-Price Regulated Companies</u>
1.	Prospective Yield on Baa Rated Corporate Bonds (1)	4.60 %
2.	Equity Risk Premium (2)	<u>6.81</u>
3.	Risk Premium Derived Common Equity Cost Rate	<u><u>11.41 %</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, 2019 and June 1, 2019 (see pages 18 and 19 of this Schedule). The estimates are detailed below.

Fourth Quarter 2019	4.00 %
First Quarter 2020	4.10
Second Quarter 2020	4.20
Third Quarter 2020	4.30
Fourth Quarter 2020	4.40
First Quarter 2021	4.40
2021-2025	5.60
2026-2030	<u>5.80</u>
Average	<u><u>4.60 %</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 Ten Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Six Water Companies

	Moody's		Standard & Poor's	
	Long-Term Issuer Rating October 2019		Long-Term Issuer Rating October 2019	
<u>Proxy Group of Ten Non-Price Regulated Companies</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	--
Casey's Gen'l Stores	NR	--	NR	--
Cracker Barrel	WR	--	NR	--
Campbell Soup	Baa2	9.0	BBB-	10.0
Dunkin' Brands Group	NR	--	NR	--
Darden Restaurants	Baa2	9.0	BBB	9.0
Tyson Foods 'A'	Baa2	9.0	BBB	9.0
Texas Roadhouse	NR	--	NR	--
Viad Corp.	WR	--	NR	--
Average	<u>Baa2</u>	<u>8.8</u>	<u>BBB</u>	<u>9.3</u>

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 Ten 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 Ten Non-Price Regulated Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.54 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.70
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.12
5.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	10.23
6.	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies (5)	10.92
7.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>9.56</u>
8.	Conclusion of Equity Risk Premium	8.85 %
9.	Adjusted Beta (7)	<u>0.77</u>
10.	Forecasted Equity Risk Premium	<u><u>6.81 %</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 - 2019 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, October 1, 2019 and June 1, 2019
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]
Proxy Group of Ten Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
AutoZone Inc.	0.75	0.67	0.71	9.87 %	2.64 %	9.65 %	10.36 %	10.00 %
Cheesecake Factory	0.75	0.76	0.76	9.87	2.64	10.14	10.73	10.44
Casey's Gen'l Stores	0.75	0.78	0.77	9.87	2.64	10.24	10.81	10.52
Cracker Barrel	0.70	0.72	0.71	9.87	2.64	9.65	10.36	10.00
Campbell Soup	0.65	0.64	0.65	9.87	2.64	9.05	9.92	9.49
Dunkin' Brands Group	0.70	0.83	0.77	9.87	2.64	10.24	10.81	10.52
Darden Restaurants	0.80	0.78	0.79	9.87	2.64	10.44	10.95	10.69
Tyson Foods 'A'	0.75	0.77	0.76	9.87	2.64	10.14	10.73	10.44
Texas Roadhouse	0.80	0.86	0.83	9.87	2.64	10.83	11.25	11.04
Viad Corp.	0.80	0.82	0.81	9.87	2.64	10.63	11.10	10.87
Mean			0.76			10.10 %	10.70 %	10.40 %
Median			0.77			10.19 %	10.77 %	10.48 %
Average of Mean and Median			0.77			10.15 %	10.74 %	10.44 %

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
Hinton DCF Analysis using only Projected Growth in EPS

DCF ANALYSIS

Group of Water Utility Companies

Company Name	Yield ¹	Value Line ²		Yahoo		Average
		Forecast		Forecast ³		
		EPS		EPS		
		5-Yr		5-Yr		
1 Amer. States Water	1.43 %	8.00 %		8.20 %		8.10 %
2 Amer. Water Works	1.70	9.50		6.00		7.75
3 Aqua America	2.16	8.00		6.10		7.05
4 California Water	1.48	8.00		9.80		8.90
5 Middlesex Water	1.57	7.50		2.70		5.10
6 SJW Group	1.82	6.00		14.00		10.00
7 York Water Co.	1.78	9.50		4.90		7.20
Average	1.71 %	8.07 %		7.39 %		7.73 %
Estimated Cost of Equity		9.78 %		9.09 %		9.43 %

Sources:

¹ Value Line Investment Survey, Summary and Index from July 26, 2019 to October 18, 2019.

² Value Line Investment Survey, Standard Edition, October 11, 2019.

³ Yahoo Earnings Forecast as of October 17, 2019.

⁴ Value Line Investment Survey, Standard Edition, August 30, 2019.

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]
		Based on Mr. Hinton's Water Proxy Group	
Line No.		Market Value	Book Value
1.	Per Share	\$ 67.07 (1)	\$ 18.62 (2)
2.	DCF Cost Rate (3)	8.64%	8.64%
3.	Return in Dollars (4)	\$ 5.795	\$ 1.609
4.	Dividends (5)	\$ 1.140	\$ 1.140
5.	Growth in Dollars (6)	\$ 4.655	\$ 0.469
6.	Return on Market Value (7)	8.64%	2.40%
7.	Rate of Growth on Market Value (8)	6.94%	0.70%

Notes:

- (1) Average of the 13-week ending October 18, 2019 prices from Value Line Summary & Index.
- (2) Average book value dividing total common equity at year-end 2018 by common shares outstanding at year-end 2018 for each proxy group company.
- (3) Mr. Hinton's Recommended DCF cost rate on from Public Staff Hinton Exhibit 8.
- (4) Line 1 x Line 2.
- (5) Dividends are based on the average 1.7% dividend yield for Mr. Hinton's water proxy group from Public Staff Hinton Exhibit 4.
- (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

$$\begin{aligned}
 K_u &= K_e - (((K_u - i) 1 - t) D / E) - (K_u - d) P / E \\
 K_u &= 8.64\% - (((K_u - 5.22\%) 1 - 21\%) 23.31\% / 76.65\%) - (K_u - 7.38\%) 0.04\% / 76.65\% \\
 K_u &= 8.64\% - (((K_u - 5.22\%) 79.00\%) 30.41\%) - (K_u - 7.38\%) 0.05\% \\
 K_u &= 8.64\% - ((79.00\% * K_u - 4.1247\%) 30.41\%) - (0.05\% * K_u - 0.00\%) \\
 K_u &= 8.64\% - (24.03\% * K_u - 1.25\%) -0.05\% * K_u + 0.00\% \\
 K_u &= 8.64\% -24.03\% * K_u + 1.25\% -0.05\% * K_u + 0.00\% \\
 K_u &= 9.90\% -24.08\% * K_u \\
 124.08\% * K_u &= 9.90\% \\
 K_u &= 7.98\%
 \end{aligned}$$

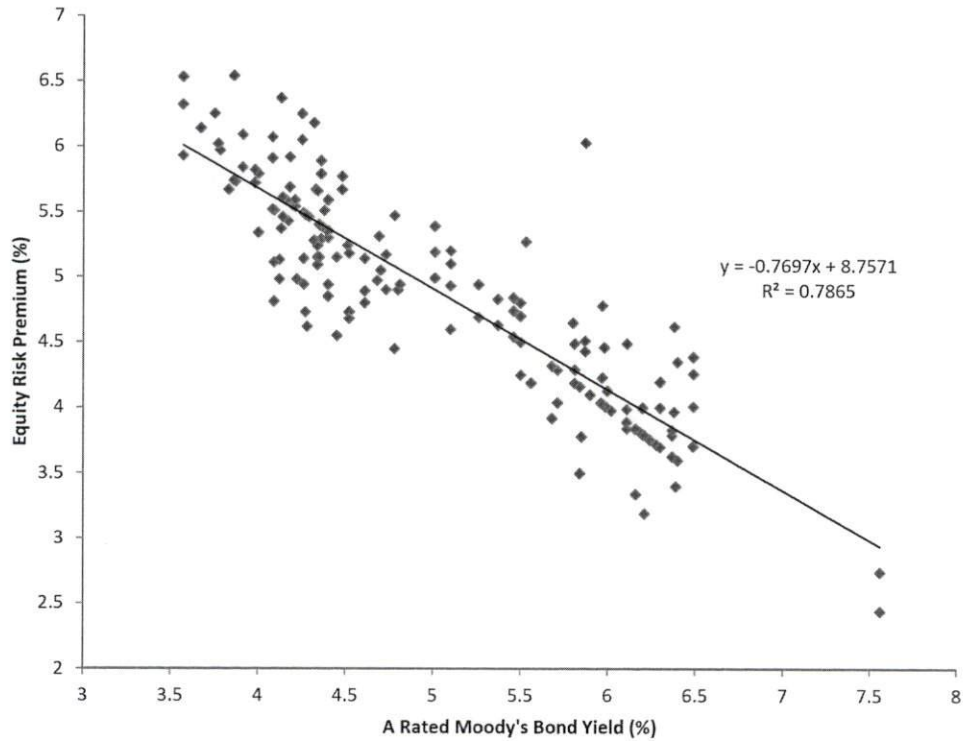
Re-lever to Indicated Book Value Capital Structure DCF

$$\begin{aligned}
 K_e &= K_u + (((K_u - i) 1 - t) D / E) + (K_u - d) P / E \\
 K_e &= 7.98\% + (((7.98\% - 5.22\%) 1 - 21\%) 45.17\% / 54.74\%) + (7.98\% - 7.38\%) 0.09\% / 54.74\% \\
 K_e &= 7.98\% + (((2.76\%) 79\%) 82.51\%) + (0.60\%) 0.17\% \\
 K_e &= 7.98\% + ((2.18\%) 82.51\%) + (0.00\%) \\
 K_e &= 7.98\% + (1.80\%) + 0.00\% \\
 K_e &= 9.78\%
 \end{aligned}$$

Where:

K_u = Un-levered (i.e., 100% equity) cost of common equity
 K_e = 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
8.757137 %	-0.769728	3.95 %	5.72 %	9.67 %

Notes:

(1) From line 3 of page 12 of Schedule DWD-1R.

Sources of Information:

Blue Chip Financial Forecasts October 1, 2019 and June 1, 2019
Regulatory Research Associates
Bloomberg Professional Services

Carolina Water Service, Inc. of North Carolina
Corrected CAPM using a Projected Risk-Free Rate, Projected Risk Premiums
and the use of the ECAPM

Capital Asset Pricing Model

Expected Market Return using Arithmetic Mean

Company	(R _{fi})	(β)	(R _m)	(K)		
	Risk free Rate ¹	Value Line Beta ²	Expected Return on Market ³	CAPM	ECAPM	Average
1 American States Water	2.64%	0.70	12.87%	9.80%	10.56%	10.18%
2 American Water Works	2.64%	0.60	12.87%	8.78%	9.80%	9.29%
3 Aqua America	2.64%	0.70	12.87%	9.80%	10.56%	10.18%
4 California Water	2.64%	0.70	12.87%	9.80%	10.56%	10.18%
5 Middlesex Water	2.64%	0.75	12.87%	10.31%	10.95%	10.63%
6 SJW Group	2.64%	0.60	12.87%	8.78%	9.80%	9.29%
7 York Water	2.64%	0.75	12.87%	10.31%	10.95%	10.63%
Mean						10.05%
Median						10.18%
Average						10.12%

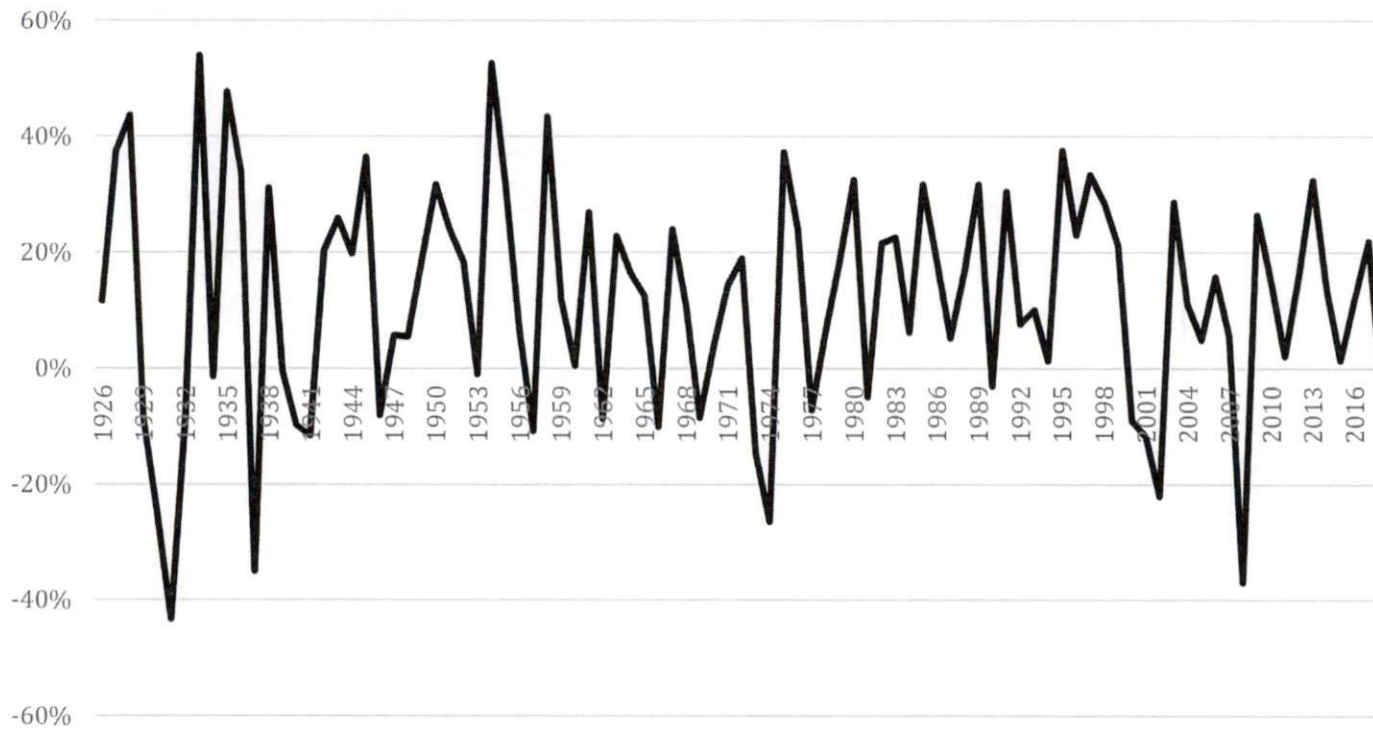
Sources:

¹ From note 2 of page 22 of Schedule DWD-1R.

² Value Line Investment Survey, October 18, 2019.

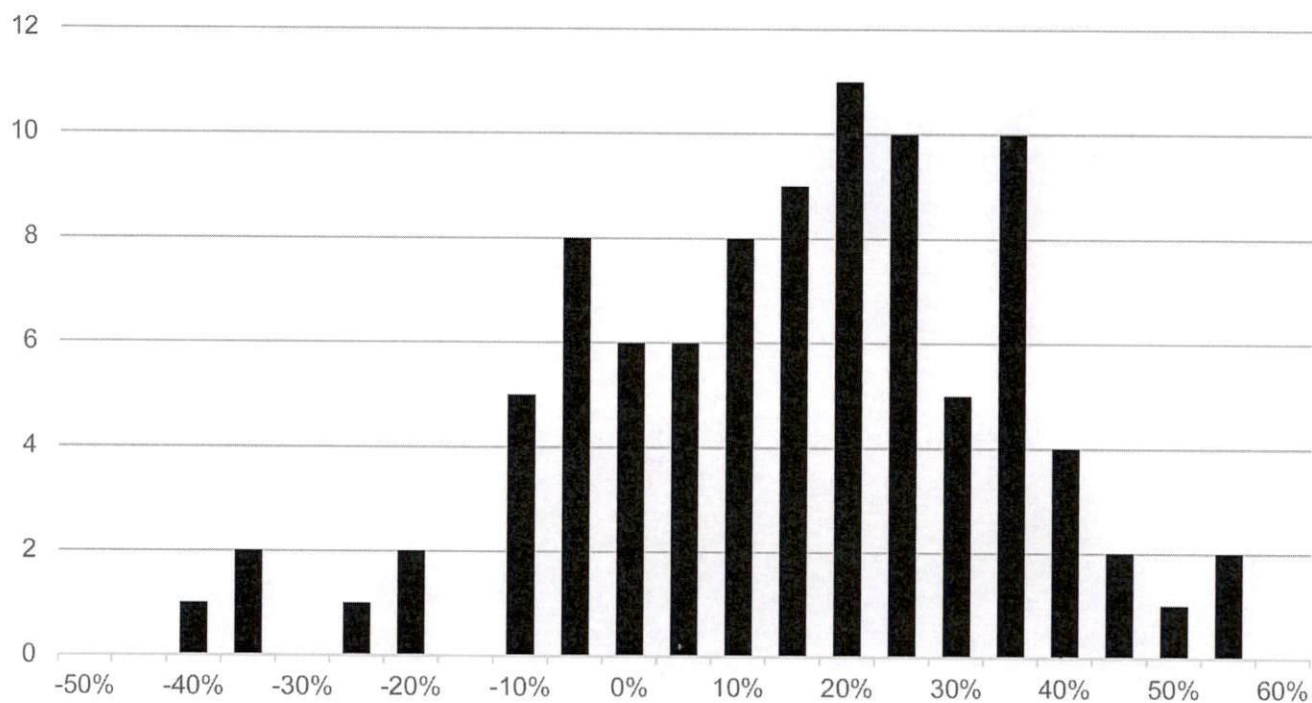
³ Duff and Phelps, SBBI Valuation Edition, 2019 Yearbook, Exhibit 2.3 and Measure 4 of the expected market return shown on note 1 of page 22 of Schedule DWD-1R.

U.S. Large Company Stock Returns 1926-2018



Source of Information: Duff & Phelps, SBBI 2019 Yearbook: Stocks, Bonds, Bills, and Inflation 1926-2018, Appendix A

Frequency Distribution of Observed Market Returns 1926-2018



Source of Information: Duff & Phelps, SBBI 2019 Yearbook: Stocks, Bonds, Bills, and Inflation 1926-2018, Appendix A

Carolina Water Service, Inc. of North Carolina
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Mr. Hinton's Water 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 0.24 – 0.66 and residual standard error of the regression range of 2.6222 – 3.1274 of Mr. Hinton's water proxy group.

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

The standard deviation of the Mr. Hinton's water proxy group's residual standard error of the regression is 0.1263. 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

$$\text{Thus, } 0.1263 = \frac{2.8748}{\sqrt{518}} = \frac{2.8748}{22.7596}$$

Source of Information: Value Line, Inc., September 2019
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]
	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
<u>Mr. Hinton's Water Proxy Group</u>				
Amer. States Water	0.65	0.45	2.6675	0.0960
Amer. Water Works	0.60	0.34	2.1751	0.0783
Aqua America	0.65	0.46	2.2680	0.0816
California Water	0.70	0.48	2.9094	0.1047
Middlesex Water	0.70	0.54	3.3409	0.1202
SJW Group	0.60	0.34	3.2668	0.1176
York Water Co. (The)	0.75	0.55	3.4957	0.1258
Average	0.66	0.45	2.8748	0.1035
Beta Range (+/- 2 std. Devs. of Beta)	0.24	0.66		
2 std. Devs. of Beta	0.21			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.6222	3.1274		
Std. dev. of the Res. Std. Err.	0.1263			
2 std. devs. of the Res. Std. Err.	0.2526			

Source of Information: Value Line Proprietary Database - September 2019

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

	[1]	[2]	[3]	[4]
Proxy Group of Twelve Non-Price Regulated Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
AutoZone Inc.	0.80	0.64	2.8861	0.1039
Cheesecake Factory	0.75	0.55	2.8814	0.1037
Casey's Gen'l Stores	0.75	0.56	3.0241	0.1088
Cboe Global Markets	0.70	0.51	2.6739	0.0962
Cracker Barrel	0.70	0.54	3.0683	0.1104
Campbell Soup	0.65	0.46	2.9384	0.1057
Dunkin' Brands Group	0.70	0.47	2.8395	0.1022
Darden Restaurants	0.80	0.63	2.9091	0.1047
Forrester Research	0.75	0.57	2.6277	0.0946
Cedar Fair L.P.	0.75	0.60	2.6331	0.0948
Hormel Foods	0.65	0.44	2.6587	0.0957
Viad Corp.	0.80	0.64	3.0017	0.1080
Average	0.73	0.55	2.8452	0.1024
Mr. Hinton's Water Proxy Group	0.66	0.45	2.8748	0.1035

Source of Information: Value Line Proprietary Database - September 2019

Carolina Water Service, Inc. of North Carolina
Selection of a Non-Price Regulated Proxy Group using
Mr. Hinton's Measures of Risk from Value Line

<u>Company Name</u>	<u>Beta</u>	<u>Safety Ranking</u>	<u>Earnings Predictability</u>	<u>Financial Strength Rating</u>	<u>Price Stability</u>
Campbell Soup Co	0.65	2	85	B++	80
Flowers Foods Inc	0.70	3	80	B+	65
Lancaster Colony Corporation	0.70	2	80	A	90
Altria Group Inc	0.70	2	85	B++	85
Tyson Foods	0.75	3	90	B++	65
WD 40 Co	0.70	2	90	A	95
Yum Brands Inc	0.65	2	80	B+	100
Selection Criteria	0.60 - 0.75	2 - 3	65 - 90	B+ to A	65 - 100

Source of Information: Value Line Investment Analyzer

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

<u>Principal Methods</u>	<u>Proxy Group of Twelve Non-Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	10.11 %
Capital Asset Pricing Model (CAPM) (2)	<u>10.53 %</u>
Mean	<u>10.32 %</u>

Notes:

- (1) Average indicated ROE from both comparable groups as shown on page 6 of this Schedule.
- (2) Average indicated ROE from both comparable groups as shown on page 7 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
Hinton Proxy Companies

	[1]	[2]	[3]	[4]	[5]
Proxy Group of Twelve Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Indicated Common Equity Cost Rate (1)
AutoZone Inc.	- %	13.50	10.25 %	11.88 %	NA %
Cheesecake Factory	3.19	7.50	6.98	7.24	10.43
Casey's Gen'l Stores	0.84	5.50	7.88	6.69	7.53
Cboe Global Markets	1.20	14.50	2.75	8.63	9.83
Cracker Barrel	6.87	10.00	(0.40)	10.00	16.87
Campbell Soup Co	3.50	1.00	(4.00)	1.00	4.50
Dunkin' Brands Group	3.13	10.00	7.58	8.79	11.92
Darden Restaurants	2.93	11.00	8.63	9.82	12.75
Forrester Research	1.95	8.50	12.00	10.25	12.20
Cedar Fair L.P.	-	10.50	6.00	8.25	NA
Hormel Foods	2.09	9.00	5.00	7.00	9.09
Viad Corp.	0.60	9.50	14.00	11.75	12.35
				Mean	10.75 %
				Median	11.18 %
				Average of Mean and Median	10.97 %
Proxy Group of Seven Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Indicated Common Equity Cost Rate (1)
Campbell Soup Co	3.19 %	1.00 %	(4.00) %	1.00 %	4.19 %
Flowers Foods Inc	3.39	6.00	4.00	5.00	8.39
Lancaster Colony Corporation	1.78	7.50	3.00	5.25	7.03
Altria Group Inc	7.29	8.50	6.59	7.55	14.84
Tyson Foods	1.82	7.50	6.25	6.88	8.70
WD 40 Co	1.34	8.50	10.00	9.25	10.59
Yum Brands Inc	1.52	12.00	14.63	13.32	14.84
				Mean	9.80 %
				Median	8.70 %
				Average of Mean and Median	9.25 %

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 October 18, 2019 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 10/18/2019

Carolina Water Service, Inc. of North Carolina
CAPM Results for the Proxy Groups of Non-Price-Regulated Companies
Comparable in Total Risk to the Hinton Proxy Companies

	(R _{fi})	(β)	(R _m)	(K)			
			Expected Return on				
Proxy Group of Twelve Non-Price Regulated Companies	Risk-Free Rate ¹	Value Line Beta ²	the Market ³	CAPM	ECAPM	Average	
1 AutoZone Inc.	2.64%	0.80	12.87%	10.82%	11.33%	11.08%	
2 Cheesecake Factory	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
3 Casey's Gen'l Stores	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
4 Cboe Global Markets	2.64%	0.70	12.87%	9.80%	10.56%	10.18%	
5 Cracker Barrel	2.64%	0.70	12.87%	9.80%	10.56%	10.18%	
6 Campbell Soup	2.64%	0.65	12.87%	9.29%	10.18%	9.73%	
7 Dunkin' Brands Group	2.64%	0.70	12.87%	9.80%	10.56%	10.18%	
8 Darden Restaurants	2.64%	0.80	12.87%	10.82%	11.33%	11.08%	
9 Forrester Research	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
10 Cedar Fair L.P.	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
11 Hormel Foods	2.64%	0.65	12.87%	9.29%	10.18%	9.73%	
12 Viad Corp.	2.64%	0.80	12.87%	10.82%	11.33%	11.08%	
					Mean	10.48%	
					Median	10.63%	
					Average	10.55%	

	(R _{fi})	(β)	(R _m)	(K)			
			Expected Return on				
Proxy Group of Seven Non-Price Regulated Companies	Risk-Free Rate ¹	Value Line Beta ²	the Market ³	CAPM	ECAPM	Average	
1 Campbell Soup Co	2.64%	0.65	12.87%	9.29%	10.18%	9.73%	
2 Flowers Foods Inc	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
3 Lancaster Colony Corporation	2.64%	0.70	12.87%	9.80%	10.56%	10.18%	
4 Altria Group Inc	2.64%	0.70	12.87%	9.80%	10.56%	10.18%	
5 Tyson Foods	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
6 WD 40 Co	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
7 Yum Brands Inc	2.64%	0.75	12.87%	10.31%	10.95%	10.63%	
					Mean	10.37%	
					Median	10.63%	
					Average	10.50%	

Sources:

¹ From note 2 of page 22 of Schedule DWD-1R.

² Value Line Investment Survey, Standard Edition, Various Issues

³ Duff and Phelps, SBBI Valuation Edition, 2019 Yearbook, Exhibit 2.3 and Measure 4 of the expected market return shown on note 1 of page 22 of Schedule DWD-1R.

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	50.90%	5.36% (1)	2.73%	2.73%
Equity	49.10%	10.20% (3)	5.01%	6.54% (4)
Total	100.00%		7.74%	9.26%
Pre-Tax Interest Coverage				3.28
<u>Public Staff Proposed Rates</u>				
Debt	50.90%	5.36% (1)	2.73%	2.73%
Equity	49.10%	9.10% (5)	4.47%	5.83% (4)
Total	100.00%		7.20%	8.56%
Pre-Tax Interest Coverage				3.03
<u>Highest Rate Scenario</u>				
Debt	50.90%	5.36% (1)	2.73%	2.73%
Equity	49.10%	22.22%	10.91%	14.24% (4)
Total	100.00%		13.64%	16.97%
Pre-Tax Interest Coverage				6.00
<u>Lowest Rate Scenario</u>				
Debt	50.90%	5.36% (1)	2.73%	2.73%
Equity	49.10%	9.00%	4.42%	5.77% (4)
Total	100.00%		7.15%	8.49%
Pre-Tax Interest Coverage				3.00

Notes

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

Carolina Water Service, Inc. of North Carolina
Portfolio Ranks by Size and Risk Premiums over CAPM Results
as Compiled by Duff and Phelps 2019 Guide to Cost of Capital

	B-1		B-2		B-3		B-4		B-5		B-6		B-7		B-8	
Portfolio Rank by Size	Market Val. of Equity (in \$millions)	Smoothed Premium over CAPM	Average Book Val. (in \$millions)	Smoothed Premium over CAPM	5-yr Net Income (in \$millions)	Smoothed Premium over CAPM	Market Value of Invested Capital (in \$millions)	Smoothed Premium over CAPM	Total Assets (in \$millions)	Smoothed Premium over CAPM	5-yr EBITDA (in \$millions)	Smoothed Premium over CAPM	Sales (in \$millions)	Smoothed Premium over CAPM	Average Number of Employees	Smoothed Premium over CAPM
1	\$183,530 and Up	-1.58%	\$39,064 and Up	0.70%	\$6,979 and Up	0.55%	\$218,547 and Up	-0.91%	\$118,454 and Up	0.42%	\$14,966 and Up	0.77%	\$83,836 and Up	0.66%	224,700 and Up	0.32%
2	\$58,770 - \$183,530	-0.17%	\$14,329 - \$39,064	1.38%	\$2,414 - \$6,979	1.31%	\$76,090 - \$218,547	0.17%	\$49,025 - \$118,454	1.13%	\$5,581 - \$14,966	1.45%	\$30,694 - \$83,836	1.41%	87,395 - 224,700	1.17%
3	\$36,102 - \$58,770	0.39%	\$9,398 - \$14,329	1.63%	\$1,520 - \$2,414	1.57%	\$46,827 - \$76,090	0.65%	\$32,779 - \$49,025	1.40%	\$3,721 - \$5,581	1.69%	\$18,880 - \$30,694	1.81%	58,282 - 87,395	1.52%
4	\$25,511 - \$36,102	0.79%	\$6,536 - \$9,398	1.83%	\$1,002 - \$1,520	1.85%	\$33,869 - \$46,827	0.97%	\$22,606 - \$32,779	1.65%	\$2,662 - \$3,721	1.89%	\$14,299 - \$18,880	1.99%	44,136 - 58,282	1.75%
5	\$19,083 - \$25,511	1.08%	\$4,972 - \$6,536	2.02%	\$740 - \$1,002	2.04%	\$25,989 - \$33,869	1.19%	\$16,793 - \$22,606	1.87%	\$1,961 - \$2,662	2.06%	\$11,160 - \$14,299	2.17%	34,651 - 44,136	1.92%
6	\$14,850 - \$19,083	1.39%	\$4,216 - \$4,972	2.12%	\$574 - \$740	2.19%	\$20,124 - \$25,989	1.43%	\$13,244 - \$16,793	2.02%	\$1,512 - \$1,961	2.22%	\$9,136 - \$11,160	2.31%	27,046 - 34,651	2.10%
7	\$12,298 - \$14,850	1.58%	\$3,539 - \$4,216	2.20%	\$457 - \$574	2.32%	\$16,237 - \$20,124	1.62%	\$10,530 - \$13,244	2.18%	\$1,250 - \$1,512	2.34%	\$7,727 - \$9,136	2.43%	21,476 - 27,046	2.29%
8	\$10,226 - \$12,298	1.78%	\$2,887 - \$3,539	2.32%	\$372 - \$457	2.46%	\$13,373 - \$16,237	1.80%	\$8,750 - \$10,530	2.31%	\$1,028 - \$1,250	2.43%	\$6,699 - \$7,727	2.52%	17,789 - 21,476	2.44%
9	\$8,627 - \$10,226	1.96%	\$2,403 - \$2,887	2.42%	\$312 - \$372	2.56%	\$11,285 - \$13,373	1.96%	\$7,383 - \$8,750	2.42%	\$825 - \$1,028	2.56%	\$5,696 - \$6,699	2.61%	15,100 - 17,789	2.57%
10	\$7,351 - \$8,627	2.12%	\$2,055 - \$2,403	2.52%	\$264 - \$312	2.66%	\$9,706 - \$11,285	2.09%	\$6,290 - \$7,383	2.53%	\$697 - \$825	2.67%	\$4,671 - \$5,696	2.73%	13,149 - 15,100	2.68%
11	\$6,241 - \$7,351	2.29%	\$1,799 - \$2,055	2.59%	\$230 - \$264	2.75%	\$8,264 - \$9,706	2.21%	\$5,360 - \$6,290	2.62%	\$619 - \$697	2.74%	\$3,861 - \$4,671	2.87%	11,535 - 13,149	2.77%
12	\$5,361 - \$6,241	2.46%	\$1,588 - \$1,799	2.66%	\$204 - \$230	2.82%	\$6,974 - \$8,264	2.37%	\$4,546 - \$5,360	2.73%	\$543 - \$619	2.88%	\$3,312 - \$3,861	2.97%	10,137 - 11,535	2.87%
13	\$4,586 - \$5,361	2.60%	\$1,400 - \$1,588	2.73%	\$179 - \$204	2.89%	\$6,030 - \$6,974	2.50%	\$3,885 - \$4,546	2.83%	\$466 - \$543	2.89%	\$2,867 - \$3,312	3.07%	8,921 - 10,137	2.96%
14	\$3,853 - \$4,586	2.79%	\$1,230 - \$1,400	2.80%	\$150 - \$179	2.97%	\$5,227 - \$6,030	2.61%	\$3,273 - \$3,885	2.93%	\$404 - \$466	2.97%	\$2,506 - \$2,867	3.16%	7,763 - 8,921	3.06%
15	\$3,319 - \$3,853	2.95%	\$1,069 - \$1,230	2.87%	\$124 - \$150	3.09%	\$4,488 - \$5,227	2.75%	\$2,780 - \$3,273	3.05%	\$357 - \$404	3.04%	\$2,209 - \$2,506	3.24%	6,656 - 7,763	3.16%
16	\$2,915 - \$3,319	3.09%	\$930 - \$1,069	2.95%	\$104 - \$124	3.19%	\$3,887 - \$4,488	2.87%	\$2,423 - \$2,780	3.14%	\$311 - \$357	3.11%	\$1,944 - \$2,209	3.32%	5,574 - 6,656	3.29%
17	\$2,530 - \$2,915	3.22%	\$811 - \$930	3.02%	\$89 - \$104	3.28%	\$3,305 - \$3,887	3.00%	\$2,092 - \$2,423	3.23%	\$266 - \$311	3.20%	\$1,723 - \$1,944	3.41%	4,653 - 5,574	3.42%
18	\$2,120 - \$2,530	3.38%	\$686 - \$811	3.10%	\$74 - \$89	3.37%	\$2,707 - \$3,305	3.16%	\$1,750 - \$2,092	3.33%	\$222 - \$266	3.28%	\$1,526 - \$1,723	3.48%	3,852 - 4,653	3.56%
19	\$1,713 - \$2,120	3.59%	\$574 - \$686	3.20%	\$60 - \$74	3.49%	\$2,178 - \$2,707	3.35%	\$1,441 - \$1,750	3.46%	\$178 - \$222	3.40%	\$1,278 - \$1,526	3.56%	3,145 - 3,852	3.70%
20	\$1,379 - \$1,713	3.82%	\$483 - \$574	3.20%	\$47 - \$60	3.62%	\$1,794 - \$2,178	3.53%	\$1,184 - \$1,441	3.58%	\$142 - \$178	3.52%	\$1,007 - \$1,278	3.71%	2,529 - 3,145	3.86%
21	\$1,112 - \$1,379	4.03%	\$404 - \$483	3.39%	\$36 - \$47	3.77%	\$1,453 - \$1,794	3.68%	\$934 - \$1,184	3.72%	\$112 - \$142	3.65%	\$797 - \$1,007	3.87%	1,986 - 2,529	4.02%
22	\$867 - \$1,112	4.27%	\$331 - \$404	3.49%	\$27 - \$36	3.92%	\$1,118 - \$1,453	3.90%	\$708 - \$934	3.89%	\$80 - \$112	3.79%	\$626 - \$797	4.01%	1,495 - 1,986	4.21%
23	\$633 - \$867	4.54%	\$256 - \$331	3.61%	\$19 - \$27	4.09%	\$807 - \$1,118	4.13%	\$512 - \$708	4.07%	\$65 - \$80	3.92%	\$460 - \$626	4.19%	1,079 - 1,495	4.45%
24	\$334 - \$633	4.94%	\$150 - \$256	3.78%	\$10 - \$19	4.32%	\$416 - \$807	4.48%	\$287 - \$512	4.31%	\$35 - \$65	4.13%	\$247 - \$460	4.42%	595 - 1,079	4.69%
25	Up to \$334	6.15%	Up to \$150	4.31%	Up to \$10	4.90%	Up to \$416	5.54%	Up to \$287	4.94%	Up to \$35	4.75%	Up to \$247	5.17%	Up to 595	5.53%

	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
Proxy Group of Six Water Companies	\$ 4,292	14	\$ 1,409	13	\$ 128	15	\$ 6,360	15	\$ 5,085	12	\$ 371	15	\$ 857	21	\$ 1,475	23
Carolina Water Service, Inc. of North Carolina	\$ 217.49	25	\$ 92.67	25	\$ 1.21	25	\$ 222.99	25	\$ 155.82	25	\$ 9.39	25	\$ 31.10	25	\$ 87	25
Indicated Risk Premium	3.36%		1.58%		1.81%		2.79%		2.21%		1.71%		1.30%		1.08%	

Sources of Information:
Duff & Phelps 2019 Cost of Capital Navigator
SNL Financial
Company Form 10-K

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.	0.0670
American Water Works	0.0776
Aqua America inc.	0.1096
California Water Service Group	0.0743
Middlesex Water	0.0732
SJW Group	0.0307
York Water Company	0.0704
Average	<u><u>0.0718</u></u>

Source of Information:

Value Line Proprietary Database, September 2019

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, 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, tariff
	Hawaii American Water	HI	No			Annual Report
	Illinois American Water	IL	Yes	Volume Balancing Adjustment Rider (VBA); Qualifying Infrastructure Plans (QIP) Surcharge	Full Decoupling (Actual to Target Revenues); Capital Recovery	Annual Report; tariff; Commission Order dated December 13, 2016. Docket No. 16-0093
	Indiana American Water	IN	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report, tariff
	Iowa American Water	IA	No			Annual Report, tariff
	Kentucky American Water	KY	No			Annual Report, tariff
	Maryland American Water	MD	No			Annual Report, tariff
	Michigan American Water	MI	No			Annual Report
	Missouri American Water	MO	No	Infrastructure System Replacement Surcharge	Capital Recovery	Annual Report, tariff
	New Jersey American Water	NJ	No			Annual Report, tariff
	New York American Water	NY	Yes	Revenue And Production Cost Reconciliation Adjustment Clause and Property Tax Clause (RAC/PTC)	Full Decoupling (Actual to Target Revenues)	Annual Report; tariff; Commission Order in Case 07-W-0508 and Case 16-W-0259
	Pennsylvania American Water	PA	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report, tariff
	Tennessee American Water	TN	No			Annual Report, tariff
	Virginia American Water	VA	No	Water & Wastewater Infrastructure Service Charge "WWISC" Rider	Capital Recovery	Annual Report, tariff
	West Virginia American Water	WV	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report, tariff
WTR	Aqua America					
	Aqua Illinois, Inc.	IL	Yes	Volume Balancing Adjustment Rider (VBA)	Full Decoupling (Actual to Target Revenues)	Order in Docket No. 17-0259
	Aqua Indiana, Inc.	IN	No			Annual Report, tariff
	Aqua New Jersey, Inc.	NJ	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report, tariff
	Aqua North Carolina, Inc.	NC	No			Annual Report
	Aqua Ohio, Inc.	OH	No			Annual Report
	Aqua Pennsylvania, Inc.	PA	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report; tariff
	Aqua Texas, Inc.	TX	No			Annual Report
	Aqua Virginia, Inc.	VA	No			Annual Report
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, tariff
	New Mexico Water Service Co.	NM	No			Annual Report, tariff
	Washington Water Service Co.	WA	No			Annual Report, tariff
	Hawaii Water Service Co.	HI	No			Annual Report, tariff
MSEX	Middlesex Water Company					
	Middlesex Water Company (NJ)	NJ	No			Annual Report; tariff
	Southern Shores Water Company (DE)	DE	No			Annual Report
	Tidewater Utilities, Inc. (DE)	DE	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	Annual Report; tariff
	Pinelands Water Company (NJ)	NJ	No			Annual Report; tariff
	Twin Lakes Utilities, Inc. (PA)	PA	No			Annual Report; tariff
SJW	SJW Group					
	San Jose Water Company (CA)	CA	No			
	SJWTX, Inc. dba Canyon Lake Water Service Co. (TX)	TX	No			
	The Connecticut Water Company	CT	Yes	Water Revenue Adjustment (WRA); Water Infrastructure and Conservation Adjustment (WICA)	Full Decoupling (Actual to Target Revenues); Capital Recovery	Annual Report ; tariff
	The Heritage Village Water Company	CT	Yes	Water Revenue Adjustment (WRA); Water Infrastructure and Conservation Adjustment (WICA)	Full Decoupling (Actual to Target Revenues); Capital Recovery	Annual Report ; tariff
	The Avon Water Company	CT	Yes	Water Revenue Adjustment (WRA); Water Infrastructure and Conservation Adjustment (WICA)	Full Decoupling (Actual to Target Revenues); Capital Recovery	Annual Report ; tariff
	The Maine Water Company	ME	No	Water Infrastructure Charge (WISC)	Capital Recovery	Annual Report ; tariff
YORW	York Water Company	PA	No	Distribution System Improvement Charge (DSIC)	Capital Recovery	

Mr. D'Ascendis Return on Equity Recommendations and Authorized Returns on Equity 2015 through 2019 Year-to-Date

Company Name	Case Number	State	D'Ascendis Percent Recommended ROE	Date Authorized	Percent Authorized ROE	Basis Points D'Ascendis Below Authorized ROE
Middlesex Water Company	WR15030391	NJ	10.40	7/27/2015	9.75 ⁽¹⁾	65
Utility Services of Illinois, Inc.	14-0741	IL	N/A	9/22/2015	N/A ⁽¹⁾	
Carolina Water Service, Inc.	2015-199-WS	SC	10.00-10.50	12/22/2015	9.34 ⁽¹⁾	91
Aqua Indiana, Inc. Aboite Wastewater Division	44752	IN	10.15-10.70	8/4/2016	9.70 ⁽¹⁾	72
Aqua Ohio, Inc.	16-0907-WW-AIR	OH	10.25-10.65	2/14/2017	9.87 ⁽¹⁾	58
Raccoon Creek Utility Operating Company, Inc.	SR-2016-0202	MO	15.75	10/17/2016	12.15 ⁽¹⁾	360
Aqua Illinois, Inc.	17-0259	IL	10.85	3/2/2018	9.60 ⁽¹⁾	125
Aqua Virginia, Inc.	PUR-2017-00082	VA	10.60	10/19/2018	9.25 ⁽¹⁾	135
Columbia Water Company	R-2017-2598203	PA	11.30	3/1/2018	N/A ⁽¹⁾	
Middlesex Water Company	WR17101049	NJ	10.70	3/6/2018	9.60 ⁽¹⁾	110
Indian Hills Utility Operating Company, Inc.	WR-2017-0259	MO	15.20	11/21/2017	12.00 ⁽¹⁾	220
Kaupulehu Water Company	2016-0363	HI	11.60	Ongoing		
Carolina Water Service, Inc.	2017-292-WS	SC	10.45-10.95	5/26/2018	10.50	20
Colorado Natural Gas Company	18AL-305G	CO	11.75-11.90	10/10/2018	10.30 ⁽¹⁾	152
SUEZ Water Pennsylvania, Inc.	R-2018-3000834	PA	10.40-11.50	10/10/2028	N/A ⁽¹⁾	N/A
Aqua North Carolina, Inc.	W-218, Sub 497	NC	10.80	12/18/2018	9.70	110
Arizona Water Company - Northern Group	W-01445A-18-0164	AZ	10.80-11.35	8/19/2019	9.33	174
Carolina Water Service, Inc. of North Carolina	W-354, Sub 360	NC	10.80-11.20	2/21/2019	9.75	125
Aqua New Jersey, Inc.	WR18121351	NJ	10.45	5/8/2019	9.60 ⁽¹⁾	85
Carolina Water Service, Inc. of North Carolina	W-354, Sub 364	NC	10.75	Ongoing		

Average Authorized ROE Basis Points below Mr. D'Ascendis Recommended ROE = 127 basis points

N/A: Not Applicable

⁽¹⁾ Result is a product of a settlement/stipulation.

Source: CWSNC Response to Public Staff Data Request 14.2

Note: Where Mr. D'Ascendis recommended a range for ROE, the midpoint of the range used for calculations.

D'Ascendis Proxy Companies
Approved ROEs – Last Three Years

<u>Company</u>	<u>Decision Date</u>	<u>Approved ROE</u>
Illinois American Water Co.	12-13-16	9.80%
Iowa American Water Co.	2-27-17	9.60%
New York American Water Co.	5-18-17	9.10%
Virginia American Water Co.	5-24-17	9.30%
California American Water Co.	3-22-18	9.20%
California Water Service Co.	3-22-18	9.20%
Golden State Water Co.	3-22-18	8.90%
New Jersey American Water Co.	10-29-18	9.60%
West Virginia American Water Co.	2-8-19	9.75%
Kentucky American Water Co.	6-27-19	9.70%
3 Year Average	=	9.42%

Docket No. W-354 Sub 364

Public Staff N'Ascundis
Cross Exam Exhibit 2

I/A

COMMISSION APPROVED COMMON EQUITY RATIOS & ROEs

State	Utility	Docket No.	Order date	Equity Ratio	Return on Equity
IA	Iowa American Water Co.	RPU-2013-0002	2/28/14	52.57%	9.41%
NC	Carolina Water Service of NC	W-354, Sub 336	3/10/14	50.27%	9.75%
NC	Aqua North Carolina	W-218, Sub 363	5/2/14	50.00%	9.75%
HI	Waikoloa Utilities	2011-0331	5/23/14	50.00%	9.89%
NJ	Middlesex Water Co.	WR-13111059	6/18/14	50.71%	9.75%
NY	SUEZ Water New York Inc.	13-W-0295	6/24/14	44.00%	9.20%
NY	SUEZ Water Westchester	13-W-0564	6/24/14	47.00%	9.20%
DE	Tidewater Utilities, Inc.	13-466	8/19/14	50.96%	9.75%
NJ	Aqua New Jersey	WR-14010019	8/20/14	52.47%	9.75%
OH	Aqua Ohio Water Co.	13-2124-WW-AIR	9/10/14	51.60%	9.80%
NY	SUEZ Water New Rochelle, Inc.	13-W-0539	11/14/14	47.00%	9.20%
Average				49.69%	9.59%
HI	Waikoloa Water	2012-0148	2/19/15	50.00%	9.89%
ME	Maine Water	2014-00349	3/11/15	48.50%	9.50%
IL	Aqua Illinois	14-0419	3/25/15	53.26%	9.81%
HI	Kona Water Service	2013-0375	6/29/15	53.00%	10.10%
NJ	SUEZ Toms River	WR-15020269	8/19/15	53.00%	9.75%
NJ	Middlesex Water Co.	WR-15030391	8/19/15	51.36%	9.75%
NJ	New Jersey American Water Co.	WR-15010035	9/11/15	52.00%	9.75%
NC	Carolina Water Service of NC	W-354, Sub 344	12/7/15	51.00%	9.75%
Average				51.52%	9.79%
VA	Aqua Virginia, Inc.	PUE-2014-00045	1/7/16	49.20%	9.25%
DE	Artesian Water	14-132	1/19/16	50.54%	9.75%
NV	Utilities, Inc. of Central Nevada	15-06063	1/25/16	49.45%	9.50%
WV	West Virginia American Water Co.	15-0676-W-42T	2/24/16	45.84%	9.75%
NC	CWS Systems, Inc.	W-778 Sub 91	2/24/16	51.00%	9.75%
NJ	SUEZ New Jersey Inc.	WR-15101177	4/27/16	53.00%	9.75%
NJ	Aqua New Jersey	WR16010089	8/9/16	52.86%	9.75%
HI	Hawaii Water Service	2015-0230	9/12/16	53.00%	10.1%
IL	Illinois American Water Co.	16-0093	12/13/16	49.80%	9.79%
Average				50.52%	9.71%
NY	SUEZ Water New York	C-16-W-0130	1/27/17	46.00%	9.0%
IA	Iowa American Water	D-RPU-2016-0002	2/27/17	52.04%	9.6%
NY	New York American Water Co.	C-16-W-0259	5/18/17	46.00%	9.1%
VA	Virginia-American Water	C-PUE-2015-00097	5/24/17	46.09%	9.3%
NC	Carolina Water Service, Inc. of NC	W-354 Sub 356	11/8/17	52.00%	9.6%
Average				48.43%	9.31%
IL	Aqua Illinois	D-17-0259	3/7/18	53.22%	9.60%
CA	California American Water Co.	A17-04-003	3/22/18	55.39%	9.20%
CA	California Water Service Co.	A17-04-006	3/22/18	53.40%	9.20%
CA	Golden State Water Co.	A17-04-002	3/22/18	57.00%	8.90%
CA	San Jose Water Co.	A17-04-001	3/22/18	53.28%	8.90%
NJ	Middlesex Water Co.	D-WR-17-101049	3/24/18	52.75%	9.60%
SC	Carolina Water Service, Inc.	D-2017-292-WS	5/2/18	51.89%	10.50%
NY	SUEZ Water Owego-Nicols Inc.	C-17-W-0528	7/13/18	46.00%	8.90%
IL	Utility Services of IL, Inc. Water	D-17-1106	9/24/18	52.15%	9.23%
IL	Utility Services of IL, Inc. Water/Water	D-17-1106	9/24/18	52.15%	9.31%
RI	Suez Water Rhode Island	D-R-4800	10/5/18	53.91%	9.40%
NJ	New Jersey American Water	D-WR-17-090985	10/29/18	54.00%	9.60%
MD	Aquarion Water Co. of Mass.	D.P.U. 17-90	10/31/18	47.04%	10.50%
NJ	SUEZ Water New Jersey	D-WR-18050593	11/19/18	54.00%	9.60%
NC	Aqua North Carolina	D-W-218, Sub 497	12/18/18	50.00%	9.70%
CA	Suburban Water Systems	A-18-05-004	12/20/18	60.00%	9.25%
VA	Massanutten Public Service Corp.	C-PUR-2017-00069	12/21/18	52.19%	9.25%
Average				52.85%	9.45%
HI	Hawaii Water Service	D-2017-0350	1/7/19	53.40%	9.20%
MD	Maryland American Water	C-9487	2/5/19	48.66%	NA
WV	West Virginia American Water Co.	C-18-0573-W-42T	2/8/19	49.79%	9.75%
NC	Carolina Water Service of NC	D-W-354, Sub 360	2/21/19	50.91%	9.75%
NJ	Aqua New Jersey	WR-18121351	5/28/19	53.00%	9.60%
KY	Kentucky American Water Co.	2018-00358	6/27/19	48.76%	9.70%
Average				50.75%	9.60%
Average of Annual Averages				50.81%	9.57%
Average Across Years				51.04%	9.57%

Three Year

Source: RRA

Average of 30 ROE decisions 7-1-2016 through 6-30-19 = 9.50%

Docket No. W-354 Sub 364

Public Staff D'Ascendis
Cross Exam Exhibit 3

Page 1 of 2
I/A

CWSNC

Counties in which Water and Sewer service is provided:

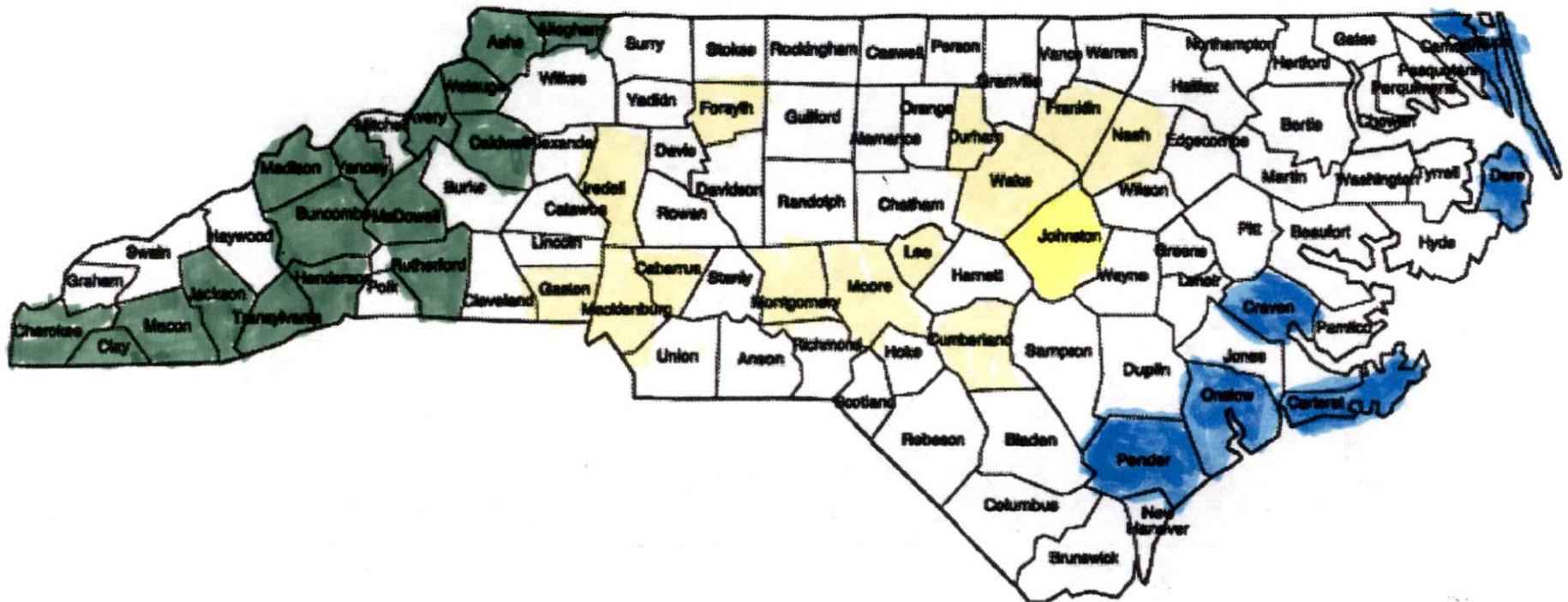
<u>County</u>	<u>Water</u>	<u>Sewer</u>
Alleghany	W	
Ashe	W	
Avery	W	S
Buncombe	W	S
Cabarrus	W	
Caldwell	W	
Carteret	W	S
Cherokee	W	S
Clay	W	S
Craven	W	S
Cumberland	W	
Currituck		S
Dare		S
Durham	W	
Forsyth	W	S
Franklin	W	
Gaston	W	S
Henderson	W	
Iredell	W	S
Jackson	W	S
Johnston	W	S
Lee	W	S
Macon	W	
Madison	W	S
McDowell	W	
Mecklenburg	W	S
Montgomery	W	
Moore	W	
Nash	W	
New Hanover	W	
Onslow		S
Pender	W	S
Rutherford	W	S
Transylvania	W	S
Union	W	S
Wake	W	S
Watauga	W	S
Yancey	W	S

Source: CWSNC W-1

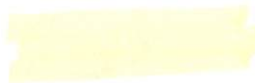
Docket No. W-354 Sub 364

Public Staff D'Ascendis
Cross Examination Exhibit
Page 2 of 2

Counties Served by CWSNC



Mountain Counties



Piedmont Counties



Coastal Counties

Public Staff D'Ascendis
Cross Examination Exhibit 4
Docket No. W-354, Sub 364

I/A

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

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2018 (millions)	[2] Book Value per Share at Fiscal Year End 2018 (1)	[3] Total Common Equity at Fiscal Year End 2018 (millions)	[4] Closing Stock Market Price on April 30, 2019	[5] Market-to- Book Ratio on April 30, 2019 (2)	[6] Market Capitalization on April 30, 2019 (3) (millions)
Carolina Water Service, Inc. of North Carolina		NA	NA	280,237 (7)	NA		
Based upon Proxy Group of Six Water Companies						347.3 (5)	\$ 973,260 217,481 (6)
Proxy Group of Six Water Companies							
American States Water Co.	NYSE	36.758	\$ 15.187	\$ 558.223	\$ 71.170	468.6 %	\$ 2,616.056
American Water Works Company Inc	NYSE	180.684	32.454	5,864.000	108.190	333.4	19,548.202
Artesian Resources Corporation	NYSE	9.250	16.568	153.251	36.280	219.0	335,590
California Water Service Group	NYSE	48.065	15.191	730.157	50.390	331.7	2,421.981
Middlesex Water Co.	NYSE	16.403	15.167	248.787	57.990	382.3	951.210
York Water Co.	NYSE	12.944	9.750	126.195	34.030	349.0	440.469
Average		50.684	\$ 17.386	\$ 1,280.102	\$ 59.675	347.3 %	\$ 4,385.585

NA= Not Available

Notes: (1) Column 3 / Column 1.

(2) Column 4 / Column 2.

(3) Column 1 * Column 4.

(4) Requested rate base multiplied by requested equity ratio.

(5) The market-to-book ratio of Carolina Water Service, Inc. of North Carolina on April 30, 2019 is assumed to be equal to the market-to-book ratio of Proxy Group of Six Water Companies on April 30, 2019 as appropriate.

(6) Column [3] multiplied by Column [5].

(7) Utilities, Inc. Common Equity April 30, 2019

Source of Information: 2018 Annual Forms 10K
yahoo.finance.com

Public Staff

Data Request 14.10

D'Ascendis Exhibit No. 1
Schedule DWD-8
Page 2 of 2

I/A

Growth Group D'Ascendis Proxy Group Companies
Group in Dividends and Stock Market Prices
April 15, 2011 to November 29, 2019

	<u>Annual Dividend Amount</u>	<u>Percent Increase Dividend Amount</u>	<u>Dividend Percent</u>	<u>Market Price Per Share</u>	<u>Percent Increase Stock Price</u>
<u>American States Water</u>					
29 Nov 2019	\$1.22		1.43%	\$85.29	
15 April 2011	<u>.54</u>		3.05%	<u>17.84</u>	
Increase	\$.68	126%		\$67.45	378%
<u>American Water Works</u>					
29 Nov 2019	\$2.00		1.65%	\$121.03	
15 April 2011	<u>.88</u>		3.22%	<u>23.30</u>	
Increase	\$1.12	127%		\$ 97.73	419%
<u>Artesian Resource Group</u>					
29 Nov 2019	\$1.00		2.68%	\$37.20	
15 Apr 2011	<u>.76</u>		3.90%	<u>19.49</u>	
Increase	\$.24	32%		\$17.71	91%

	<u>Annual Dividend Amount</u>	<u>Percent Increase Dividend Amount</u>	<u>Dividend Percent</u>	<u>Market Price Per Share</u>	<u>Percent Increase Stock Price</u>
<u>California Water Service</u>					
29 Nov 2019	\$.79		1.54%	\$51.40	
15 April 2011	<u>.62</u>		3.29%	<u>18.83</u>	
Increase	\$.17	27%		\$32.57	173%
<u>Middlesex Water Company</u>					
29 Nov 2019	\$1.02		1.65%	\$62.81	
15 April 2011	<u>.79</u>		4.03%	<u>18.32</u>	
Increase	\$.23	29%		\$44.49	243%
<u>York Water Co</u>					
29 Nov 2019	\$.72		1.63%	\$44.33	
15 Apr 2011	<u>.53</u>		3.12%	<u>16.88</u>	
Increase	\$.19	36%		\$27.45	163%
Six Company Average		59%			245%

Source: Dividend Percent is April 2011 – Direct Testimony Pauline Ahern, W-218, Sub 319, Aqua North Carolina Inc Schedule PMA-6

Source: Remaining information CNBC and individual company websites

I/A

**Increases of Market Prices – California Water Companies
California Public Utilities Commission
Order Dated March 22, 2019 to November 29, 2019**

<u>Company</u>	<u>Approved ROE</u>
California 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>	<u>November 29, 2019</u>	<u>Percent Increase March 22, 2018 to November 29, 2019</u>
American Water Works (AWK)	\$80.15	\$79.87	\$88.00	\$121.03	51.0%
American States Water (AWR)	\$54.45	\$52.86	\$59.01	\$85.29	56.6%
California Water Service (CWT)	\$37.70	\$36.90	\$40.47	\$51.40	36.3%
San Jose Water (SJW)	\$53.21	\$52.69	\$58.25	\$70.82	33.1%

- (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) San Jose Water in early October 2019 completed a merger with Connecticut Water.
(4) Source: MSN Money

I/A

Basis Point Decrease
in 30 Year Treasury Bond Yields
and A-Rated Public Utility Yields
CWSNC Sub 360 to Sub 364

(a) Date	(b) Yield	(c) Date	(d) Yield	(d) minus (b) (e) Basis Points Decrease
Sept 2019 A-Rated Public Utility Bonds Actual Yields	3.37% ⁽¹⁾	Sept 2018 A-Rated Public Utility Bonds	4.32% ⁽⁴⁾	(95)
Risk Free 30 Yr T-Bond Projected	2.64% ⁽²⁾	⁽²⁾ Risk Free 30 Yr T-Bond Projected Sept 2018	3.74% ⁽⁵⁾	(110)
30-Yr Treasury Bond November 29, 2019 Actual Yield	2.19% ⁽³⁾	⁽³⁾ October 16, 2018	3.32% ⁽³⁾	(113)

- (1) D'Ascendis Rebuttal Exhibit No. 1 Schedule DWD-1R, page 13 of 31, Docket No. W-354, Sub 364
- (2) D'Ascendis Rebuttal Exhibit No. 1 Schedule DWD-1R, page 22 of 31, Docket No. W-354, Sub 364
- (3) U.S. Department of Treasury Resource Center, Daily Treasury Yield Curve Rates
- (4) D'Ascendis Rebuttal Testimony, page 6, line 1, Docket No. W-354, Sub 360
- (5) D'Ascendis Rebuttal Exhibit 1, 7, Schedule DWD-1R, page 11 of 31, column 6, and page 22 of 31, footnote 2

Public Staff N'Ascund.

Cross Exam
Exhibit 8

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-2, SUB 1131
DOCKET NO. E-2, SUB 1142
DOCKET NO. E-2, SUB 1103
DOCKET NO. E-2, SUB 1153

DEP I/A

Rate
Order
28 Feb 2018

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1131

In the Matter of
Application by Duke Energy Progress, LLC,
for Accounting Order to Defer Incremental
Storm Damage Expenses

DOCKET NO. E-2, SUB 1142

In the Matter of
Application by Duke Energy Progress, LLC,
For Adjustment of Rates and Charges
Applicable to Electric Utility Service in North
Carolina

DOCKET NO. E-2, SUB 1103

In the Matter of
Joint Application by Duke Energy Progress,
LLC, and Duke Energy Carolinas, LLC, for
Accounting Order to Defer Environmental
Compliance Costs

DOCKET NO. E-2, SUB 1153

In the Matter of
Petition of Duke Energy Progress, LLC, for an
Order Approving a Job Retention Rider

ORDER ACCEPTING
STIPULATION, DECIDING
CONTESTED ISSUES AND
GRANTING PARTIAL RATE
INCREASE

HEARD: Tuesday, September 12, 2017, at 7:00 p.m., Richmond County Courthouse,
Courtroom A, 105 W. Franklin Street, Rockingham, North Carolina

Commission approved rate of return on equity for a vertically integrated electric company for the period of 2014 through the hearing in 2017 was 9.2%. Witness Parcell's specific DCF result was 8.85%, witness Polich's was 8.48%, and the mid-point of witness O'Donnell's was 8.25%. The average of Hevert's constant growth DCF means was 8.92%, and the mid-point of the range of witness Hevert's Multi-Stage DCF analysis was 9.0%. The Commission considers all of these DCF results to be outliers, being well below the lowest vertically-integrated rate of return on equity of 9.2%. The Commission determines that all of these DCF analyses in the current market produce unrealistic low results.

The Commission gives no weight to any of the witnesses' CAPM analyses. The analyses of witness Parcell with a mid-point of 6.4% is unrealistically low, and witness Parcell agreed as much in his testimony. The CAPM analysis of witness O'Donnell resulted in a CAPM rate of return on equity mid-point of 6.05%, which is an outlier well below the 9.2% previously discussed. Witness Polich's CAPM weighted median rate of return on equity of 7.56% is also an outlier and unrealistically low. DEP Witness Hevert's CAPM range of 9.15% to 11.49% is also an outlier and upwardly biased due to his use of the near-term projected 30-year Treasury interest rate of 3.52%, which witness Parcell testified greatly exceeds the current level of long-term Treasury of about 2.8%. Witness Hevert's risk premium component of this CAPM uses a constant growth DCF for the S&P 500 companies using analysts projected earnings per share forecasts as the growth component. Witness Hevert's DCF dividend growth, component based solely on analysts' earnings per share growth projections, without consideration of any historical results, is upwardly biased and unreliable.

The rate of return on equity testimonies of Commercial Group witnesses Chriss and Rosa focused on the commission-approved rates of return on equity authorized for vertically-integrated electric utilities in 2014, 2015, 2016, and year-to-date 2017 listed in Commercial Group Exhibit CR-3. The Commission gives weight to this testimony only as a check on the Commission's approved 9.9% rate of return on equity and to evaluate outlier rate of return on equity recommendations. CIGFUR witness Phillips' testimony focused on the RRA report Major Rate Case Decisions. The 9.61% average authorized rate of return on equity for electric utilities included both vertically-integrated electric utilities and distribution-only electric utilities. Since DEP is a vertically-integrated electric utility, the Commission gives witness Phillips' rate of return on equity testimony limited weight regarding authorized rates of return on equity for distribution-only electric utilities. Rather, as noted above, recently authorized rates of return on equity for vertically-integrated electric utilities since 2014 average 9.85%, and in jurisdictions with constructive regulatory environments average 10.03%, and serve as a better check.

The 9.9% rate of return on equity approved in this proceeding for DEP is also consistent with the 9.9% rate of return on equity the Commission approved for DNCP in the Order dated December 22, 2016, in Docket No. E-22, Sub 532.

The Commission notes further that its approval of a rate of return on equity at the level of 9.9% – or for that matter, at any level – is not a guarantee to the Company that it will earn a rate of return on equity at that level. Rather, as North Carolina law requires, setting the rate of return on equity at this level merely affords DEP the opportunity to

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1146
DOCKET NO. E-7, SUB 819
DOCKET NO. E-7, SUB 1152
DOCKET NO. E-7, SUB 1110

DOCKET NO. E-7, SUB 1146

In the Matter of
Application of Duke Energy Carolinas, LLC,
for Adjustment of Rates and Charges
Applicable to Electric Utility Service in North
Carolina

DOCKET NO. E-7, SUB 819

In the Matter of
Amended Application by Duke Energy
Carolinas, LLC, for Approval of Decision to
Incur Nuclear Generation Project
Development Costs

DOCKET NO. E-2, SUB 1152

In the Matter of
Petition of Duke Energy Carolinas, LLC, for
an Order Approving a Job Retention Rider

DOCKET NO. E-7, SUB 1110

In the Matter of
Joint Application by Duke Energy Progress,
LLC, and Duke Energy Carolinas, LLC, for
Accounting Order to Defer Environmental
Compliance Costs

*DEC
Rate Order
22 June 2018*

ORDER ACCEPTING STIPULATION,
DECIDING CONTESTED ISSUES,
AND REQUIRING REVENUE
REDUCTION

HEARD: Tuesday, January 16, 2018, at 7:00 p.m., in the Macon County Courthouse,
Courtroom A, 5 W. Main Street, Franklin, North Carolina

Wednesday, January 24, 2018, at 7:00 p.m., in the Guilford County
Courthouse, Courtroom 1C, 201 S. Eugene Street, Greensboro, North
Carolina

E-7, Sub 1146

In its post-hearing brief, Tech Customers state that while the Stipulation is material evidence entitled to appropriate weight in determining DEC's rate of return on equity and other rate of return inputs, the return approved by the Commission must be justified by substantial, competent evidence in the record as a whole. Tech Customers acknowledge that the 9.9% rate of return agreed to in the Stipulation is comfortably within the range advocated by the parties to the Stipulation, but argues that the Stipulation, standing alone, cannot support the 9.9% recommended return on equity, particularly when the rate at one side of the range lacks any indicia of a rational basis.

Tech Customers state that a utility advocating a rate of return on equity figure that substantially exceeds the output of widely-recognized empirical models and that exceeds recently authorized returns must justify that proposed upward adjustment with a quantitative analysis that shows the applicants risk profile to be materially higher than that of the proxy group. Tech Customers state that its witness Strunk outlined several empirical measures of risk in his testimony and the associated exhibits and none suggests DEC presents a higher risk profile than the proxy group companies. Given the results of the empirical models and the lack of objective evidence by DEC that it presents a higher risk profile than the proxy group warranting an upward departure from these measures, a rate of return on equity of 9.9% is unreasonably high. Accordingly, Tech Customers contend that the evidence presented concerning other authorized rates of return on equity, when put into proper context, lends substantial support to an authorized rate of return on equity of 9.70%.

The Commission has carefully evaluated the DCF analysis recommendations of witnesses Parcell, Hevert, Woolridge, Strunk, and O'Donnell, and the Commission gives limited weight to these analyses. As shown on Commercial Group's Exhibit CR-3, the lowest Commission-approved rate of return on equity for a vertically-integrated electric company for the period of 2015 through 2017 was 9.1%. Witness Parcell's specific DCF result was 8.7%, as stated in AGO witness Woolridge's Supplemental Exhibit JRW-2, p.1, his DCF recommendation was 8.80%, and the mid-point of witness O'Donnell's DCF was 8.5%. The average of Hevert's constant growth DCF means, as stated in Table 11 of his rebuttal testimony, was 8.45%, and the mid-point of the range of witness Hevert's Multi-Stage DCF analysis was 8.78%. The Commission considers all of these DCF results to be outliers, being well below the lowest vertically-integrated authorized rate of return on equity of 9.1%. The Commission determines that all of these DCF analyses in the current market produce unrealistically low results.

The Commission gives no weight to any of the witnesses' CAPM analyses. The analyses of witness Parcell with a mid-point of 6.5% is unrealistically low, and witness Parcell agreed as much in his testimony. The CAPM analysis of witness O'Donnell resulted in a CAPM rate of return on equity mid-point of 6.29%, which is an outlier well below the 9.1% previously discussed. Witness Woolridge's CAPM weighted median rate of return on equity of 7.90% is also an outlier and unrealistically low. DEC Witness Hevert's CAPM range of 9.18% to 11.88% is also an outlier and upwardly biased due to witness Hevert's risk premium component of his CAPM using a constant growth DCF for

the S&P 500 companies solely using analysts projected EPS forecasts as the growth component. Witness Hevert's DCF dividend growth, component based solely on analysts' EPS growth projections, without consideration of any historical results, is upwardly biased and unreliable.

The rate of return on equity testimonies of Commercial Group witnesses Chriss and Rosa focused on the commission-approved rates of return on equity authorized for vertically-integrated electric utilities in 2015, 2016, and 2017 listed in Commercial Group Exhibit CR-3. The Commission gives weight to this testimony only as a check on the Commission's approved 9.9% rate of return on equity and to evaluate outlier rate of return on equity recommendations. CIGFUR III witness Phillips' testimony focused on the RRA report Major Rate Case Decisions, which showed a 9.61% average authorized rate of return on equity for electric utilities including both vertically-integrated electric utilities and distribution-only electric utilities. Since DEC is a vertically-integrated electric utility, the Commission gives witness Phillips' rate of return on equity testimony limited weight regarding authorized rates of return on equity for distribution-only electric utilities. Rather, as stated in Commercial Group Exhibit CR-3, recently authorized rates of return on equity for vertically-integrated electric utilities since 2015 average 9.78%, and in jurisdictions with RRA rated Average 1 constructive regulatory environments, being the same A1 rating as North Carolina, as shown in Hevert Exhibit RBH-R27 for the 16 decisions for vertically integrated electric utilities in the years 2015, 2016, and 2017, the average approved rate of return on equity was 9.93%. These two vertically-integrated electric utilities averages serve as a better check.

The 9.9% rate of return on equity approved in this proceeding for DEC is also consistent with the 9.9% rate of return on equity that the Commission approved for DNCP in the 2016 Rate Order and DEP in the 2018 Rate Order.

The Commission notes further that its approval of a rate of return on equity at the level of 9.9% – or for that matter, at any level – is not a guarantee to the Company that it will earn a rate of return on equity at that level. Rather, as North Carolina law requires, setting the rate of return on equity at this level merely affords DEC the opportunity to achieve such a return. The Commission finds and concludes, based upon all the evidence presented, that the rate of return on equity provided for herein will indeed afford the Company the opportunity to earn a reasonable and sufficient return for its shareholders, while at the same time producing rates that are just and reasonable to its customers.

Capital Structure

DEC originally proposed using a capital structure of 53% members' equity and 47% long-term debt. Tr. Vol. 4, p. 43. The Stipulation provides for a capital structure of 52% equity and 48% long-term debt. For the reasons set forth herein, the Commission finds that a 52/48 capital structure as set out in the Stipulation is just and reasonable.

Witness De May testified that the Company's specific debt/equity ratio will vary over time, depending on the timing and size of debt issuances, seasonality of earnings,

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. G-9, SUB 743

Order dated

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

October 31, 2019

In the Matter of

Application of Piedmont Natural Gas)	ORDER APPROVING STIPULATION,
Company, Inc., for an Adjustment of Rates,)	GRANTING PARTIAL RATE
Charges, and Tariffs Applicable to Service)	INCREASE, LINE 434 REVENUE
in North Carolina, Continuation of its IMR)	RIDER, EDIT RIDERS, PROVISIONAL
Mechanism, Adoption of an EDIT Rider,)	REVENUES RIDER, AND REQUIRING
and Other Relief)	CUSTOMER NOTICE

HEARD: Tuesday, July 9, 2019, in High Point Courthouse, Courtroom 434, 505 East Green Drive, High Point, North Carolina

Wednesday, July 10, 2019, in Mecklenburg County Courthouse, Courtroom 5350, 832 East 4th Street, Charlotte, North Carolina

Wednesday, July 17, 2019, in New Hanover County Courthouse, Courtroom 317, 316 Princess Street, Wilmington, North Carolina

Monday, August 19, 2019, in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

BEFORE: Commissioner ToNola D. Brown-Bland, Presiding; Chair Charlotte A. Mitchell, Commissioner Lyons Gray, and Commissioner Daniel G. Clodfelter

APPEARANCES:

For Piedmont Natural Gas Company, Inc.:

James H. Jeffries, IV, McGuireWoods LLP, 201 North Tryon Street, Suite 3000, Charlotte, North Carolina 28202, and Brian S. Heslin, Duke Energy Corporation, 550 South Tryon Street, Charlotte, North Carolina 28202

For Carolina Industrial Group for Fair Utility Rates IV:

Warren K. Hicks, Bailey & Dixon, LLP, Post Office Box 1351, Raleigh, North Carolina 27602

G-9 Sub 743

equity recommendations of the witnesses span a range from 8.70% on the low end to 10.60% on the high end.

The Commission finds the risk premium regression analysis and comparable earnings analysis of Public Staff witness Hinton, the discounted cash flow, two of the CAPM analyses, and the bond yield plus risk premium analyses of Piedmont witness Hevert, the comparable earnings analysis of CUCA witness O'Donnell, and the Stipulation are credible, probative, and entitled to substantial weight.

Public Staff witness Hinton conducted an equity risk premium regression analysis analyzing the relationship between approved returns on equity for natural gas utilities and Moody's Bond Yields for A rated utility bonds. He testified that the differential between the two rates of return is indicative of the return investors require in order to compensate for the additional risk. The results of this regression analysis are shown on Hinton Exhibit JRH-5, and produce a cost of equity of 9.64%, only six basis points below the Commission's approved 9.70% rate of return on equity. Witness Hinton's comparable earnings analysis used as a check on his overall rate of return on equity recommendation reviewed the earned returns on equity for his proxy group of comparable natural gas utilities, and produced a range of 9.00% to 10.00%. The Commission finds that witness Hinton's risk premium regression analysis and his comparable earning analysis are credible, probative, and entitled to substantial weight.

Piedmont witness Hevert in his rebuttal testimony updated his constant growth discounted cash flow analyses. His updated analyses rate of return on equity results are shown on Hevert Exhibit RBH-R-1, pages 1, 2, and 3: 30-day dividend yield mean 9.77%, median 9.68%; 90-day dividend yield mean 9.82%, median 9.75%; and 180-day dividend yield mean 9.90%, median 9.83%. Although the Commission, as stated in previous Commission general rate case orders, does not approve of witness Hevert's sole use of analysts' predicted earnings per share to determine the DCF growth rate, the Commission finds witness Hevert's constant growth DCF analyses mean and median rate of return on equity results credible, probative, and entitled to substantial weight.

Witness Hevert's updated CAPM analysis for his Proxy Group Average Bloomberg Beta Coefficient, as shown on Hevert Rebuttal Exhibit RBH-R-5, page 1, includes updated current 30-year treasury rates to calculate the risk free rate of 2.63% producing what witness Hevert describes as a Bloomberg Market DCF Derived rate of return on equity of 9.68% and a Value Line Market DCF Derived of 9.62%. The Commission approves of the use of current risk-free rates rather than predicted near-term or long-term rates. The Commission finds the above-described CAPM analyses credible, probative, and entitled to substantial weight.

In his rebuttal testimony, Piedmont witness Hevert updated his Bond Yield Plus Risk Premium, as shown on Exhibit RBH-R-12, using the current 30-year Treasury yield of 2.63% and applied it to both the approved rates of return on equity for natural gas utilities in fully litigated cases, resulting in a rate of return on equity of 9.99%, and to settled cases, resulting in a rate of return on equity of 9.72%. As previously stated, the

Commission approves the use of current interest rates, rather than projected near-term or long-term interest rates. The Commission finds witness Hevert's updated Bond Yield Plus Risk Premium analysis using the current 30-year Treasury yield to be credible, probative, and entitled to substantial weight.

The Commission also concludes that the comparable earnings analysis by CUCA witness O'Donnell is credible, probative, and entitled to substantial weight. Witness O'Donnell testified that the comparable earnings for his and witness Hevert's proxy group of natural gas utilities produced earned returns of 9.00% to 10.00% over the period 2017 through 2024 balancing historical and forecasted returns. The Commission-approved 9.70% rate of return on equity is well within that range.

The Commission has carefully evaluated the DCF analyses recommendations of witnesses Hinton, Woolridge, O'Donnell, and Hevert. As shown on Hevert settlement testimony Exhibit RBH-S-1, during 2017, 2018, and 2019, there were 69 natural gas utility decisions by public service commissions resulting in a mean approved 9.64% rate of return on equity. The mean year-to-date 2019 rate of return on equity is 9.63%, and the median rate of return on equity is 9.70%.

As shown on Hevert Exhibit RBH-S-1, during this period there were only two public service commission decisions approving a rate of return on equity below 9.00% for a natural gas utility, both by the New York Public Service Commission (8.70% in April 2017 and 8.80% in June 2018). Public Staff witness Hinton's DCF results were 9.00%, 9.25%, and 8.63% with an average of 8.96%. AGO witness Woolridge's DCF analysis produced a rate of return on equity of 8.70%, adjusted upward for a specific rate of return on equity recommendation of 9.00% with a 50.00% common equity capital structure component. CUCA witness O'Donnell's DCF range was 7.60% to 9.60%. The Commission has historically evaluated DCF analyses in determining rates of return on equity in general rate cases. However, the DCF analyses by the three witnesses described above are outliers and each is substantially below the mean allowed rate of return on equity of 9.64% in 2017 through year-to-date 2019.

The Commission concludes that witness Hevert's DCF high rate of return on equity analyses are also outliers and entitled to no weight. As shown on Hevert Rebuttal Exhibit RBH-R-1, witness Hevert's high rate of return on equity mean range runs from 13.82% to 13.95%. The lowest of his three high rate of return on equity means is 13.82%. As shown on Hevert Exhibit RBH-S-1, the 13.82% is 418 basis points above the average of the 69 rate of return on equity decisions during this 2017 to 2019 period.

The Commission concludes that witness Hevert's remaining CAPM analyses are all outliers, and the Commission gives them no weight. As shown on RBH-R-5, page 1, the Proxy Group Average Bloomberg Beta Coefficient ECAPM results in a range of 10.98% to 12.05%. The Proxy Group Average Value Line Average Beta Coefficient CAPM results in a range of 10.90% to 11.97%, and the ECAPM results in a range of 11.82% to 12.96%.

STATE CORPORATION COMMISSION

AT RICHMOND, NOVEMBER 29, 2017

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APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

CASE NO. PUR-2017-00038

For the determination of the fair
rate of return on common equity to be
applied to its rate adjustment clauses

FINAL ORDER

On March 31, 2017, Virginia Electric and Power Company ("Dominion" or "Company") filed with the State Corporation Commission ("Commission") an application ("Application") for the determination of the fair rate of return on common equity ("ROE") to be applied to its rate adjustment clauses ("RACs") for the next two years pursuant to § 56-585.1:1 of the Code of Virginia ("Code").¹ Enacted in 2015, this provision of the Code requires that:

Commencing in 2017 and concluding in 2019, the State Corporation Commission, after notice and opportunity for a hearing, shall conduct a proceeding every two years to determine the fair rate of return on common equity to be used by a Phase II Utility as the general rate of return applicable to rate adjustment clauses under subdivisions A 5 or A 6 of § 56-585.1. A Phase II [U]tility's filing in such proceedings shall be made on or before March 31 of 2017 and 2019.²

The Company requests that the Commission approve an ROE of 10.5% for Dominion's RACs approved under Subdivision A 5 or A 6 of Code § 56-585.1, to be applied prospectively,

¹ Ex. 2 (Application) at 1.

² Code § 56-585.1:1 C 2. Dominion is a Phase II Utility. See Code § 56-585.1 A 1.

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effective with the date of the Commission's final order in this proceeding.³ Dominion currently has a total of nine RACs subject to the ROE to be determined in this proceeding.⁴

On April 21, 2017, the Commission issued an Order for Notice and Hearing that, among other things, docketed the Application; required Dominion to publish notice of its Application; gave interested persons the opportunity to comment on or participate in the proceeding; and scheduled a public hearing. Notices of participation were filed in this proceeding by the Virginia Committee for Fair Utility Rates ("Committee") and the Office of the Attorney General's Division of Consumer Counsel ("Consumer Counsel"). On July 26, 2017, Consumer Counsel filed the testimony and exhibits of its witness. On August 9, 2017, the Commission's Staff ("Staff") filed the testimony and exhibits of its witness. On August 23, 2017, the Company filed rebuttal testimony. No public comments were received on the Application.

The Commission convened a hearing, as scheduled, on September 6, 2017. No public witnesses appeared to testify at the hearing. The Company, the Committee, Consumer Counsel and Staff participated at the hearing. During the hearing, the Commission received testimony from witnesses on behalf of the participants, admitted evidence on the Application, and received closing argument from counsel.

NOW THE COMMISSION, upon consideration of this matter, is of the opinion and finds as follows.

As noted above, the sole purpose of this case is a determination of the fair ROE to be used by Dominion as the general return applicable to RACs under subdivisions A 5 or A 6 of

³ Ex. 2 (Application) at 4.

⁴ Dominion's RACs, and subsequent revisions thereto, approved under these statutes include Riders B, BW, C1/C2, CV, R, S, U, US-2, and W.

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Company witness Hevert calculated Dominion's cost of equity to be between 10.25% and 10.75% and determined that, considering the economic requirements necessary to support continuous access to capital, an ROE of 10.5% represents Dominion's cost of equity.⁷ Consumer Counsel witness Woolridge calculated Dominion's market cost of equity to be between 7.6% and 8.75% and determined that 8.75% represents Dominion's market cost of equity.⁸ Staff witness Oliver calculated Dominion's market cost of equity to be between 8.25% and 9.25% and determined that establishing the Company's cost of capital at 9.1% was appropriate.⁹ The Committee examined the testimony presented by Company witness Hevert, Staff witness Oliver, and Consumer Counsel witness Woolridge and recommended that the Commission adopt a market cost of equity that is no higher than the 9.1% recommended by Staff witness Oliver.¹⁰

⁵ Code § 56-585.1:1 C 2.

⁶ Code § 56-585.1:1 C 3.

⁷ Ex. 3 (Hevert Direct) at 4-50, 54-56.

⁸ Ex. 4 (Woolridge Direct) at 1-82.

⁹ Ex. 5 (Oliver Direct) at 1-16, 24-34.

¹⁰ See Tr. 18.

Dominion seeking to attract equity capital. Furthermore, under the circumstances of this case and for purposes of implementing Code § 56-585.1:1, the Commission finds that using a cost of equity of 9.2% is fair and reasonable for these purposes. The Commission concludes that this return is supported by the evidence in the record, results in a fair and reasonable ROE, and satisfies the following constitutional standards as stated by Staff witness Oliver: "maintenance of financial integrity, the ability to attract capital on reasonable terms, and earnings commensurate with returns on investments of comparable risk."¹¹ Conversely, the Commission further finds that Dominion's proposed cost of equity of 10.25% to 10.75% represents neither the actual cost of equity in the marketplace nor a reasonable ROE for the Company.

We conclude that a market cost of equity of 9.2% is supported by reasonable proxy groups, growth rates, discounted cash flow ("DCF") methods, and risk premium analyses.¹² Indeed, we conclude that the evidence supports a market cost of equity at the midpoint of the range, *i.e.*, 9.0%. We find that approving an ROE above the midpoint of the range found reasonable (9.2%) is supported by the concept of gradualism in ROE determinations.

While the market cost of equity approved herein is supported by reasonable proxy groups, growth rates, DCF methods, risk premium analyses, and gradualism in ROE determinations, the Commission finds that Dominion's proposed market cost of equity of 10.5% is not supported by reasonable growth rates, DCF methods or risk premium analyses. For example, the Company continues to use only earnings per share as the measure of growth in its DCF model.¹³ As the Commission has previously stated, using only earnings per share as the

¹¹ Ex. 5 (Oliver Direct) at 4.

¹² See, *e.g.*, Ex. 5 (Oliver Direct) at 4-16, 24-34; Ex. 4 (Woolridge Direct) at 1-82.

¹³ Ex. 3 (Hevert Direct) at 19-21; Ex. 4 (Woolridge Direct) at 68-70; Ex. 5 (Oliver Direct) at 26-27; Tr. 166-67.

measure of long-term growth results in unreasonably high growth rates that upwardly skew results.¹⁴ Moreover, the Company's Capital Asset Pricing Model ("CAPM") analysis is also flawed. For example, the Company's highest ROE estimates result from the use of a 2019 projected 30-year Treasury bond yield of 4.2% and a 2021 projected 30-year Treasury bond yield of 4.4%.¹⁵ The Commission has explicitly rejected the use of such projected interest rates in prior cases, stating that inclusion of these projected rates inflates the results of the utility's risk premium analysis.¹⁶ In addition, the Company exclusively used earnings per share as the measure of long-term growth to develop the market risk premium component of its CAPM analysis, which results in an overstatement of the cost of equity.¹⁷ The Company's Bond Yield Plus Risk Premium analysis contains similar flaws as its CAPM analysis.¹⁸

¹⁴ See, e.g., *Application of Virginia Electric and Power Company, For a 2013 biennial review of the rates, terms and conditions for the provision of generation, distribution and transmission services pursuant to § 56-585.1 A of the Code of Virginia*, Case No. PUE-2013-00020, 2013 S.C.C. Ann. Rept. 371, 374, Final Order (Nov. 26, 2013); *Application of Appalachian Power Company, For an increase in electric rates*, Case No. PUE-2006-00065, 2007 S.C.C. Ann. Rept. 321, 327, Final Order (May 15, 2007) (stating that significant biases were embodied in Appalachian Power Company's ("APCo") DCF analysis because the utility's growth rate "primarily emphasized projected earnings per share growth rates and ignored other projected rates of growth for dividends, book value, and retained earnings to estimate a long-term sustainable growth rate assumed by the DCF model and reflected in the rates developed by the other witnesses.").

¹⁵ Ex. 3 (Hevert Direct) at 27; Ex. 9 (Hevert Rebuttal) at 96. Use of the 2021 projected 30-year Treasury bond yield of 4.4% in the Company's original CAPM analysis suggested an ROE range of 10.59% to 12.39%. Ex. 3 (Hevert Direct) at 27. In contrast, use of a current 30-year Treasury bond yield in the Company's original CAPM analysis suggested an ROE range of 9.26% to 11.06%. *Id.*

¹⁶ See, e.g., *Application of Appalachian Power Company, For the determination of the fair rate of return on common equity to be applied to its rate adjustment clauses*, Case No. PUE-2016-00038, 2016 S.C.C. Ann. Rept. 393, 395, Final Order (Oct. 6, 2016); *Application of Aqua Virginia, Inc., For an increase in rates*, Case No. PUE-2014-00045, 2016 S.C.C. Ann. Rept. 206, 209, Final Order (Jan. 7, 2016); *Application of Appalachian Power Company, For an increase in electric rates*, Case No. PUE-2006-00065, 2007 S.C.C. Ann. Rept. 321, 327, Final Order (May 15, 2007). See also Ex. 5 (Oliver Direct) at 27-29.

¹⁷ See, e.g., Ex. 3 (Hevert Direct) at 25-26, Schedule 2; Ex. 4 (Woolridge Direct) at 71-80; Ex. 5 (Oliver Direct) at 29-30.

¹⁸ See Ex. 3 (Hevert Direct) at 27-30; Ex. 4 (Woolridge Direct) at 80-82; Ex. 5 (Oliver Direct) at 29-30.

Further, we reject claims that certain business risks facing Dominion warrant a 10.5% ROE.¹⁹ For example, while Company witness Hevert claims that risks associated with the Company's anticipated capital expenditures warrant a 10.5% ROE, of the approximately \$8.5 billion of additional planned capital expenditures the Company anticipates making, the record indicates that Dominion plans to recover over \$5 billion of this projected amount through RACs, which permit the timely and current recovery of all reasonable and prudent costs on a dollar-for-dollar basis.²⁰

Dominion suggests that its ROE should not be any lower than 9.4%.²¹ The Commission first approved an ROE of 9.4% for Dominion in a February 16, 2017 Order issued in Case Nos. PUE-2016-00059, PUE-2016-00060, PUE-2016-00061, PUE-2016-00062 and PUE-2016-00063.²² The midpoint of the range found reasonable in those cases was 9.0%. The Commission, however, did not direct an ROE of 9.0% but, rather, approved 9.4% based on the concept of gradualism in ROE cases. In addition, the Commission's decision in those proceedings was based on the record of evidence presented there, which reflects earlier financial data. For example, in those proceedings Staff and the Company relied upon financial data from late 2016.²³ In contrast, in the instant case, the Company updated its ROE results with financial data through July 2017.²⁴ Moreover, the record presented in this proceeding shows that

¹⁹ Ex. 3 (Hevert Direct) at 30-37; Ex. 5 (Oliver Direct) at 31-34.

²⁰ Ex. 3 (Hevert Direct) at 30-31; Ex. 5 (Oliver Direct) at 31.

²¹ Tr. 17.

²² See, e.g., *Application of Virginia Electric and Power Company d/b/a Dominion Virginia Power, For revision of rate adjustment clause: Rider S, Virginia City Hybrid Energy Center*, Case No. PUE-2016-00062, Doc. Con. Cen. No. 170220479, Order (Feb. 16, 2017).

²³ *Id.* at 11-12.

²⁴ See, e.g., Ex. 9 (Hevert Rebuttal) at Schedule 1.

Dominion's updated ROE results reflect a reduction in most of the values in its DCF, CAPM and risk premium results.²⁵

Statutory Peer Group

Code § 56-585.1:1 C 3 states that Dominion's ROE "shall be calculated pursuant to the methodology set forth in subdivisions A 2 a and b of § 56-585.1...." Subdivisions A 2 a and b of Code § 56-585.1 require that the Commission calculate a statutory floor below which the authorized ROE cannot be set. Specifically, the Code states in relevant part:

a. The Commission may use any methodology to determine such return it finds consistent with the public interest, but such return shall not be set lower than the average of the returns on common equity reported to the Securities and Exchange Commission for the three most recent annual periods for which such data are available by not less than a majority, selected by the Commission as specified in subdivision 2 b, of other investor-owned electric utilities in the peer group of the utility subject to such biennial review, nor shall the Commission set such return more than 300 basis points higher than such average.

b. In selecting such majority of peer group investor-owned electric utilities, the Commission shall first remove from such group the two utilities within such group that have the lowest reported returns of the group, as well as the two utilities within such group that have the highest reported returns of the group, and the Commission shall then select a majority of the utilities remaining in such peer group. In its final order regarding such biennial review, the Commission shall identify the utilities in such peer group it selected for the calculation of such limitation. For purposes of this subdivision, an investor-owned electric utility shall be deemed part of such peer group if (i) its principal operations are conducted in the southeastern United States east of the Mississippi River in either the states of West Virginia or Kentucky or in those states south of Virginia, excluding the state of Tennessee, (ii) it is a vertically-integrated electric utility providing generation, transmission and distribution services whose facilities and operations are subject to state public utility regulation in the state where its principal operations are conducted, (iii) it had a long-term bond rating assigned by Moody's Investors Service of at least Baa at the end of the most recent test period subject to such biennial review, and (iv) it is not an affiliate of the utility subject to such biennial review.

²⁵ Ex. 3 (Hevert Direct) at 23, 27, 30; Ex. 9 (Hevert Rebuttal) at 96.

The participants differed on which utilities should be included in the statutory peer group in this proceeding. First, Dominion excluded Mississippi Power Company ("Mississippi Power") from the statutory peer group solely because "its Moody's long term bond rating (Ba1) has dropped below the required level of at least Baa."²⁶ Staff and Consumer Counsel included Mississippi Power in their statutory peer group analyses because "Mississippi Power had a Moody's long-term bond rating of Baa3 at the end of the test period."²⁷

Code § 56-585.1 A 2 b mandates that "an investor-owned electric utility shall be deemed part of such peer group if ... (iii) it had a long-term bond rating assigned by Moody's Investors Service of at least Baa at the end of the most recent test period subject to such biennial review...." Code § 56-585.1:1 C 3 states that the ROE "shall be calculated [utilizing] ... a 12-month test period ending December 31 immediately preceding the year in which the proceeding is conducted." Factually, December 31, 2014, is "the end of the most recent test period subject to [a] biennial review"²⁸ for Dominion. Calendar year 2016 is the "12-month test period ending December 31 immediately preceding the year in which the [present] proceeding is conducted."²⁹ Notably, under either plain language interpretation identified above, Mississippi Power's downgrade would not affect its inclusion in the statutory peer group because the downgrade occurred on March 1, 2017, which is clearly after the end of either review period.³⁰ The Commission therefore finds that, for purposes of this proceeding, Mississippi Power shall be considered part of the peer group.

²⁶ Ex. 2 (Application) at Filing Schedule 45 - Statement 3A.

²⁷ Ex 4 (Woolridge Direct) at 86. *See also* Ex. 5 (Oliver Direct) at 19-20.

²⁸ Code § 56-585.1 A 2 b.

²⁹ Code § 56-585.1:1 C 3.

³⁰ Ex 4 (Woolridge Direct) at 86; Ex. 5 (Oliver Direct) at 19; Tr. 132.

The participants also differed on whether APCo should be considered part of the peer group. Staff and Consumer Counsel included APCo in their proposed peer groups, while Dominion excluded APCo from its proposed peer group.³¹ However, as discussed below, we have selected a statutory floor majority that is lower than the ROE approved herein regardless of whether APCo is included as part of the total peer group; thus, we need not address APCo's inclusion or exclusion as part of this proceeding.

The majority that the Commission selects had, on average, a return on average equity close to the ROE found fair and reasonable herein.³² This results in a statutory floor below the ROE approved herein.³³ The Commission concludes that the specific majority chosen herein is reasonable and does not violate any constitutional or statutory provision.³⁴

³¹ Ex. 3 (Hevert Direct) at 51-54; Ex 4 (Woolridge Direct) at 85-86; Ex. 5 (Oliver Direct) at 18-19; Ex. 9 (Hevert Rebuttal) at 55-56, 95.

³² Based upon the facts in this case, the Commission finds that it is reasonable to utilize returns on average equity for this purpose.

³³ The statutory floor without APCo in the peer group is 9.09% and is comprised of the following companies: Entergy Mississippi, Inc., Louisville Gas & Electric Company, Duke Energy Progress, Inc., South Carolina Electric & Gas Company, and Duke Energy Carolinas, LLC. The statutory floor with APCo in the peer group is 9.07% and is comprised of the following companies: Entergy Mississippi, Inc., Louisville Gas & Electric Company, Duke Energy Progress, Inc., South Carolina Electric & Gas Company, Duke Energy Carolinas, LLC, and APCo. See Ex. 5 (Oliver Direct) at Schedule 12.

³⁴ The Code clearly leaves the selection of the "majority" to the Commission's discretion. If the General Assembly wanted the Commission to apply a particular approach or evaluation methodology in selecting a majority, it could have directed as such; it did not. As the Commission has previously determined, it is reasonable in this proceeding to select a majority that has an earned return that is close to the market cost of equity capital found fair and consistent with the public interest herein. The Commission does not, and need not, find that this is the only majority that is reasonable. See, e.g., *Application of Virginia Electric and Power Company, For a 2013 biennial review of the rates, terms and conditions for the provision of generation, distribution and transmission services pursuant to § 56-585.1 A of the Code of Virginia*, Case No. PUE-2013-00020, 2013 S.C.C. Ann. Rept. 371, 375-76, Final Order (Nov. 26, 2013).

In sum, the Commission concludes that the fair ROE in this proceeding for Dominion is 9.2%.³⁵ The Commission finds that this ROE is supported by the record, is fair and reasonable to the Company within the meaning of the Code, permits the attraction of capital on reasonable terms, fairly compensates investors for the risks assumed, enables the Company to maintain its financial integrity, and satisfies all applicable constitutional standards.

Accordingly, IT IS SO ORDERED and this matter is dismissed.

AN ATTESTED COPY hereof shall be sent by the Clerk of the Commission to all persons on the official Service List in this matter. The Service List is available from the Clerk of the Commission, c/o Document Control Center, 1300 East Main Street, First Floor, Tyler Building, Richmond, Virginia 23219. A copy also shall be sent to the Commission's Office of General Counsel and Divisions of Public Utility Regulation and Utility Accounting and Finance.

³⁵ Pursuant to Code § 56-585.1:1 C 3, "any adjustment to the fair rate of return for applicable rate adjustment clauses under subdivisions A 5 and A 6 of § 56-585.1 [shall take] effect on the date of the Commission's final order in the proceeding, utilizing rate adjustment clause true-up protocols as the Commission may in its discretion determine." Accordingly, the 9.2% ROE found appropriate herein shall become effective with respect to the Company RACs under Code § 56-585.1 A 5 and A 6 on the date of this Order and any resulting over- or under-recovery shall be addressed through appropriate true-up protocols in future RAC proceedings.

I/A

**Commission Approved ROE Costs of Equity Models
CWSNC W-354, Sub 360 General Rate Case**

All percent's below are Current Sub 364

	<u>D'Ascendis</u>	<u>Hinton</u>
<u>Utility Proxy Group</u>		
DCF	8.81% ⁽¹⁾	8.64% ⁽⁴⁾
Risk Premium		9.57% ⁽⁵⁾
Total Market Risk Premium	9.39% ⁽²⁾	
Traditional CAPM	8.90 ⁽³⁾	
Average Recommended Return on Equity of Above Analyses	9.03%	9.10%
Average of All Five Models Approved by Commission in Sub 360 ⁽⁶⁾		<u>9.06%</u>

The Commission Order dated February 21, 2019, Docket No. 354, Sub 364, starting at the end of page 82 and finishing at the top of page 83, states:

"In so doing, the Commission finds that the testimony of Company witness D'Ascendis regarding the DCF (9.15%), traditional CAPM (10.67%), and total market RPM (10.56%) analyses of his Utility Proxy Group and the DCF (8.70%) and risk premium (9.70%) analysis testimony of Public Staff witness Hinton are credible, probative, and are entitled to substantial weight as set forth below."

- (1) D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 3 of 31, Column 8, Average of Mean and Median.
- (2) D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 12 of 31, line 7.
- (3) D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 21 of 31, Column 6, Average of Mean and Median.
- (4) Hinton Direct Testimony, page 29, line 12.
- (5) Hinton Direct Testimony, page 32, line 4.
- (6) Commission Order dated February 21, 2019, Docket No. W-354, Sub 360, pages 82-83, cited in D'Ascendis Pre-Filed Rebuttal Testimony Docket No. W-354, Sub 364, page 10, line 20 through page 11, line 2.

I/A

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 1
Page 1 of 3

CWSNC Water

Service Area

Abington/InterLarken
Bahia Bay
Bear Paw
Beechbrook
Belvedere Plantation
Bent Creek
Brandywine Bay
Buffalo Creek
Chapel Hill
College Park
Country Club Annex
Country Hills
Crestview
Crystal Mountain
Lamplight/Danby/Wdsd Fall
Eagle Crossing
Eastgate
Eastwood Forest
Forest Brook/Ole lamp Place
Grandview at T-Square
Harbor House Estates
Heathfield
Hestron Park
High Meadows
Holly Acres
Hounds Ear
Huntington Forest
Kings Grant
Larkhaven
Lemmond Acres
Linville Ridge
Mason Landing
Meadow Glen
Misty Mountain
Monteray
Mt Mitchell
Nero

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 1
Page 2 of 3

CWSNC Water

Service Area

Oakdale terrace
Olde Point
Pinnacle Shores
Powder Horn Mountain
Quail Ridge
Queen's Harbor
Red Bird
Ridges at Mountain Harbor
Riverwood
Saddlewood
Sherwood Forest
Sherwood Park
Ski Country
Ski Mountain
Stone Hollow
Suburban Heights
Sugar Mountain
The Harbor/Point
Watauga Vista
Waterglyn
Westwood Forest
Wildlife Bay
Wildwood green
Willowbrook
Wolf Laurel
Wood Trace
Woodhaven Manor

Service Area

Clear Water Systems
Ashley Hills/Amber Acres
Heather Glen
Country Crossing
Oaks Plantation
Randsdell Forest
Sandy Trails
Stewarts Ridge

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 1
Page 3 of 3

CWSNC Water

Service Area

Wilders Village
Neuse Woods
Tuckahoe
Jordan Woods
Hidden Hollow
Lindsey Point

New Under Uniform Rates

Forest Hills
Connettee Falls
Fairfield Sapphire Valley
Fairfield Mountain (a.k.a. Rumbling Bald)
Elk River

Purchased Water Systems

Carolina Forest
High Vista
Riverpointe
Whispering Pines
White Oak Plantation
Woodrun
Yorktown
Zemosa Acres
Carolina Trace
Riverbend

Service Area

Bradfield Farms
Fairfield Harbor
Treasure Cove
Silverton

I/A

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 2
Page 1 of 1

CWSNC Sewer

Service Area

Abington/Kynwood
Ashley Hills
Bear Paw
Belvedere Plantation
Bent Creek
Brandywine Bay
Carolina Pines
Lamplight/Danby/Wdsd F
Hestron Park
Hounds Ear
Hemby Acres/Beacon Hill
Kings Grant - Raleigh
Nero
Olde Point
Queen's Harbor
Riverpointe
Saddlewood
Sugar Mountain
Wolf Laurel
Willowbrook
Regalwood
White Oak Estates
White Oak High School
Child Daycare

Purchased Sewer

College Park
Kings Grant - Charlotte
Mt Carmel
White Oak Planation
The Ridges at Mountain Harbor
Fairfield Mountain

New Under Uniform Rates

Carolina Trace
Connestee Falls
Nags Head
Sapphire Valley
Elk River
Corolla Light/Monteray Shores

Service Area

Bradfield Farms
Fairfield Harbour
Silverton

I/A

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
Test Year Ending March 31, 2019

Casselberry
Exhibit No. 3
Page 1 of 4

WATER UTILITY SERVICE UNDER UNIFORM RATES

Monthly Metered Water Service: (Residential and Commercial)

	<u>Existing</u>	<u>Proposed</u>
Base Facility Charges (zero usage)		
< 1" meter	\$ 27.53	\$ 29.81
1" meter	\$ 68.83	\$ 74.53
1-1/2" meter	\$ 137.65	\$ 149.05
2" meter	\$ 220.24	\$ 238.48
3" meter	\$ 412.95	\$ 447.15
4" meter	\$ 688.25	\$ 745.25
6" meter	\$ 1,376.50	\$ 1,490.50

	<u>Existing</u>	<u>Proposed</u>
Usage Charge, per 1,000 gallons		
Treated Water	\$ 7.08	\$ 8.82
Untreated Water (Brandywine Bay Irrigation Water)	\$ 4.11	\$ 5.12

Purchased Water for Resale

<u>Service Area</u>	<u>Bulk Provider</u>	<u>Usage Charge per 1,000 gallons</u>	
Carolina Forest	Montgomery County	\$ 3.19	\$ 3.19
High Vista Estates	City of Hendersonville	\$ 3.25	\$ 3.43
Riverbend Estates	Town of Franklin	\$ 7.20	\$ 7.20
Riverpointe	CLTWater	\$ 6.30	\$ 6.48
Whispering Pines	Town of Southern Pines	\$ 2.23	\$ 2.23
White Oak Plantation/ Lee Forest	Johnston County	\$ 2.40	\$ 2.65
Winston Plantation	Johnston County	\$ 2.40	\$ 2.65
Winston Pointe	Johnston County	\$ 2.40	\$ 2.65
Woodrun	Montgomery County	\$ 3.19	\$ 3.19
Yorktown	City of Winston-Salem	\$ 5.01	\$ 5.19
Zemosa Acres	City of Concord	\$ 5.27	\$ 5.27
Carolina Trace	City of Sanford	\$ 2.21	\$ 2.21

Conservation Rate Pilot Program - The Point Service Area

	<u>Existing</u>	<u>Proposed</u>
Base Facility Charges (zero usage)		
< 1" meter		\$ 23.85
Usage Charge (Blocks will be prorated for billing periods outside standard monthly cycles)		
Block 1 0 - 5,000 gallons		\$ 7.06
Block 2 5001 - 18,000 gallons		\$ 11.03
Block 3 18,000 and greater		\$ 14.71

Monthly Flat Rate Water Service: (per residence or single family equivalent)

\$ 53.58	\$ 61.96
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Availability Rates (semi-annual):

Applicable only to property owners in Carolina Forest and Woodrun Subdivisions in Montgomery County	\$ 24.65	\$ 24.65
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Availability Rates (Monthly):

Applicable only to property owners in Linville Ridge Subdivision	\$ 12.35	\$ 12.35
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Availability Rates (Monthly):

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$	9.10	\$	9.10
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Availability Rates (Monthly):

Applicable only to property owners in Connetsee Falls	\$	4.80	\$	4.80
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SEWER UTILITY SERVICE UNDER UNIFORM RATES

Monthly Metered Sewer Service:

Base Facility Charges	Existing	Proposed
Residential (zero usage)	\$ 46.31	\$ 59.67
Commercial (zero usage)		
<1" meter	\$ 46.31	\$ 59.67
1" meter	\$ 115.78	\$ 149.18
1-1/2" meter	\$ 231.55	\$ 298.35
2" meter	\$ 370.48	\$ 477.36
3" meter	\$ 694.65	\$ 895.05
4" meter	\$1,157.75	\$1,491.75
6" meter	\$2,315.50	\$2,983.50
Usage charge, per 1,000 gallons	\$ 3.62	\$ 5.80

Monthly Metered Purchased Sewer Service:

Collection charge (Residential and Commercial/SFE)	\$	31.63	\$	40.78
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Usage charge, per 1,000 gallons based on purchased water

Service Area	Bulk Provider	Existing	Proposed
White Oak Plantation/	Johnston County	\$ 5.06	\$ 5.57
Lee Forest/Winston Point	Two Rivers Utilities	\$ 3.80	\$ 3.98
Kings Grant	Town of Dallas	\$ 5.70	\$ 5.70
College Park			

Monthly Flat Rate Sewer Service:

	\$	57.82	\$	79.46
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Multi-residential customers who are served by a Master meter shall be charged the flat rate per unit

MT. Carmel Subdivision Service Area:

Monthly Base Facility Charge	\$	6.77	\$	7.11
Monthly Collection Charge (Residential and commercial/SFE)	\$	31.63	\$	40.78
Usage Charge/1,000 gallons (Based on metered water usage)	\$	5.88	\$	6.16

Regalwood and White Oak Estates Subdivision Service Area:

Monthly Flat Rate Sewer Service:

	Existing	Proposed
Residential Service	\$ 57.82	\$ 79.46
White Oak High School	\$1,799.66	\$2,059.25

Monthly Flat Rate Sewer Service:

	<u>Existing</u>	<u>Proposed</u>
Child Castle Daycare	\$ 223.58	\$ 255.83
Pantry	\$ 119.49	\$ 136.73

Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald) service area, Highland Shores Subdivision and Laurel Mountain Estates:

Monthly Sewer Rates:

Residential	<u>Existing</u>	<u>Proposed</u>
Collection charge/dwelling unit	\$ 31.63	\$ 40.78
Treatment charge/dwelling unit	\$ 69.50	\$ 69.50
Total monthly flat rate/dwelling charge	\$ 101.13	\$ 110.28
Commercial and Other		
Minimum monthly collection and treatment charge	\$ 101.13	\$ 110.28
Monthly collection and treatment charge for Customers who do not take water service (per single family equivalent)	\$ 101.13	\$ 110.28
Treatment charge per dwelling unit		
Small (less than 2,500 gallons per month)	\$ 78.50	\$ 78.50
Medium (2,500 to 10,000 gallons per month)	\$ 139.50	\$ 139.50
Large (over 10,000 gallons per month)	\$ 219.50	\$ 219.50
Collection Charge (per 1,000 gallons)	\$ 13.93	\$ 13.93

The Ridges at Mountain Harbour:

Monthly Sewer Rates:

Collection charge (Residential and Commercial)	\$ 31.63	\$ 40.78
Treatment charge (Residential and Commercial)		
< 1" meter	\$ 18.42	\$ 18.42
2" meter	\$ 147.36	\$ 147.36

Availability Rates (Monthly):

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 8.30	\$ 8.30
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Availability Rates (Monthly):

Applicable only to property owners in Connestee Falls	\$ 4.70	\$ 4.70
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CORROLA LIGHT AND MONTERAY SHORES SERVICE AREA

Monthly Metered Sewer Service:

Base Facility Charges:

	<u>Existing</u>	<u>Proposed</u>
Residential (zero usage)	same as Commercial	\$ 59.67

Commercial (based on meter size with zero usage)

	<u>Existing</u>	<u>Proposed</u>
<1" meter	\$ 52.06	\$ 59.67
1" meter	\$ 130.15	\$ 149.18
1-1/2" meter	\$ 260.31	\$ 298.35
2" meter	\$ 416.49	\$ 477.36
3" meter	\$ 780.92	\$ 895.05
4" meter	\$1,301.54	\$1,491.75
6" meter	\$2,603.07	\$2,983.50
Usage charge, per 1,000 gallons	\$ 6.62	\$ 5.80

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

Monthly Metered Water Service: (Residential and Commercial)

	<u>Existing</u>	<u>Proposed</u>
Base Facility Charges (based on meter size with zero usage)		
< 1" meter	\$ 16.74	\$ 18.67
1" meter	\$ 41.85	\$ 46.68
1-1/2" meter	\$ 83.70	\$ 93.35
2" meter	\$ 133.92	\$ 149.36
Usage Charge, per 1,000 gallons	\$ 3.75	\$ 4.45

Availability Rates (Monthly rate, billed semiannually):

Applicable only to property owners in Fairfield Harbour Service Area	\$ 3.28	\$ 3.28
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Monthly Sewer Rates:

<u>Residential:</u>	<u>Existing</u>	<u>Proposed</u>
Flat Rate, per dwelling unit	\$ 50.46	\$55.66
Bulk Flat Rate, per REU	\$ 50.46	\$55.66

Commercial and other:

Monthly Flat Rate (Customers who do not take water service)	\$ 50.46	\$ 55.66
Monthly Metered Rates (based on meter size with zero usage)		
<1" meter	<u>Existing</u> \$ 44.58	<u>Proposed</u> \$ 49.17
1" meter	\$111.45	\$ 122.94
1-1/2" mete	\$222.90	\$ 245.87
2" meter	\$356.64	\$ 393.39
Usage charge, per 1,000 gallons	\$ 1.43	\$ 1.72

Bulk Sewer for Hawthorne at the Green Apartments

Bulk Flat Rate, per REU	\$ 50.46	\$ 55.66
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Availability Rates (Monthly rate, billed semiannually):

Applicable only to property owners in Fairfield Harbour Service Area	\$ 2.65	\$ 2.65
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Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 4
Page 1 of 4

Billing Analysis for End of Period Customers

CWSNC Water

Carolina F

Service Area	Total														Total	Total	Woodrun	Linville	Conn F	Sapp V			
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	RES	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Comm.	EOP	availab	availab	availab	availab
Abington/InterLarken	599									599	1							1	600				
Bahia Bay	113									113								0	113				
Bear Paw	342	3								345	5	1						6	351				
Beechbrook	39									39								0	39				
Belvedere Plantation	1231		4							1235	3	2		7	4			16	1251				
Bent Creek	304									304	1							1	305				
Brandywine Bay	849		3	1	1					854	10	3						13	867				
Buffalo Creek	287									287								0	287				
Chapel Hill	95									95								0	95				
College Park	80									80								0	80				
Country Club Annex	23									23								0	23				
Country Hills	66									66								0	66				
Crestview	40									40								0	40				
Crystal Mountain	48									48								0	48				
Lamplight/Danby/Wdsd Fall	1292		3							1295	2	2	2	1				7	1302				
Eagle Crossing	77									77								0	77				
Eastgate	57									57	1							1	58				
Eastwood Forest	134									134	1							1	135				
Forest Brook/Ole lamp Place	83									83		1						1	84				
Grandview at T-Square	75									75	1							1	76				
Harbor House Estates	22									22								0	22				
Heathfield	64									64		1						1	65				
Hestron Park			1							1	1		2	7				10	11				
High Meadows	263									263	3			1				4	267				
Holly Acres	51									51		1						1	52				
Hounds Ear	424		6	1	1					432	8	2	0	3				13	445				
Huntington Forest	58									58								0	58				
Kings Grant	177		1							178	1							1	179				
Larkhaven	147	16								163								0	163				

2/18

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 4
Page 2 of 4

Billing Analysis for End of Period Customers

CWSNC Water

CWSNC Water											Total										Total	Total	Woodrun	Linville	Conn F	Sapp V
Service Area	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	RES	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Comm.	EOP	availab	availab	availab	availab			
Lemmond Acres	33									33	1							1	34							
Meadow Glen	33									33								0	33							
Misty Mountain	143									143								0	143							
Monteray	27									27								0	27							
Mt Mitchell	204								16	220	1	1	2	1				5	225							
Nero	125									125								0	125							
Oakdale terrace	42									42								0	42							
Old Lamp Place	45	1								46									46							
Olde Point	195		3							198	1			1				2	200							
Pinnacle Shores	158									158	9							9	167							
Powder Horn Mountain	238									238	2	1						3	241							
Quail Ridge	172		2							174	1							1	175							
Queen's Harbor	114									114	2					1		3	117							
Red Bird	8									8									8							
Ridges at Mt Harbor									62	62	1			1				2	64							
Riverwood	192	1	1		1					195			1	0				1	196							
Saddlewood	127									127								0	127							
Sherwood Forest	249									249	6		1	1				8	257							
Sherwood Park	97									97			1					1	98							
Ski Country	66									66								0	66							
Ski Mountain	254									254								0	254							
Stone Hollow	223									223	1							1	224							
Suburban Heights	25									25								0	25							
Sugar Mountain	1363		6		16					1385	57		3	25				85	1470							
The Harbor/Point	1519		2	1						1522	15	3	1	3			2	24	1546							
Tanglewood estates	138									138				2					138							
Tanglewood south	79									79									79							
Vander	0									0	1			2				3	3							
Watauga Vista	140									140								0	140							

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 21, 2019

Casselberry
Exhibit No. 4
Page 3 of 4

Billing Analysis for End of Period Customers

CWSNC Water

C. Forest

Service Area	Total											Total	Total	Woodrun	Linville	Conn F	Sapp V						
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	RES	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Comm.	EOP	availab	availab	availab	availab
Waterglyn	43									43								0	43				
Westwood Forest	122									122								0	122				
Wildlife Bay	83									83	1							1	84				
Wildwood green	229									229	1							1	230				
Willowbrook	172									172		1						1	173				
Wolf Laurel	651									651	6	14		3				23	674				
Wood Trace	46									46								0	46				
Woodhaven Manor	79		1							80								0	80				
Mason Landing	14									14	1			1				2	16				
Linville Ridge		1	1						349	351	1	1		5	1			8	359		48		
Uniform	14488	22	34	3	19	0	0	0	427	14993	146	34	13	64	5	1	2	265	16258	0	48	0	0
Clearwater	2088									2088	4							4	2092				
Forest Hills	118									118	1	2	3					6	124				
Connetsee Falls	1384	1								1385	17			3				20	1405			427	
Fairfield Sapphire Valley	1563	4	5	32	17					1621	39	3	6	8	1			57	1678				734
Fairfield Mt/Apple Valley	1018	18	12							1048	45	4	4	4				57	1105				
Elk River	1	276	13							290	35	1		4				40	330				
Total Uniform	20660	321	64	35	36	0	0	0	427	21543	287	44	26	83	6	1	2	449	21992	0	48	427	734
Purchased Water Systems																							
Carolina Trace	1610		1		1					1612	26	1	1	2				30	1642				
Carolina Forest	209		1							210	4	1	1					6	216	1354			
High Vista	234		1							235	3			1				4	239				
Riverpointe	190		2							192	5							5	197				
Whispering Pines	1578		15							1593	28	7	5	1		1		42	1635				
White Oak Plantation	590	1								591			1					1	592				
Woodrun	463		1							464	4	1						5	469				
Yorktown	106									106								0	106				
Zemosa Acres	243	1	3							247		1						1	248				

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 4
Page 4 of 4

Billing Analysis for End of Period Customers

CWSNC Water

CWSNC Water																			C. Forest				
Service Area	Total										Total	Total	Woodrun	Linville	Conn F	Sapp V							
	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	RES	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Comm.	EOP	availab	availab	availab	availab
Riverbend	141																						
Grant Total	26024	323	88	35	37	0	0	0	427	26934	357	55	34	87	6	2	2	543	27477	1354	48	427	734

TC/BF/FH/Silverton

											Total								Total	Total	FH			
Service Area	5/8 R	3/4 R	1 R	1.5 R	2 R	3 R	4 R	6 R	Flat R	RES	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Comm.	EOP	availab	availab	availab	availab	
Bradfield Farms	1019	94								1113	1	5						6	1119					
Fairfield Harbor	1728	3								1731	22	1	2	3				28	1759	969				
Treasure Cove	303	3	1		1					308								0	308					
Pace/Silverton	61									61								0	61					
Total	3111	100	1	0	1	0	0	0	0	3213	23	6	2	3	0	0	0	34	3247	969				

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364

For the 12 Months Ending March 31, 2019

Casselberry

Exhibit No. 5

Page 1 of 3

Billing Analysis for End of Period Customers at Present Rates

CWSNC Sewer

Service Area	5/8 R	1 R	1.5 R	2 R	3 R	Flat R	Total		5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Multi	Total	Total	Avail	Avail
							Res.	Comm								Flat				
																Comm	Comm	EOP	Conn	Sapp
Abington/kynwood	599					114	713		1								1	714		
Ashley Hills	1,183	2				26	1,211										0	1,211		
Bear Paw	68						68		3								3	71		
Belvedere Plantation	716	2					718		1			4	3			3	11	729		
Bent Creek	304						304										0	304		
Brandywine Bay	766	3		1		46	816		4							2	6	822		
Carolina Pines						338	338		1								1	339		
Lamplight/Danby/Wdsd F	1,289	3				7	1,299		327		1	2				4	334	1,633		
Hestron Park							-		1	0	2	7				1	11	11		
Hounds Ear	176	5					181		6	1		3					10	191		
Hemby Acres/Beacon Hill						674	674									8	8	682		
Kings Grant - Charlotte							-										0	-		
Kings Grant - Raleigh						120	120										0	120		
Nero	125						125										0	125		
Olde Point	117	3					120					1					1	121		
Queen's Harbor	114						114		1	9				1			11	125		
Riverpointe	190	1					191		1		4						5	196		
Saddlewood	18						18										0	18		
Sugar Mountain	1,100	1				137	1,238		40	4	2	21					67	1,305		
Wolf Laurel	56						56					2					2	58		
Willowbrook	172						172										0	172		
Total	6,993	20	-	1	-	1,462	8,476		386	14	9	40	3	1	-	18	471	8,947		
Carolina Trace	1577	1		1			1,579		16	1	1						18	1,597		
Connestee Falls	1001					5	1,006		7			1					8	1,014	218	
Nags Head						607	607		10	9	4	8			3	50	84	691		
Elk River	118	3					121		2	1		1					4	125		
Sapphire Valley (1)	658	2	0	0			660		21	4	51	6	1				83	743		87
Total	10,347	26	-	2	-	2,074	12,449		442	29	65	56	4	1	3	68	668	13,117	218	87

5/1/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 5
Page 2 of 3

Billing Analysis for End of Period Customers at Present Rates

															Multi					
															Multi					
															Flat	Total	Total	Avail	Avail	
Service Area	5/8 R	1 R	1.5 R	2 R	3 R	Flat R	Total Res.	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Comm	Comm	EOP	Conn	Sapp	
Purchased Sewer																				
White Oak Planation	499						499									0	499			
College Park	50					1	51									0	51			
Kings Grant Charlotte	177	1					178									0	178			
Total	726	1	-	-	-	1	728									0	728			

Service Area	1 R	1.5 R	2 R	3 R	Flat R	Res.	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	Comm	Comm	EOP		
Mt Carmel	392					392									0	392		
Fairfield Mountain (2,3)	405	12				417									0	417		
The Ridges						-	1			1				46	48	48		
Regalwood/white oak					1041	1,041									0	1,041		
White Oak Estates					0	-									0	-		
White oak High School					1	1									0	1		
Child Daycare					1	1									0	1		
CL/MS	782	87	0	0	0	869	67	19	2	2	1				91	960		

Note

1 Sapphire valley

1.5" Residential - Reclassified 32 multi-metered residential customers to 1.5" commercial customers

2" Residential - Reclassified 17 multi-metered residential customers to 1.5" commercial customers

Based on bills (48) 1.5 inch meter, (1) 1 inch meter and (4) 5/8 inch meter 1.5 inch meter 3 + 48 = 51, 1 inch meter 3 + 1 = 4 and 5/8 inch meter 17 + 4 = 21

2 Fairfield Mountain residential customers are flat rate

3 Fairfield Mountain treatment for commercial customers : ww only flat 2, small 4, medium 18, large 1

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 5
Page 3 of 3

Billing Analysis for End of Period Customers at Present Rates

BF/FH/Silverton

Service Area	1 R	1.5 R	2 R	3 R	Flat	Bulk	Total								Total Comm	Total EOP	Avail	
							Res.	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C			Harb	
Bradfield Farms	1112						1,112		2						2	1,114		
Lakehaven					165		165								0	165		
Hawthorne at the Green						169	169								0	169		
Beaver Farms						5	5								0	5		
Woodland						151	151								0	151		
Fairfield Harbour	1716						1,716	16		2	1				19	1,735	969	
Pace/Silverton							61								0	61		
Total	2828	0	0	0	165	386	3,379	16	2	2	1	0	0	0	21	3,400	928	

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 6
Page 1 of 3

Billing Analysis for Consumption

CWSNC Water

Service Area	5/8 R	3/4 R	1 R	1.5 R	2 R	Total Residential	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	TOTAL COMMERCIAL	Grand Total
Abington/InterLarken	29,020,099	-	-	-	-	29,020,099	412,340	-	-	-	-	-	-	412,340	29,432,439
Bahia Bay	4,793,770	-	-	-	-	4,793,770	-	-	-	-	-	-	-	-	4,793,770
Bear Paw	5,210,590	42,850	-	-	-	5,253,440	204,520	241,960	-	-	-	-	-	446,480	5,699,920
Beechbrook	1,402,660	-	-	-	-	1,402,660	-	-	-	-	-	-	-	-	1,402,660
Belvedere Plantation	60,559,214	-	216,430	-	-	60,775,644	22,830	108,090	-	2,705,814	5,826,197	-	-	8,662,931	69,438,575
Bent Creek	11,695,873	-	-	-	-	11,695,873	4,413	-	-	-	-	-	-	4,413	11,700,286
Brandywine Bay	32,146,699	-	94,030	172,300	150,900	32,563,929	239,540	396,540	107,200	-	-	-	-	743,280	33,307,209
Buffalo Creek	12,054,810	-	-	-	-	12,054,810	-	-	-	-	-	-	-	-	12,054,810
Chapel Hill	3,288,006	-	-	-	-	3,288,006	-	-	-	-	-	-	-	-	3,288,006
College Park	3,885,901	-	-	-	-	3,885,901	-	-	-	-	-	-	-	-	3,885,901
Country Club Annex	1,081,008	-	-	-	-	1,081,008	-	-	-	-	-	-	-	-	1,081,008
Country Hills	4,022,699	-	-	-	-	4,022,699	-	-	-	-	-	-	-	-	4,022,699
Crestview	1,170,979	-	-	-	-	1,170,979	-	-	-	-	-	-	-	-	1,170,979
Crystal Mountain	767,061	-	-	-	-	767,061	-	-	-	-	-	-	-	-	767,061
Lamplight/Danby/Wdsd Fall	63,730,868	-	146,130	-	-	63,876,998	94,090	112,350	409,000	51,700	-	-	-	667,140	64,544,138
Eagle Crossing	3,680,135	-	-	-	-	3,680,135	-	-	-	-	-	-	-	-	3,680,135
East gate	2,361,190	-	-	-	-	2,361,190	10,740	-	-	-	-	-	-	10,740	2,371,930
Eastwood Forest	5,923,131	-	-	-	-	5,923,131	19,730	-	-	-	-	-	-	19,730	5,942,861
Forest Brook/Ole lamp Place	4,377,915	-	-	-	-	4,377,915	-	134,600	-	-	-	-	-	134,600	4,512,515
Grandview at T-Square	3,688,424	-	-	-	-	3,688,424	39,698	-	-	-	-	-	-	39,698	3,728,122
Harbor House Estates	1,094,270	-	-	-	-	1,094,270	-	-	-	-	-	-	-	-	1,094,270
Heathfield	6,755,030	-	-	-	-	6,755,030	-	298,330	-	-	-	-	-	298,330	7,053,360
Hestron Park	-	-	497,490	-	-	497,490	35,930	-	679,700	3,281,267	-	-	-	3,996,897	4,494,387
High Meadows	5,427,682	-	-	-	-	5,427,682	405,310	-	-	201,277	-	-	-	606,587	6,034,269
Holly Acres	2,594,250	-	-	-	-	2,594,250	-	683,700	-	-	-	-	-	683,700	3,277,950
Hounds Ear	9,409,835	-	37,601	195,800	74,700	9,717,936	303,001	864,129	-	455,103	-	-	-	1,622,233	11,340,169
Huntington Forest	2,264,498	-	-	-	-	2,264,498	-	-	-	-	-	-	-	-	2,264,498
Kings Grant	8,157,700	-	191,540	-	-	8,349,240	36,490	-	-	-	-	-	-	36,490	8,385,730
Larkhaven	7,927,540	867,430	-	-	-	8,794,970	-	-	-	-	-	-	-	-	8,794,970
Lemmond Acres	1,888,920	-	-	-	-	1,888,920	95,390	-	-	-	-	-	-	95,390	1,984,310
Linville Ridge	12,817	16,096	16,029	-	-	44,942	10	913,926	-	2,612,071	40,725	-	-	3,566,732	3,611,674
Mason Landing	787,490	-	-	-	-	787,490	176,534	-	-	222,100	-	-	-	398,634	1,186,124
Meadow Glen	1,869,000	-	-	-	-	1,869,000	-	-	-	-	-	-	-	-	1,869,000
Misty Mountain	2,346,217	-	-	-	-	2,346,217	-	-	-	-	-	-	-	-	2,346,217
Monteray	1,306,720	-	-	-	-	1,306,720	-	-	-	-	-	-	-	-	1,306,720
Mt Mitchell	4,501,490	-	-	-	-	4,501,490	32,781	99,962	153,539	746	-	-	-	287,028	4,788,518
Nero	5,733,951	-	-	-	-	5,733,951	-	-	-	-	-	-	-	-	5,733,951
Oakdale terrace	1,562,010	-	-	-	-	1,562,010	-	-	-	-	-	-	-	-	1,562,010
OLD lamp Place	2,065,080	11,210	-	-	-	2,076,290	-	-	-	-	-	-	-	-	2,076,290
Olde Point	7,943,499	-	61,950	-	-	8,005,449	49,900	-	-	738,800	-	-	-	788,700	8,794,149
Pinnacle Shores	10,598,339	-	-	-	-	10,598,339	1,100,870	-	-	-	-	-	-	1,100,870	11,699,209

4/1

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 6
Page 2 of 1

Billing Analysis for Consumption

CWSNC Water

Service Area	5/8 R	3/4 R	1 R	1.5 R	2 R	Total Residential	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	TOTAL COMMERCIAL	Grand Total
Powder Horn Mountain	4,037,086					4,037,086	765	226,751						227,516	4,264,602
Quail Ridge	7,669,755		70,950			7,740,705	190,620							190,620	7,931,325
Queen's Harbor	4,218,360					4,218,360	61,890					935,270		997,160	5,215,520
Red Bird	193,089					193,089								-	193,089
Ridges at Mountain Harbour						-	258,840			218,600				477,440	477,440
Riverwood	10,475,580	370,000	109,270		38,100	10,992,950			37,630					37,630	11,030,580
Saddlewood	5,769,819					5,769,819								-	5,769,819
Sherwood Forest	6,606,788					6,606,788	135,740		298,380	562,555				996,675	7,603,463
Sherwood Park	5,599,113					5,599,113			286,400					286,400	5,885,513
Ski country	731,962					731,962								-	731,962
Ski Mountain	6,496,825					6,496,825								-	6,496,825
Stone Hollow	10,462,800					10,462,800	560							560	10,463,360
Suburban Heights	1,146,840					1,146,840								-	1,146,840
Sugar Mountain	21,449,746		391,772		3,794,149	25,635,667	2,492,534		1,265,980	5,432,567				9,191,081	34,826,748
Tanglewood Estates	5,744,017					5,744,017				1,398,300				1,398,300	7,142,317
Tanglewood South	3,329,100					3,329,100								-	3,329,100
The Harbor	193,121,805		81,730	100,500		193,304,035	837,480	638,160	759,400	888,730			3,899,200	7,022,970	200,327,005
Vander						-								-	-
Watauga Vista	3,761,003					3,761,003								-	3,761,003
Waterglyn	1,806,550					1,806,550								-	1,806,550
Westwood Forest	5,121,746					5,121,746								-	5,121,746
Wildlife Bay	4,536,897					4,536,897	11,530							11,530	4,548,427
Wildwood green	10,454,336					10,454,336	44,490							44,490	10,498,826
Willowbrook	5,524,699					5,524,699		138,190						138,190	5,662,889
Wolf Laurel	14,703,790					14,703,790	374,344	310,528		372,374				1,057,246	15,761,036
Wood Trace	2,174,680					2,174,680								-	2,174,680
Woodhaven Manor	3,145,833		41,080			3,186,913								-	3,186,913
Total	677,389,589	1,307,586	1,956,002	468,600	4,057,849	685,179,626	7,692,910	5,167,216	3,997,229	19,142,004	5,866,922	935,270	3,899,200	46,700,751	731,880,377
Clearwater	101,463,942					101,463,942	1,990							1,990	101,465,932
Forest Hill	4,699,180					4,699,180	214,200	68,830	1,407,580					1,690,610	6,389,790
Conestee Falls	35,937,043	301,000				36,238,043	257,000			1,399,833				1,656,833	37,894,876
Sapphire Valley	36,690,321	39,620	405,053	4,204,519	1,861,391	43,200,904	1,751,738	796,924	1,773,585	1,414,371	1,329,527			7,066,145	50,267,049
Fairfield Mountain	26,694,304	331,090	1,431,750			28,457,144	2,528,230	1,308,370	526,260	877,910				5,240,770	33,697,914
Elk River	34,719	8,000,817	994,519			9,030,055	507,673	507,577		690,021				1,705,271	10,735,326
Total Uniform irrigation	882,909,098	9,980,113	4,787,324	4,673,119	5,919,240	908,268,894	12,953,741	7,848,917	7,704,654	23,524,139	7,196,449	935,270	3,899,200	64,062,370	972,331,264
Purchased Water						(497,490)									
Carolina Trace	61,635,224		96,220		10,000	61,741,444	1,667,530	60,850	570,000	1,861,400				4,159,780	65,901,224
Carolina Forest	6,466,328		9,490			6,475,818	15,679	81,625	87,000					184,304	6,660,122
High Vista	10,611,338		69,420			10,680,758	343,860			295,900				639,760	11,320,518

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 6
Page 3 of 3

Billing Analysis for Consumption

Uniform Water

Riverpointe	14,072,170		117,690			14,189,860	711,550							711,550	14,901,410
Riverbend	5,872,416					5,872,416								-	5,872,416
Whispering Pines	88,137,041		1,322,684			89,459,725	1,093,600	2,480,250	578,400	438,500	520			4,591,270	94,050,995
White Oak Plantation	26,041,717	47,580				26,089,297								193,800	26,283,097
Woodrun	17,842,290		18,980			17,861,270	82,301	341,180						423,481	18,284,751
Yorktown	3,544,045					3,544,045								-	3,544,045
Zemosa Acres	11,502,007	36,113	87,915			11,626,035		102,700						102,700	11,728,735

TC/BF/FH/Silverton Water

Service Area	5/8 R	3/4 R	1 R	1.5 R	2 R	Residential	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6 C	COMMERCIAL	Total
Bradfield Farms	60,187,707	6,124,375	-			66,312,082	164,470	206,236						370,706	66,682,788
Fairfield Harbor	71,686,604	91,650	77,330			71,855,584	1,120,320	51,440	374,574	163,407				1,709,741	73,565,325
Treasure Cove	17,011,133	40,880	51,600		109,100	17,212,713								-	17,212,713
Silverton	3,814,660					3,814,660								-	3,814,660
Total	152,700,104	6,256,905	128,930	-	109,100	159,195,039	1,284,790	257,676	374,574	163,407	-	-	-	2,080,447	161,275,486

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 7
Page 1 of 2

Billing Analysis for Consumption

CWSNC Sewer

Service Area	5/8 R	1 R	1.5R	2 R	Total								Total Commercial	Grand Total
					Residential	5/8 C	1 C	1.5 C	2 C	3 C	4 C	6C		
Abington/Kynwood	29,020,099	-		-	29,020,099	412,340	-	-	-	-	-		412,340	29,432,439
Ashley Hills	56,146,184				56,146,184								-	56,146,184
Bear Paw	715,520				715,520	26,200							26,200	741,720
Belvedere Plantation	31,576,826	204,020			31,780,846	6,470			1,939,714	5,327,607			7,273,791	39,054,637
Bent Creek	11,695,873				11,695,873								-	11,695,873
Brandywine Bay	27,936,734	94,030		150,900	28,181,664	79,860							79,860	28,261,524
Carolina Pines	-				-	153,933							153,933	153,933
Lamplight/Danby/Wdsd Falls	63,677,848	146,130			63,823,978	19,185,090		409,000	1,097,600				20,691,690	84,515,668
Hestron Park	-				-	35,930		679,700	3,281,267				3,996,897	3,996,897
Hounds Ear	3,650,938	27,419			3,678,357	266,560	59		455,103				721,722	4,400,079
Independ/Hemby Acres/Beacon	-				-								-	-
Kings Grant - Raleigh	-				-								-	-
Mt. Carmel/Lees Ridge													-	-
Nero	5,733,951				5,733,951								-	5,733,951
Olde Point	3,631,619	61,950			3,693,569				738,800				738,800	4,432,369
Queen's Harbor	4,218,360				4,218,360	58,540	2,932,880				935,270		3,926,690	8,145,050
Ridges at Mountain harbour					-	258,840			218,600				477,440	477,440
Riverpointe	14,072,170	37,370			14,109,540	93,850		1,124,350					1,218,200	15,327,740
Saddlewood	781,090				781,090								-	781,090
Sugar Mountain	15,344,538	71,800			15,416,338	1,560,139	291,172	1,256,300	7,962,509				11,070,120	26,486,458
Willowbrook	5,524,699				5,524,699								-	5,524,699
Wolf Laurel	903,540				903,540				358,604				358,604	1,262,144
Regalwood	-				-								-	-
White Oak Estates	-				-								-	-
White oak High School	-				-								-	-
Child Daycare	-				-								-	-
Uniform	274,629,989	642,719	-	150,900	275,423,608	22,137,752	3,224,111	3,469,350	16,052,197	5,327,607	935,270	-	51,146,287	326,569,895

7/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 360
For the 12 Months Ending December 31, 2017

Casselberry
Exhibit No. 7
Page 2 of 2

Billing Analysis for Consumption

CWSNC Sewer

Service Area	5/8 R	1 R	2 R	Total		5/8 C	1 C	1.5 C	2 C	3 C	4C	6C	Total	Grand
				Residential									Commercial	Total
Carolina Trace	60,563,734	96,220		10,000	60,669,954	1,351,720	60,850	570,000					1,982,570	62,652,524
Conestee Falls	25,471,386				25,471,386	136,000			1,172,056				1,308,056	26,779,442
Nags Head					-	956,600	2,932,880	1,124,350	3,542,700			5,037,998	13,594,528	13,594,528
Elk River	2,018,573	54,403			2,072,976	73,890	507,577		468,607				1,050,074	3,123,050
Sapphire Valley	13,334,157	316,043	4,204,519	1,861,391	19,716,110	1,379,780	796,924	1,272,064	1,350,287	1,329,527			6,128,582	25,844,692
Total Uniform	376,017,839	1,109,385	4,204,519	2,022,291	383,354,034	26,035,742	7,522,342	6,435,764	22,585,847	6,657,134	935,270	5,037,998	75,210,097	458,564,131
Purchased Sewer														
White Oak Plantation	21,287,437				21,287,437								-	21,287,437
College Park	2,380,496				2,380,496								-	2,380,496
Kings Grant	8,157,700	191,540			8,349,240								-	8,349,240
Mt Carmel	12,373,183				12,373,183									
CL/MS	42,481,350	9,724,907			52,206,257	6,202,979	3,105,710	680,757	501,007	68,000			10,558,453	62,764,710
Fairfield Mountain Comm														
LG	159,880													
MED	2,575,390													
SM	210,600													

BF/FH/Silverton Sewer

Service Area	5/8 R	1 R	1.5R	2 R	Total		5/8 C	1 C	1.5 C	2 C	3 C	4 C	6C	Total	Grand
					Residential									Commercial	Total
Bradfield Farms					-			170,286						170,286	170,286
Fairfield Harbour		-			-	952,000			374,574	7				1,326,581	1,326,581
Total	-	-	-	-	-	952,000		170,286	374,574	7	-	-	-	1,496,867	1,496,867

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 8
Page 1 of 7

Public Staff's Revenue at Present Rates

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
New Metered Residential (1)								
5/8" Residential Metered (2)	1,428,480	7.08	10,114	62	744	27.53	20,482	30,596
5/8" Residential Metered (3)	8,040,960	7.08	56,930	349	4,188	27.53	115,296	172,226
Total New Metered Resid.	9,469,440		67,044	411	4,932		135,778	202,822
Flat Residential								
	-		-	16	192	53.58	10,287	10,287
Metered Residential								
5/8" Residential Metered	882,909,098	7.08	6,250,996	20,660	247,920	27.53	6,825,238	13,076,234
3/4" Residential Metered	9,980,113	7.08	70,659	321	3,852	27.53	106,046	176,705
1" Residential Metered	4,787,324	7.08	33,894	64	768	68.83	52,858	86,752
1.5" Residential Metered	4,673,119	7.08	33,086	35	420	137.65	57,813	90,899
2" Residential Metered	5,919,240	7.08	41,908	36	432	220.24	95,144	137,052
Irrigation	(497,490)	7.08	(3,522)	-	-	-	-	(3,522)
Total Residential Metered	907,771,404		6,427,022	21,116	253,392		7,137,097	13,564,119
Metered Commercial								
5/8" Commercial Metered	12,953,741	7.08	91,712	287	3,444	27.53	94,813	186,526
1" Commercial Metered	7,848,917	7.08	55,570	44	528	68.83	36,340	91,910
1.5" Commercial Metered	7,704,654	7.08	54,549	26	312	137.65	42,947	97,496
2" Commercial Metered	23,524,139	7.08	166,551	83	996	220.24	219,359	385,910
3" Commercial Metered	7,196,449	7.08	50,951	6	72	412.95	29,732	80,683

7/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 8
Page 2 of 7

Public Staff's Revenue at Present Rates

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
4" Commercial Metered	935,270	7.08	6,622	1	12	688.25	8,259	14,881
6" Commercial Metered	3,899,200	7.08	27,606	2	24	1,376.50	33,036	60,642
Total Commercial Metered	64,062,370		453,562	449	5,388		464,486	918,048
Irrigation	497,490	4.11	2,045	-	-	-	-	2,045
Availability								
Linville Ridge (monthly)	-		-	48	576	12.35	7,114	7,114
Sapphire Valley (monthly)				734	8,808	9.10	80,153	80,153
Connestee (monthly)				427	5,124	4.80	24,595	24,595
Total Uniform	981,800,704		6,949,671	23,201	278,412		7,859,511	14,809,182

Purchased water

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	61,635,224	2.21	136,214	1,610	19,320	27.53	531,880	668,093
1" Residential Metered	96,220	2.21	213	1	12	68.83	826	1,039
2" Residential Metered	10,000	2.21	22	1	12	220.24	2,643	2,665
Total	61,741,444		136,449	1,612		317	535,348	671,797

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 8
Page 3 of 7

Public Staff's Revenue at Present Rates

Purchased water

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Commercial Metered	1,667,530	2.21	3,685	26	312	27.53	8,589	12,275
1" Commercial Metered	60,850	2.21	134	1	12	68.83	826	960
1.5" Commercial Metered	570,000	2.21	1,260	1	12	137.65	1,652	2,912
2" Commercial Metered	1,861,400	2.21	4,114	2	24	220.24	5,286	9,399
Total	4,159,780		9,193	30	360		16,353	25,546
Total	65,901,224		145,642	1,642	360		551,701	697,343

Carolina Forest

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	6,466,328	3.19	20,628	209	2,508	27.53	69,045	89,673
1" Residential Metered	9,490	3.19	30	1	12	68.83	826	856
Total	6,475,818		20,658	210	2,520		69,871	90,529
5/8" Commercial Metered	15,679	3.19	50	4	48	27.53	1,321	1,371
1" Commercial Metered	81,625	3.19	260	1	12	68.83	826	1,086
1.5" Commercial Metered	87,000	3.19	278	1	12	137.65	1,652	1,929
Total	184,304		588	6	72		3,799	4,387
Availability bi-annual			-	1,354	2,708	24.65	66,752	66,752
Total	6,660,122		21,246	1,570	5,300		140,422	161,668

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 8
Page 4 of 7

Public Staff's Revenue at Present Rates

High Vista Estates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	10,611,338	3.25	34,487	234	2,808	27.53	77,304	111,791
1" Residential Metered	69,420	3.25	226	1	12	68.83	826	1,052
Total	10,680,758		34,712	235	2,820		78,130	112,843
5/8" Commercial Metered	343,860	3.25	1,118	3	36	27.53	991	2,109
2" Commercial Metered	295,900	3.25	962	1	12	220.24	2,643	3,605
Total	639,760		2,079	4	48		3,634	5,713
Total	11,320,518		36,792	239	2,868		81,764	118,556

Riverpointe

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	14,072,170	6.30	88,655	190	2,280	27.53	62,768	151,423
1" Residential Metered	117,690	6.30	741	2	24	68.83	1,652	2,393
Total	14,189,860		89,396	192	2,304		64,420	153,816
5/8" Commercial Metered	711,550	6.30	4,483	5	60	27.53	1,652	6,135
Total	14,901,410		93,879	197	2,364		66,072	159,951

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 8
Page 5 of 7

Public Staff's Revenue at Present Rates

Whispering Pines

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	88,137,041	2.23	196,546	1,578	18,936	27.53	521,308	717,854
1" Residential Metered	1,322,684	2.23	2,950	15	180	68.83	12,389	15,338
Total	89,459,725		199,495	1,593	19,116		533,697	733,192
5/8" Commercial Metered	1,093,600	2.23	2,439	28	336	27.53	9,250	11,689
1" Commercial Metered	2,480,250	2.23	5,531	7	84	68.83	5,781	11,312
1.5" Commercial Metered	578,400	2.23	1,290	5	60	137.65	8,259	9,549
2" Commercial Metered	438,500	2.23	978	1	12	220.24	2,643	3,621
4" Commercial Metered	520	2.23	1	1	12	688.25	8,259	8,260
Total	4,591,270		10,239	42	504		34,192	44,431
Total	94,050,995		209,734	1,635	19,620		567,889	777,623

**White Oak Planation/Lee
Forest/Winston
Planation/Winston Point**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	26,041,717	2.40	62,500	590	7,080	27.53	194,912	257,413
3/4" Residential Metered	47,580	2.40	114	1	12	27.53	330	445
Total	26,089,297		62,614	591	7,092		195,243	257,857

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 8
Page 6 of 7

Public Staff's Revenue at Present Rates

**White Oak Planation/Lee
Forest/Winston
Planation/Winston Point**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
1.5" Commercial Metered	193,800	2.40	465	1	12	137.65	1,652	2,117
Total	26,283,097		63,079	592	7,104		196,895	259,974

Yorktown

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	3,544,045	5.01	17,756	106	1,272	27.53	35,018	52,774

Woodrun

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	17,842,290	3.19	56,917	463	5,556	27.53	152,957	209,874
1" Residential Metered	18,980	3.19	61	1	12	68.83	826	886
Total	17,861,270		56,977	464	5,568		153,783	210,760
5/8" Commercial Metered	82,301	3.19	263	4	48	27.53	1,321	1,584
1" Commercial Metered	341,180	3.19	1,088	1	12	68.83	826	1,914
Total	423,481		1,351	5	60		2,147	3,498
Total	18,284,751		58,328	469	5,628		155,930	214,258

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 8
Page 7 of 7

Public Staff's Revenue at Present Rates

Zemosa Acres

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	11,502,007	5.27	60,616	243	2,916	27.53	80,277	140,893
3/4" Residential Metered	36,113	5.27	190	1	12	27.53	330	521
1" Residential Metered	87,915	5.27	463	3	36	68.83	2,478	2,941
Total	11,626,035		61,269	247	2,964		83,086	144,355
1" Commercial Metered	102,700	5.27	541	1	12	68.83	826	1,367
Total	11,728,735		61,810	248	2,976		83,911	145,722

Riverbend

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	5,872,416	7.20	42,281	141	1,692	27.53	46,581	88,862
TOTAL	1,240,348,017		7,700,219	30,040	327,596		9,785,694	17,485,912

Notes

- 1 Estimated consumption 1,920 gallons per EOP customer per month
- 2 The Ridges at Mountain Harbour
- 3 Linville Ridge
- 4 Availability customers in Woodrun included with Carolina Forest availability customers

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 9
Page 1 of 4

Public Staff's Revenue at Present Rates

CWSNC Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat, Sewer		-	-	2,074	24,888	57.82	1,439,024	1,439,024
5/8" Res Metered	376,017,839	3.62	1,361,185	10,347	124,164	46.31	5,750,035	7,111,219
1" Res Metered	1,109,385	3.62	4,016	26	312	46.31	14,449	18,465
1.5" Res Metered	4,204,519	3.62	15,220	-	-	46.31	-	15,220
2" Res Metered	2,022,291	3.62	7,321	2	24	46.31	1,111	8,432
Total	383,354,034		1,387,742	10,375	124,500		5,765,595	7,153,337
Multi-unit Flat rate		-	-	68	816	57.82	47,182	47,182
Commercial								
5/8" Commercial Metered	26,035,742	3.62	94,249	442	5,304	46.31	245,628	339,878
1" Commercial Metered	7,522,342	3.62	27,231	29	348	115.78	40,290	67,521
1.5" Commercial Metered	6,435,764	3.62	23,297	65	780	231.55	180,609	203,906
2" Commercial Metered	22,585,847	3.62	81,761	56	672	370.48	248,963	330,723
3" Commercial Metered	6,657,134	3.62	24,099	4	48	694.65	33,343	57,442
4" Commercial Metered	935,270	3.62	3,386	1	12	1,157.75	13,893	17,279
6" Commercial Metered	5,037,998	3.62	18,238	3	36	2,315.50	83,358	101,596
Total	75,210,097		272,261	600	7,200		846,084	1,118,344
Regalwood/White Oaks	-		-	1,041	12,492	57.82	722,287	722,287
White Oaks School	-		-	1	12	1,799.66	21,596	21,596

5/10

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 9
Page 2 of 4

Public Staff's Revenue at Present Rates

Billing Type	Usage	Usage Rate	Usage Revenue	Customers	Monthly Rate x 12	Base Charge	Base Charge Revenue	Total Revenue
Child Castle Daycare	-		-	1	12	223.58	2,683	2,683
Availability Conneetee	-	-	-	218	2,616	4.70	12,295	12,295
Availability Sapphire Valley				87	1,044	8.30	8,665	8,665
Total	458,564,131		1,660,002	14,465	173,580		8,865,412	10,525,414

Purchased Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Mount Carmel	12,373,183	5.88	72,754	392	4,704	38.40	180,634	253,388
College Park								
Residential Flat, Sewer only	-	-	-	1	12	57.82	694	694
5/8" Residential Metered	2,380,496	5.70	13,569	50	600	31.63	18,978	32,547
Total	2,380,496		-	51	612		19,672	33,241
Kings Grant								
5/8" Residential Metered	8,157,700	3.80	30,999	177	2,124	31.63	67,182	98,181
1" Res Metered	191,540	3.80	728	1	12	31.63	380	1,107
Total	8,349,240		31,727	178	2,136		67,562	99,289
White Oak Plantation/Lee Forest/Winston Pointe								
5/8" Residential Metered	21,287,437	5.06	107,714	499	5,988	31.63	189,400	297,115

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 9
Page 3 of 4

Public Staff's Revenue at Present Rates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Fairfield Mountain								
5/8" Res. Collection/Treatm.	-		-	405	4,860	101.13	491,492	491,492
1" Res Collection/Treatm.	-		-	12	144	101.13	14,563	14,563
Residential Collection	-		-	417	5,004		506,055	506,055
ww only fit	-	13.93	-	2	24	101.13	2,427	2,427
Small Commercial	210,600	13.93	2,933.66	4	48	78.50	3,768	6,702
Medium Commercial	2,575,390	13.93	35,875.18	18	216	139.50	30,132	66,007
Large Commercial	159,880	13.93	2,227.13	1	12	219.50	2,634	4,861
Nonresidential Metered	2,945,870		41,035.97	25.00	300.00		38,961.12	79,997.09
Total	2,945,870		41,036	442	5,304		545,016	586,052

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
The Ridges at Mountain Harbour								
5/8" Res Collection/Treatm			-	46	552	50.05	27,628	27,628
5/8" Comm Collection/Treatm			-	1	12	50.05	601	601
2" Comm Collection/Treatm			-	1	12	178.99	2,148	2,148
Total				48	576		30,376	30,376

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 9
Page 4 of 4

Public Staff's Revenue at Present Rates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
CL/MS								
5/8" Residential Sewer	42,481,350	6.62	281,227	782	9,384	52.06	488,531	769,758
1" Residential Sewer	9,724,907	6.62	64,379	87	1,044	130.15	135,877	200,255
5/8" Commercial Sewer	6,202,979	6.62	41,064	67	804	52.06	41,856	82,920
1" Commercial Sewer	3,105,710	6.62	20,560	19	228	130.15	29,674	50,234
1.5" Commercial Sewer	680,757	6.62	4,507	2	24	260.31	6,247	10,754
2" Commercial Sewer	501,007	6.62	3,317	2	24	416.49	9,996	13,312
3" Commercial Sewer	68,000	6.62	450	1	12	780.92	9,371	9,821
Total	62,764,710		415,502	960	11,520		721,552	1,137,055
TOTAL	568,665,067		2,328,736	17,035	204,420		10,619,624	12,961,929

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364

For the 12 Months March 31, 2019

Casselberry

Exhibit No. 10

Page 1 of 1

Public Staff's Revenue at Present Rates

WATER

Treasure Cove/Bradfield Farms/Fairfield Harbour/Silverton

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	152,700,104	3.75	572,625	3,111	37,332	16.74	624,938	1,197,563
3/4" Residential Metered	6,256,905	3.75	23,463	100	1,200	16.74	20,088	43,551
1" Residential Metered	128,930	3.75	483	1	12	41.85	502	986
2" Residential Metered	109,100	3.75	409	1	12	133.92	1,607	2,016
Total Residential Metered	159,195,039		596,981	3,213	38,556		647,135	1,244,116
5/8" Commercial Metered	1,284,790	3.75	4,818	23	276	16.74	4,620	9,438
1" Commercial Metered	257,676	3.75	966	6	72	41.85	3,013	3,979
1.5" Commercial Metered	374,574	3.75	1,405	2	24	83.70	2,009	3,413
2" Commercial Metered	163,407	3.75	613	3	36	133.92	4,821	5,434
Total Commercial Metered	2,080,447		7,802	34	408		14,463	22,265
Availability				969	11,628	3.28	38,140	38,140
Total	161,275,486		604,783	4,216	50,592		699,738	1,304,521

2/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 11
Page 1 of 1

Public Staff's Revenue at Present Rates

**Sewer
Fairfield Harbour/Bradfield Farms/Silverton**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat				165	1,980	50.46	99,911	99,911
5/8" Residential Flat (5/8" meters)				2,828	33,936	50.46	1,712,411	1,712,411
Bulk Sewer				386	4,632	50.46	233,731	233,731
Total Residential				3,379	40,548		2,046,052	2,046,052
5/8" Commercial Metered	952,000	1.43	1,361	16	192	44.58	8,559	9,921
1" Commercial Metered	170,286	1.43	244	2	24	111.45	2,675	2,918
1.5" Commercial Metered	374,574	1.43	536	2	24	222.90	5,350	5,885
2" Commercial Metered	7	1.43	0	1	12	356.64	4,280	4,280
Total Commercial	1,496,867		2,141	21	252		20,863	23,004
Total				3,400	40,800		2,066,916	2,069,056
Availability				969	11,628	2.65	30,814	30,814
Total				4,369	52,428		2,097,730	2,099,870

2/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 1 of 8

Public Staff's Revenue at Proposed rates

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
New Metered Residential (1)								
5/8" Residential Metered (2)	1,428,480	8.82	12,599	62	744	29.81	22,179	34,778
5/8" Residential Metered (3)	8,040,960	8.82	70,921	349	4,188	29.81	124,844	195,766
Total New Metered Resid.	9,469,440		83,520	411	4,932		147,023	230,543
Flat Residential	-		-	16	192	61.96	11,896	11,896
Metered Residential								
5/8" Residential Metered	689,605,063	8.82	6,082,317	19,141	229,692	29.81	6,847,119	12,929,435
3/4" Residential Metered	9,980,113	8.82	88,025	321	3,852	29.81	114,828	202,853
1" Residential Metered	4,787,324	8.82	42,224	64	768	74.53	57,235	99,459
1.5" Residential Metered	4,673,119	8.82	41,217	35	420	149.05	62,601	103,818
2" Residential Metered	5,919,240	8.82	52,208	36	432	238.48	103,023	155,231
Irrigation	(497,490)	8.82	(4,388)	-	-	-	-	(4,388)
Total Residential Metered	714,467,369		6,301,602	19,597	235,164		7,184,806	13,486,408
Metered Commercial								
5/8" Commercial Metered	12,953,741	8.82	114,252	287	3,444	29.81	102,666	216,918
1" Commercial Metered	7,848,917	8.82	69,227	44	528	74.53	39,349	108,577
1.5" Commercial Metered	7,704,654	8.82	67,955	26	312	149.05	46,504	114,459
2" Commercial Metered	23,524,139	8.82	207,483	83	996	238.48	237,526	445,009
3" Commercial Metered	7,196,449	8.82	63,473	6	72	447.15	32,195	95,667

1/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 2 of 8

Public Staff's Revenue at Proposed rates

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
4" Commercial Metered	935,270	8.82	8,249	1	12	745.25	8,943	17,192
6" Commercial Metered	3,899,200	8.82	34,391	2	24	1,490.50	35,772	70,163
Total Commercial Metered	64,062,370		565,030	449	5,388		502,954	1,067,984
Irrigation	497,490	5.12	2,547	-	-	-	-	2,547
Availability								
Linville Ridge (monthly)	-		-	48	576	12.35	7,114	7,114
Sapphire Valley (monthly)				734	8,808	9.10	80,153	80,153
Connetsee (monthly)				427	5,124	4.80	24,595	24,595
Total Uniform	788,496,669		6,952,700	21,682	260,184		7,958,541	14,911,241

The Point Pilot

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	-		-	1,519	18,228	23.85	434,738	434,738
Block 1 0 - 5,000	76,171,566	7.06	537,771	-	-	-	-	537,771
Block 2 5001 18,000	71,402,484	11.03	787,569	-	-	-	-	787,569
Block 3 18,000 +	45,729,985	14.71	672,688	-	-	-	-	672,688
Total	193,304,035		1,998,029	1,519	18,228		434,738	2,432,767

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 3 of 8

Public Staff's Revenue at Proposed rates

Purchased water

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	61,635,224	2.21	136,214	1,610	19,320	29.81	575,929	712,143
1" Residential Metered	96,220	2.21	213	1	12	74.53	894	1,107
2" Residential Metered	10,000	2.21	22	1	12	238.48	2,862	2,884
Total	61,741,444		136,449	1,612		343	579,685	716,134

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Commercial Metered	1,667,530	2.21	3,685	26	312	29.81	9,301	12,986
1" Commercial Metered	60,850	2.21	134	1	12	74.53	894	1,029
1.5" Commercial Metered	570,000	2.21	1,260	1	12	149.05	1,789	3,048
2" Commercial Metered	1,861,400	2.21	4,114	2	24	238.48	5,724	9,837
Total	4,159,780		9,193	30	360		17,707	26,900
Total	65,901,224		145,642	1,642	360		597,392	743,034

Carolina Forest

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	6,466,328	3.19	20,628	209	2,508	29.81	74,763	95,391
1" Residential Metered	9,490	3.19	30	1	12	74.53	894	925
Total	6,475,818		20,658	210	2,520		75,658	96,316

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 4 of 8

Public Staff's Revenue at Proposed rates

Carolina Forest

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Commercial Metered	15,679	3.19	50	4	48	29.81	1,431	1,481
1" Commercial Metered	81,625	3.19	260	1	12	74.53	894	1,155
1.5" Commercial Metered	87,000	3.19	278	1	12	149.05	1,789	2,066
Total	184,304		588	6	72		4,114	4,702
Availability bi-annual			-	1,354	2,708	24.65	66,752	66,752
Total	6,660,122		21,246	1,570	5,300		146,524	167,770

High Vista Estates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	10,611,338	3.43	36,397	234	2,808	29.81	83,706	120,103
1" Residential Metered	69,420	3.43	238	1	12	74.53	894	1,132
Total	10,680,758		36,635	235	2,820		84,601	121,236
5/8" Commercial Metered	343,860	3.43	1,179	3	36	29.81	1,073	2,253
2" Commercial Metered	295,900	3.43	1,015	1	12	238.48	2,862	3,877
Total	639,760		2,194	4	48		3,935	6,129
Total	11,320,518		38,829	239	2,868		88,536	127,365

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 5 of 8

Public Staff's Revenue at Proposed rates

Riverpointe

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	14,072,170	6.48	91,188	190	2,280	29.81	67,967	159,154
1" Residential Metered	117,690	6.48	763	2	24	74.53	1,789	2,551
Total	14,189,860		91,950	192	2,304		69,755	161,706
5/8" Commercial Metered	711,550	6.48	4,611	5	60	29.81	1,789	6,399
Total	14,901,410		96,561	197	2,364		71,544	168,105

Whispering Pines

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	88,137,041	2.23	196,546	1,578	18,936	29.81	564,482	761,028
1" Residential Metered	1,322,684	2.23	2,950	15	180	74.53	13,415	16,364
Total	89,459,725		199,495	1,593	19,116		577,897	777,392
5/8" Commercial Metered	1,093,600	2.23	2,439	28	336	29.81	10,016	12,455
1" Commercial Metered	2,480,250	2.23	5,531	7	84	74.53	6,260	11,791
1.5" Commercial Metered	578,400	2.23	1,290	5	60	149.05	8,943	10,233
2" Commercial Metered	438,500	2.23	978	1	12	238.48	2,862	3,840
4" Commercial Metered	520	2.23	1	1	12	745.25	8,943	8,944
Total	4,591,270		10,239	42	504		37,024	47,263
Total	94,050,995		209,734	1,635	19,620		614,921	824,654

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 6 of 8

Public Staff's Revenue at Proposed rates

**White Oak Planation/Lee
Forest/Winston
Planation/Winston Point**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	26,041,717	2.65	69,011	590	7,080	29.81	211,055	280,065
3/4" Residential Metered	47,580	2.65	126	1	12	29.81	358	484
Total	26,089,297		69,137	591	7,092		211,413	280,549
1.5" Commercial Metered	193,800	2.65	514	1	12	149.05	1,789	2,302
Total	26,283,097		69,650	592	7,104		213,201	282,851

Yorktown

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	3,544,045	5.19	18,394	106	1,272	29.81	37,918	56,312

Woodrun

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	17,842,290	3.19	56,917	463	5,556	29.81	165,624	222,541
1" Residential Metered	18,980	3.19	61	1	12	74.53	894	955
Total	17,861,270		56,977	464	5,568		166,519	223,496

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 7 of 8

Public Staff's Revenue at Proposed rates

Woodrun

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Commercial Metered	82,301	3.19	263	4	48	29.81	1,431	1,693
1" Commercial Metered	341,180	3.19	1,088	1	12	74.53	894	1,983
Total	423,481		1,351	5	60		2,325	3,676
Total	18,284,751		58,328	469	5,628		168,844	227,172

Zemosa Acres

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	11,502,007	5.27	60,616	243	2,916	29.81	86,926	147,542
3/4" Residential Metered	36,113	5.27	190	1	12	29.81	358	548
1" Residential Metered	87,915	5.27	463	3	36	74.53	2,683	3,146
Total	11,626,035		61,269	247	2,964		89,967	151,236
1" Commercial Metered	102,700	5.27	541	1	12	74.53	894	1,436
Total	11,728,735		61,810	248	2,976		90,861	152,671

Riverbend

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	5,872,416	7.20	42,281	141	1,692	29.81	50,439	92,720

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 12
Page 8 of 8

Public Staff's Revenue at Proposed rates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
TOTAL	1,240,348,017		9,713,204	30,040	327,596		10,473,458	20,186,663

Notes

- 1 Estimated consumption 1,920 gallons per EOP customer per month
- 2 The Ridges at Mountain Harbour
- 3 Linville Ridge
- 4 Availability customers in Woodrun included with Carolina Forest availability customers

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 13
Page 1 of 4

Public Staff's Revenue at Proposed Rates

CWSNC Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat, Sewer		-	-	2,074	24,888	79.46	1,977,600	1,977,600
5/8" Res Metered	376,017,839	5.80	2,180,903	10,347	124,164	59.67	7,408,866	9,589,769
1" Res Metered	1,109,385	5.80	6,434	26	312	59.67	18,617	25,051
1.5" Res Metered	4,204,519	5.80	24,386	-	-	59.67	-	24,386
2" Res Metered	2,022,291	5.80	11,729	2	24	59.67	1,432	13,161
Total	383,354,034		2,223,453	10,375	124,500		7,428,915	9,652,368
Multi-unit Flat rate		-	-	68	816	79.46	64,839	64,839
Commercial								
5/8" Commercial Metered	26,035,742	5.80	151,007	442	5,304	59.67	316,490	467,497
1" Commercial Metered	7,522,342	5.80	43,630	29	348	149.18	51,913	95,542
1.5" Commercial Metered	6,435,764	5.80	37,327	65	780	298.35	232,713	270,040
2" Commercial Metered	22,585,847	5.80	130,998	56	672	477.36	320,786	451,784
3" Commercial Metered	6,657,134	5.80	38,611	4	48	895.05	42,962	81,574
4" Commercial Metered	935,270	5.80	5,425	1	12	1,491.75	17,901	23,326
6" Commercial Metered	5,037,998	5.80	29,220	3	36	2,983.50	107,406	136,626
Total	75,210,097		436,219	600	7,200		1,090,171	1,526,389
Regalwood/White Oaks	-		-	1,041	12,492	79.46	992,614	992,614
White Oaks School	-		-	1	12	2,059.25	24,711	24,711

1/18

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 13
Page 2 of 4

Public Staff's Revenue at Proposed Rates

Billing Type	Usage	Usage Rate	Usage Revenue	Customers	Monthly Rate x 12	Base Charge	Base Charge Revenue	Total Revenue
Child Castle Daycare	-	-	-	1	12	255.83	3,070	3,070
Availability Conneetee	-	-	-	218	2,616	4.70	12,295	12,295
Availability Sapphire Valley				87	1,044	8.30	8,665	8,665
Total	458,564,131		2,659,672	14,465	173,580		11,602,881	14,262,553

Purchased Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Mount Carmel	12,373,183	6.16	76,219	392	4,704	47.89	225,275	301,493
College Park								
Residential Flat, Sewer only	-	-	-	1	12	79.46	954	954
5/8" Residential Metered	2,380,496	5.70	13,569	50	600	40.78	24,468	38,037
Total	2,380,496		-	51	612		25,422	38,990
Kings Grant								
5/8" Residential Metered	8,157,700	3.98	32,468	177	2,124	40.78	86,617	119,084
1" Res Metered	191,540	3.98	762	1	12	40.78	489	1,252
Total	8,349,240		33,230	178	2,136		87,106	120,336
White Oak Plantation/Lee Forest/Winston Pointe								
5/8" Residential Metered	21,287,437	5.57	118,571	499	5,988	40.78	244,191	362,762

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 13
Page 3 of 4

Public Staff's Revenue at Proposed Rates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Fairfield Mountain								
5/8" Res. Collection/Treatm.	-		-	405	4,860	110.28	535,961	535,961
1" Res Collection/Treatm.	-		-	12	144	110.28	15,880	15,880
Residential Collection	-		-	417	5,004		551,841	551,841
ww only flt	-	13.93	-	2	24	110.28	2,647	2,647
Small Commercial	210,600	13.93	2,933.66	4	48	78.50	3,768	6,702
Medium Commercial	2,575,390	13.93	35,875.18	18	216	139.50	30,132	66,007
Large Commercial	159,880	13.93	2,227.13	1	12	219.50	2,634	4,861
Nonresidential Metered	2,945,870		41,035.97	25.00	300.00		39,180.72	80,216.69
Total	2,945,870		41,036	442	5,304		591,022	632,058

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
The Ridges at Mountain Harbour								
5/8" Res Collection/Treatm			-	46	552	59.20	32,678	32,678
5/8" Comm Collection/Treatm			-	1	12	59.20	710	710
2" Comm Collection/Treatm.			-	1	12	188.14	2,258	2,258
Total				48	576		35,646	35,646

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 13
Page 4 of 4

Public Staff's Revenue at Proposed Rates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
CL/MS								
5/8" Residential Sewer	42,481,350	5.80	246,392	782	9,384	59.67	559,943	806,335
1" Residential Sewer	9,724,907	5.80	56,404	87	1,044	149.18	155,739	212,143
5/8" Commercial Sewer	6,202,979	5.80	35,977	67	804	59.67	47,975	83,952
1" Commercial Sewer	3,105,710	5.80	18,013	19	228	149.18	34,012	52,025
1.5" Commercial Sewer	680,757	5.80	3,948	2	24	298.35	7,160	11,109
2" Commercial Sewer	501,007	5.80	2,906	2	24	477.36	11,457	14,362
3" Commercial Sewer	68,000	5.80	394	1	12	895.05	10,741	11,135
Total	62,764,710		364,035	960	11,520		827,026	1,191,062
TOTAL	568,665,067		3,292,763	17,035	204,420		13,638,569	16,944,901

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months March 31, 2019

Casselberry
Exhibit No. 14
Page 1 of 1

Public Staff's Revenue at Proposed Rates

WATER

Treasure Cove/Bradfield Farms/Fairfield Harbour/Silverton

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	152,700,104	4.45	679,515	3,111	37,332	18.67	696,988	1,376,504
3/4" Residential Metered	6,256,905	4.45	27,843	100	1,200	18.67	22,404	50,247
1" Residential Metered	128,930	4.45	574	1	12	46.68	560	1,134
2" Residential Metered	109,100	4.45	485	1	12	149.36	1,792	2,278
Total Residential Metered	159,195,039		708,418	3,213	38,556		721,745	1,430,163
5/8" Commercial Metered	1,284,790	4.45	5,717	23	276	18.67	5,153	10,870
1" Commercial Metered	257,676	4.45	1,147	6	72	46.68	3,361	4,508
1.5" Commercial Metered	374,574	4.45	1,667	2	24	93.35	2,240	3,907
2" Commercial Metered	163,407	4.45	727	3	36	149.36	5,377	6,104
Total Commercial Metered	2,080,447		9,258	34	408		16,131	25,389
Availability				969	11,628	3.28	38,140	38,140
Total	161,275,486		717,676	4,216	50,592		776,016	1,493,692

1/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 15
Page 1 of 1

Public Staff's Revenue at Proposed Rates

Sewer

Fairfield Harbour/Bradfield Farms/Silverton

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat				165	1,980	55.66	110,207	110,207
5/8" Residential Flat (meteres)				2,828	33,936	55.66	1,888,878	1,888,878
Bulk Sewer				386	4,632	55.66	257,817	257,817
Total Residential				3,379	40,548		2,256,902	2,256,902
5/8" Commercial Metered	952,000	1.73	1,647	16	192	49.17	9,441	11,088
1" Commercial Metered	170,286	1.73	295	2	24	122.94	2,951	3,245
1.5" Commercial Metered	374,574	1.73	648	2	24	245.87	5,901	6,549
2" Commercial Metered	7	1.73	0	1	12	393.39	4,721	4,721
Total Commercial	1,496,867		2,590	21	252		23,013	25,602
Total				3,400	40,800		2,279,914	2,282,504
Availability				969	11,628	2.65	30,814	30,814
Total				4,369	52,428		2,310,729	2,313,318

1/11

AVERAGE CONSUMPTION

CWSNC Water Sub 356 Test year 2016
Consolidated Rate Case

Service Area	Total Residential	EOP Customers	EOP Annual	Average Usage
Abington/Kylwood	30,419,686	596	7,152	4,253
Bahia Bay	5,407,176	117	1,404	3,851
Bear Paw	5,241,452	339	4,068	1,288
Beechbrook	1,840,830	37	444	4,146
Belvedere Plantation	61,221,867	1,175	14,100	4,342
Bent Creek	13,214,273	306	3,672	3,599
Brandywine Bay	33,333,247	841	10,092	3,303
Buffalo Creek	12,216,260	274	3,288	3,715
Chapel Hill	3,358,047	96	1,152	2,915
College Park	3,860,650	79	948	4,072
Country Club Annex	1,111,270	24	288	3,859
Country Hills	4,160,861	67	804	5,175
Crestview	1,093,640	38	456	2,398
Crystal Mountain	800,476	49	588	1,361
Lamplight/Danby/Wdsd Fall	71,402,841	1,279	15,348	4,652
Eagle Crossing	3,859,800	78	936	4,124
Eastgate				
Eastwood Forest	5,807,602	131	1,572	3,694
Forest Brook/Ole lamp Place	6,808,484	126	1,512	4,503
Grandview at T-Square	3,367,590	74	888	3,792
Harbor House Estates	2,577,240	62	744	3,464
Heathfield	8,209,536	63	756	10,859
Hestron Park				
High Meadows	6,836,542	274	3,288	2,079
Holly Acres	2,623,750	53	636	4,125
Hounds Ear	10,842,560	424	5,088	2,131
Huntington Forest	2,955,022	56	672	4,397
Kings Grant	8,254,320	178	2,136	3,864
Larkhaven	8,613,440	165	1,980	4,350
Lemmond Acres	2,158,080	32	384	5,620
Linville Ridge				
Mason Landing	344,450	11	132	2,609
Meadow Glen	1,676,930	33	396	4,235
Misty Mountain	2,738,194	141	1,692	1,618
Monterey	1,363,710	27	324	4,209
Mt Mitchell	6,005,893	205	2,460	2,441
Nero	6,333,830	125	1,500	4,223
Oakdale terrace	1,956,133	43	516	3,791
Old Lamp Place				

CWSNC Water Sub 360 Test Year 2017
Year 1 After Consolidated

Total Residential	EOP Customers	EOP Annual	Average Usage
29,648,018	591	7,092	4,180
5,388,322	116	1,392	3,871
4,721,400	345	4,140	1,140
1,621,770	37	444	3,653
58,006,038	1,205	14,460	4,011
12,571,364	302	3,624	3,469
33,838,003	850	10,200	3,317
12,096,130	284	3,408	3,549
3,192,297	103	1,236	2,583
3,871,020	80	960	4,032
1,008,180	24	288	3,501
3,674,440	67	804	4,570
1,233,623	39	468	2,636
891,329	48	576	1,547
64,413,850	1,314	15,768	4,085
3,866,720	78	936	4,131
-			
5,944,815	127	1,524	3,901
6,449,143	127	1,524	4,232
3,451,440	75	900	3,835
2,436,790	60	720	3,384
7,203,260	67	804	8,959
-			
6,628,615	274	3,288	2,016
2,449,110	53	636	3,851
9,669,349	430	5,160	1,874
3,052,103	59	708	4,311
8,267,101	181	2,172	3,806
8,976,210	163	1,956	4,589
2,011,360	34	408	4,930
-			
502,790	14	168	2,993
1,816,520	33	396	4,587
2,781,711	141	1,692	1,644
1,372,700	27	324	4,237
5,360,181	204	2,448	2,190
5,695,630	124	1,488	3,828
1,558,190	41	492	3,167
-			

CWSNC Water Year 2018
Year 2 After Consolidated

Total Residential	EOP Customers	EOP Annual	Average Usage
29,647,446	598	7,176	4,131
4,946,592	115	1,380	3,584
5,228,880	347	4,164	1,256
1,552,340	38	456	3,404
62,990,164	1,214	14,568	4,324
11,666,279	322	3,864	3,019
32,712,195	854	10,248	3,192
12,013,400	284	3,408	3,525
3,236,356	95	1,140	2,839
3,904,327	78	936	4,171
1,012,120	23	276	3,667
4,036,718	67	804	5,021
1,074,570	38	456	2,357
910,300	48	576	1,580
65,370,121	1,261	15,132	4,320
3,605,480	77	924	3,902
1,681,420	55	660	2,548
5,728,547	120	1,440	3,978
4,806,162	82	984	4,884
3,696,134	77	924	4,000
1,485,597	29	348	4,269
6,901,847	64	768	8,987
497,480	1	12	41,457
5,443,825	263	3,156	1,725
2,868,791	51	612	4,688
9,751,047	412	4,944	1,972
2,331,218	60	720	3,238
8,474,636	179	2,148	3,945
8,951,310	164	1,968	4,548
1,915,867	33	396	4,838
16,235	1	12	1,353
771,740	14	168	4,594
1,845,480	33	396	4,660
2,541,260	140	1,680	1,513
1,304,540	27	324	4,026
4,763,588	208	2,496	1,908
5,613,715	123	1,476	3,803
1,645,629	41	492	3,345
1,609,413	45	540	2,980

2/1/19

CWSNC Water

AVERAGE CONSUMPTION

CWSNC Water Sub 356 Test year 2016
Consolidated Rate Case

Service Area				
Olde Point	9,110,103	195	2,340	3,893
Pinnacle Shores	11,421,010	154	1,848	6,180
Powder Horn Mountain	4,927,649	230	2,760	1,785
Quail Ridge	8,349,880	170	2,040	4,093
Queen's Harbor	4,342,086	115	1,380	3,146
Red Bird	-	-	-	-
Ridges at Mountain Harbour	-	-	-	-
Riverwood	11,141,360	189	2,268	4,912
Saddlewood	6,430,051	124	1,488	4,321
Sherwood Forest	7,070,274	250	3,000	2,357
Sherwood Park	5,277,550	96	1,152	4,581
Ski Country	-	-	-	-
Ski Mountain	6,128,203	242	2,904	2,110
Stone Hollow	11,034,378	223	2,676	4,123
Suburban Heights	1,357,810	25	300	4,526
Sugar Mountain	20,388,604	1,298	15,576	1,309
Tanglewood Estates	-	-	-	-
Tanglewood South	-	-	-	-
The Point	235,425,319	1,483	17,796	13,229
Vander	12,193,289	251	3,012	4,048
Watauga Vista	3,672,536	139	1,668	2,202
Waterglyn	1,599,030	41	492	3,250
Westwood Forest	5,675,290	119	1,428	3,974
Wildlife Bay	5,796,160	80	960	6,038
Wildwood green	10,691,725	225	2,700	3,960
Willowbrook	6,285,440	166	1,992	3,155
Wolf Laurel	13,675,962	636	7,632	1,792
Wood Trace	2,412,890	45	540	4,468
Skyleaf	694,871	44	528	1,316
Woodhaven Manor	3,385,340	78	936	3,617
Total	750,502,492	14,236	170,832	4,393
Cleanwater	101,289,220	1,953	23,436	4,322
Forest Hill	5,650,985	119	1,428	3,957
Connettee falls	36,125,003	1,356	16,272	2,220
Sapphire Valley	47,923,478	1,591	19,092	2,510
Fairfield Mountain	29,923,599	1,030	12,360	2,421
Total Uniform	971,414,777	20,285	243,420	3,991
Elk River	6,498,574	290	3,480	1,867
Total Uniform	977,913,351	20,575	246,900	3,961

CWSNC Water Sub 360 Test Year 2017
Year 1 After Consolidated

8,693,068	195	2,340	3,715
10,688,380	162	1,944	5,498
4,708,467	230	2,760	1,706
8,497,960	174	2,088	4,070
4,076,820	112	1,344	3,033
-	-	-	-
2,915	-	-	-
10,668,480	195	2,340	4,559
6,085,890	127	1,524	3,993
7,221,525	252	3,024	2,388
5,473,750	96	1,152	4,752
-	-	-	-
6,429,521	245	2,940	2,187
10,829,050	222	2,664	4,065
1,213,348	24	288	4,213
21,275,916	1,423	17,076	1,246
-	-	-	-
193,072,853	1,523	18,276	10,564
12,114,137	258	3,096	3,913
3,031,575	141	1,692	1,792
1,584,450	43	516	3,071
5,433,320	117	1,404	3,870
4,811,120	83	996	4,830
10,977,328	227	2,724	4,030
5,941,530	170	2,040	2,913
13,024,043	643	7,716	1,688
2,358,980	46	552	4,274
-	-	-	-
3,193,180	79	948	3,368
687,077,128	14,504	174,048	3,948
101,557,612	1,969	23,628	4,298
5,333,743	119	1,428	3,735
35,001,080	1,383	16,596	2,109
42,717,038	1,608	19,296	2,214
28,120,900	1,039	12,468	2,255
899,807,501	20,622	247,464	3,636
8,346,141	282	3,384	2,466
908,153,642	20,904	250,848	3,620

CWSNC Water Year 2018
Year 2 After Consolidated

8,285,759	195	2,340	3,541
10,896,383	159	1,908	5,711
4,171,301	231	2,772	1,505
7,936,032	175	2,100	3,779
4,228,230	112	1,344	3,146
-	-	-	-
-	-	-	-
11,114,780	192	2,304	4,824
5,850,551	127	1,524	3,839
6,884,911	255	3,060	2,250
5,857,950	97	1,164	5,033
538,501	65	780	690
6,782,342	231	2,772	2,447
10,765,020	222	2,664	4,041
1,091,066	24	288	3,788
25,381,443	1,376	16,512	1,537
7,024,043	119	1,428	4,919
2,573,620	78	936	2,750
195,652,610	1,531	18,372	10,649
-	-	-	-
4,099,480	138	1,656	2,476
1,614,640	44	528	3,058
5,342,893	121	1,452	3,680
4,658,283	83	996	4,677
10,562,563	226	2,712	3,895
5,700,399	165	1,980	2,879
14,373,318	646	7,752	1,854
2,233,530	46	552	4,046
-	-	-	-
3,149,560	79	948	3,322
695,321,967	14,418	173,016	4,019
101,997,484	2,058	24,696	4,130
4,645,604	118	1,416	3,281
36,853,031	1,385	16,620	2,217
43,125,574	1,604	19,248	2,241
26,952,550	979	11,748	2,294
908,896,210	20,562	246,744	3,684
9,550,847	273	3,276	2,915
918,447,057	20,835	250,020	3,673

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 16
Page 3 of 3

CWSNC Water

AVERAGE CONSUMPTION

**CWSNC Water Sub 356 Test year 2016
Consolidated Rate Case**

Service Area				
Purchased Water				
Carolina Trace	58,099,129	1,576	18,912	3,072
Carolina Forest	5,812,121	198	2,376	2,446
High Vista	10,612,170	235	2,820	3,763
Riverpointe	15,752,797	190	2,280	6,909
Whispering Pines	86,488,543	1,534	18,408	4,698
White Oak Plantation	25,363,484	507	6,084	4,169
Woodrun	17,048,700	463	5,556	3,069
Yorktown	3,755,800	107	1,284	2,925
Zemosa Acres	12,191,867	241	2,892	4,216
Total Uniform Rate Division	1,213,037,962	25,626	307,512	3,945

**CWSNC Water Sub 360 Test Year 2017
Year 1 After Consolidated**

57,902,753	1,593	19,116	3,029	
6,979,229	201	2,412	2,894	
10,525,100	258	3,096	3,400	
14,386,209	197	2,364	6,086	
95,804,426	1,576	18,912	5,066	
27,303,660	571	6,852	3,985	
16,592,047	457	5,484	3,026	
3,820,510	195	2,340	1,633	
12,064,309	243	2,916	4,137	
1,153,531,885	26,195	314,340	3,670	

**CWSNC Water Year 2018
Year 2 After Consolidated**

61,205,662	1,618	19,416	3,152	
6,643,518	206	2,472	2,688	
10,661,120	237	2,844	3,749	
14,622,289	191	2,292	6,380	
90,847,854	1,578	18,936	4,798	
26,260,326	579	6,948	3,780	
17,944,038	462	5,544	3,237	
3,682,649	103	1,236	2,979	
12,008,774	236	2,832	4,240	
1,162,323,289	26,045	312,540	3,719	

TC/BF/FH Water

TC/BF/FH Sub 356 Test Year 2016

Service Area	Total	EOP	EOP	Average
	Residential	Customers	Annual	Usage
Bradfield Farms	69,552,347	1,051	12,612	5,515
Fairfield Harbor	79,493,106	1,844	22,128	3,592
Treasure Cove	18,950,743	286	3,432	5,522
Total	167,996,196	3,181	38,172	4,401

TC/BF/FH Sub 360 Test Year 2017

Total	EOP	EOP	Average
Residential	Customers	Annual	Usage
65,090,523	1,093	13,116	4,963
76,664,416	1,840	22,080	3,472
17,829,557	302	3,624	4,920
159,584,496	3,235	38,820	4,111

TC/BF/FH Test Year 2018

Total	EOP	EOP	Average
Residential	Customers	Annual	Usage
66,162,665	1,093	13,116	5,044
75,371,336	1,745	20,940	3,599
17,415,823	301	3,612	4,822
158,949,824	3,139	37,668	4,220

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 17
Page 1 of 7

Public Staff's Recommended Rates Without CAM

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
New Metered Residential (1)								
5/8" Residential Metered (2)	1,428,480	8.56	12,228	62	744	24.52	18,243	30,471
5/8" Residential Metered (3)	8,040,960	8.56	68,831	349	4,188	24.52	102,690	171,520
Total New Metered Resid.	9,469,440		81,058	411	4,932		120,933	201,991
Flat Residential								
	-		-	16	192	55.18	10,595	10,595
Metered Residential								
5/8" Residential Metered	882,909,098	8.56	7,557,702	20,660	247,920	24.52	6,078,998	13,636,700
3/4" Residential Metered	9,980,113	8.56	85,430	321	3,852	24.52	94,451	179,881
1" Residential Metered	4,787,324	8.56	40,979	64	768	61.30	47,078	88,058
1.5" Residential Metered	4,673,119	8.56	40,002	35	420	122.60	51,492	91,494
2" Residential Metered	5,919,240	8.56	50,669	36	432	196.16	84,741	135,410
Irrigation	(497,490)	8.56	(4,259)	-	-	-	-	(4,259)
Total Residential Metered	907,771,404		7,770,523	21,116	253,392		6,356,761	14,127,284
Metered Commercial								
5/8" Commercial Metered	12,953,741	8.56	110,884	287	3,444	24.52	84,447	195,331
1" Commercial Metered	7,848,917	8.56	67,187	44	528	61.30	32,366	99,553
1.5" Commercial Metered	7,704,654	8.56	65,952	26	312	122.60	38,251	104,203
2" Commercial Metered	23,524,139	8.56	201,367	83	996	196.16	195,375	396,742
3" Commercial Metered	7,196,449	8.56	61,602	6	72	367.80	26,482	88,083

T/A

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 17
Page 2 of 7

Public Staff's Recommended Rates Without CAM

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
4" Commercial Metered	935,270	8.56	8,006	1	12	613.00	7,356	15,362
6" Commercial Metered	3,899,200	8.56	33,377	2	24	1,226.00	29,424	62,801
Total Commercial Metered	64,062,370		548,374	449	5,388		413,701	962,075
Irrigation	497,490	4.23	2,104	-	-	-	-	2,104
Availability								
Linville Ridge (monthly)	-		-	48	576	12.70	7,315	7,315
Sapphire Valley (monthly)				734	8,808	9.40	82,795	82,795
Connestee (monthly)				427	5,124	4.95	25,364	25,364
Total Uniform	981,800,704		8,402,060	23,201	278,412		7,017,464	15,419,524

Purchased water

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	61,635,224	2.21	136,214	1,610	19,320	24.52	473,726	609,940
1" Residential Metered	96,220	2.21	213	1	12	61.30	736	948
2" Residential Metered	10,000	2.21	22	1	12	196.16	2,354	2,376
Total	61,741,444		136,449	1,612		282	476,816	613,265

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 17
Page 3 of 7

Public Staff's Recommended Rates Without CAM

Purchased water

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Commercial Metered	1,667,530	2.21	3,685	26	312	24.52	7,650	11,335
1" Commercial Metered	60,850	2.21	134	1	12	61.30	736	870
1.5" Commercial Metered	570,000	2.21	1,260	1	12	122.60	1,471	2,731
2" Commercial Metered	1,861,400	2.21	4,114	2	24	196.16	4,708	8,822
Total	4,159,780		9,193	30	360		14,565	23,758
Total	65,901,224		145,642	1,642	360		491,381	637,023

Carolina Forest

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	6,466,328	3.19	20,628	209	2,508	24.52	61,496	82,124
1" Residential Metered	9,490	3.19	30	1	12	61.30	736	766
Total	6,475,818		20,658	210	2,520		62,232	82,890
5/8" Commercial Metered	15,679	3.19	50	4	48	24.52	1,177	1,227
1" Commercial Metered	81,625	3.19	260	1	12	61.30	736	996
1.5" Commercial Metered	87,000	3.19	278	1	12	122.60	1,471	1,749
Total	184,304		588	6	72		3,384	3,972
Availability bi-annual			-	1,354	2,708	25.35	68,648	68,648
Total	6,660,122		21,246	1,570	5,300		134,263	155,509

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 17
Page 4 of 7

Public Staff's Recommended Rates Without CAM

High Vista Estates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	10,611,338	3.40	36,079	234	2,808	24.52	68,852	104,931
1" Residential Metered	69,420	3.40	236	1	12	61.30	736	972
Total	10,680,758		36,315	235	2,820		69,588	105,902
5/8" Commercial Metered	343,860	3.40	1,169	3	36	24.52	883	2,052
2" Commercial Metered	295,900	3.40	1,006	1	12	196.16	2,354	3,360
Total	639,760		2,175	4	48		3,237	5,412
Total	11,320,518		38,490	239	2,868		72,824	111,314

Riverpointe

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	14,072,170	6.48	91,188	190	2,280	24.52	55,906	147,093
1" Residential Metered	117,690	6.48	763	2	24	61.30	1,471	2,234
Total	14,189,860		91,950	192	2,304		57,377	149,327
5/8" Commercial Metered	711,550	6.48	4,611	5	60	24.52	1,471	6,082
Total	14,901,410		96,561	197	2,364		58,848	155,409

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 17
Page 5 of 7

Public Staff's Recommended Rates Without CAM

Whispering Pines

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	88,137,041	3.28	289,089	1,578	18,936	24.52	464,311	753,400
1" Residential Metered	1,322,684	3.28	4,338	15	180	61.30	11,034	15,372
Total	89,459,725		293,428	1,593	19,116		475,345	768,773
5/8" Commercial Metered	1,093,600	3.28	3,587	28	336	24.52	8,239	11,826
1" Commercial Metered	2,480,250	3.28	8,135	7	84	61.30	5,149	13,284
1.5" Commercial Metered	578,400	3.28	1,897	5	60	122.60	7,356	9,253
2" Commercial Metered	438,500	3.28	1,438	1	12	196.16	2,354	3,792
4" Commercial Metered	520	3.28	2	1	12	613.00	7,356	7,358
Total	4,591,270		15,059	42	504		30,454	45,513
Total	94,050,995		308,487	1,635	19,620		505,799	814,286

**White Oak Planation/Lee
Forest/Winston
Planation/Winston Point**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	26,041,717	2.65	69,011	590	7,080	24.52	173,602	242,612
3/4" Residential Metered	47,580	2.65	126	1	12	24.52	294	420
Total	26,089,297		69,137	591	7,092		173,896	243,032

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 17
Page 6 of 7

Public Staff's Recommended Rates Without CAM

**White Oak Planation/Lee
Forest/Winston
Planation/Winston Point**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
1.5" Commercial Metered	193,800	2.65	514	1	12	122.60	1,471	1,985
Total	26,283,097		69,650	592	7,104		175,367	245,017

Yorktown

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	3,544,045	5.79	20,520	106	1,272	24.52	31,189	51,709

Woodrun

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	17,842,290	3.19	56,917	463	5,556	24.52	136,233	193,150
1" Residential Metered	18,980	3.19	61	1	12	61.30	736	796
Total	17,861,270		56,977	464	5,568		136,969	193,946
5/8" Commercial Metered	82,301	3.19	263	4	48	24.52	1,177	1,440
1" Commercial Metered	341,180	3.19	1,088	1	12	61.30	736	1,824
Total	423,481		1,351	5	60		1,913	3,263
Total	18,284,751		58,328	469	5,628		138,881	197,210

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 17
Page 7 of 7

Public Staff's Recommended Rates Without CAM

Zemosa Acres

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	11,502,007	5.41	62,226	243	2,916	24.52	71,500	133,726
3/4" Residential Metered	36,113	5.41	195	1	12	24.52	294	490
1" Residential Metered	87,915	5.41	476	3	36	61.30	2,207	2,682
Total	11,626,035		62,897	247	2,964		74,001	136,898
1" Commercial Metered	102,700	5.41	556	1	12	61.30	736	1,291
Total	11,728,735		63,452	248	2,976		74,737	138,189

Riverbend

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	5,872,416	7.50	44,043	141	1,692	24.52	41,488	85,531
TOTAL	1,240,348,017		9,268,480	30,040	327,596		8,742,242	18,010,722

Notes

- 1 Estimated consumption 1,920 gallons per EOP customer per month
- 2 The Ridges at Mountain Harbour
- 3 Linville Ridge
- 4 Availability customers in Woodrun included with Carolina Forest availability customers

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 18
Page 1 of 4

Public Staff's Recommended Rates Without CAM

CWSNC Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat, Sewer		-	-	2,074	24,888	73.50	1,829,333	1,829,333
5/8" Res Metered	376,017,839	7.95	2,989,342	10,347	124,164	47.84	5,940,006	8,929,348
1" Res Metered	1,109,385	7.95	8,820	26	312	47.84	14,926	23,746
1.5" Res Metered	4,204,519	7.95	33,426	-	-	47.84	-	33,426
2" Res Metered	2,022,291	7.95	16,077	2	24	47.84	1,148	17,225
Total	383,354,034		3,047,665	10,375	124,500		5,956,080	9,003,745
Multi-unit Flat rate		-	-	68	816	73.50	59,978	59,978
Commercial								
5/8" Commercial Metered	26,035,742	7.95	206,984	442	5,304	47.84	253,743	460,728
1" Commercial Metered	7,522,342	7.95	59,803	29	348	119.60	41,621	101,423
1.5" Commercial Metered	6,435,764	7.95	51,164	65	780	239.20	186,576	237,740
2" Commercial Metered	22,585,847	7.95	179,557	56	672	382.72	257,188	436,745
3" Commercial Metered	6,657,134	7.95	52,924	4	48	717.60	34,445	87,369
4" Commercial Metered	935,270	7.95	7,435	1	12	1,196.00	14,352	21,787
6" Commercial Metered	5,037,998	7.95	40,052	3	36	2,392.00	86,112	126,164
Total	75,210,097		597,920	600	7,200		874,037	1,471,957
Regalwood/White Oaks	-		-	1,041	12,492	73.50	918,194	918,194
White Oaks School	-		-	1	12	1,776.30	21,316	21,316

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Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 18
Page 2 of 4

Public Staff's Recommended Rates Without CAM

Billing Type	Usage	Usage Rate	Usage Revenue	Customers	Monthly Rate	Base Charge	Base Charge Revenue	Total
					x 12			Revenue
Child Castle Daycare	-	-	-	1	12	227.72	2,733	2,733
Availability Conneetee	-	-	-	218	2,616	5.70	14,911	14,911
Availability Sapphire Valley				87	1,044	10.10	10,544	10,544
Total	458,564,131		3,645,585	14,465	173,580		9,687,126	13,332,711

Purchased Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total
								Revenue
Mount Carmel	12,373,183	6.32	78,199	392	4,704	40.78	191,820	270,018
College Park								
Residential Flat, Sewer only	-	-	-	1	12	73.50	882	882
5/8" Residential Metered	2,380,496	7.33	17,449	50	600	33.49	20,093	37,542
Total	2,380,496		-	51	612		20,975	38,424
Kings Grant								
5/8" Residential Metered	8,157,700	3.98	32,468	177	2,124	33.49	71,129	103,596
1" Res Metered	191,540	3.98	762	1	12	33.49	402	1,164
Total	8,349,240		33,230	178	2,136		71,530	104,760
White Oak Plantation/Lee Forest/Winston Pointe								
5/8" Residential Metered	21,287,437	5.57	118,571	499	5,988	33.49	200,526	319,097

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 18
Page 3 of 4

Public Staff's Recommended Rates Without CAM

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Fairfield Mountain								
5/8" Res. Collection/Treatm.	-		-	405	4,860	102.99	500,522	500,522
1" Res Collection/Treatm.	-		-	12	144	102.99	14,830	14,830
Residential Collection	-		-	417	5,004		515,352	515,352
ww only flt	-	13.93	-	2	24	102.99	2,472	2,472
Small Commercial	210,600	13.93	2,933.66	4	48	78.50	3,768	6,702
Medium Commercial	2,575,390	13.93	35,875.18	18	216	139.50	30,132	66,007
Large Commercial	159,880	13.93	2,227.13	1	12	219.50	2,634	4,861
Nonresidential Metered	2,945,870		41,035.97	25.00	300.00		39,005.71	80,041.68
Total	2,945,870		41,036	442	5,304		554,358	595,394

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
The Ridges at Mountain Harbour								
5/8" Res Collection/Treatm			-	46	552	51.91	28,653	28,653
5/8" Comm Collection/Treatm			-	1	12	51.91	623	623
2" Comm Collection/Treatm			-	1	12	180.85	2,170	2,170
Total				48	576		31,446	31,446

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 18
Page 4 of 4

Public Staff's Recommended Rates Without CAM

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
CL/MS								
5/8" Residential Sewer	42,481,350	7.95	337,727	782	9,384	47.84	448,931	786,657
1" Residential Sewer	9,724,907	7.95	77,313	87	1,044	47.84	49,945	127,258
Total	52,206,257		415,040	869	10,428		498,876	913,915
5/8" Commercial Sewer	6,202,979	7.95	49,314	67	804	47.84	38,463	87,777
1" Commercial Sewer	3,105,710	7.95	24,690	19	228	119.60	27,269	51,959
1.5" Commercial Sewer	680,757	7.95	5,412	2	24	239.20	5,741	11,153
2" Commercial Sewer	501,007	7.95	3,983	2	24	382.72	9,185	13,168
3" Commercial Sewer	68,000	7.95	541	1	12	717.60	8,611	9,152
Total	10,558,453		83,940	91	1,092		89,269	173,209
Total	62,764,710		498,979	960	11,520		588,145	1,087,124
TOTAL	568,665,067		4,415,600	17,035	204,420		11,345,926	15,778,975

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months March 31, 2019

Casselberry
Exhibit No. 19
Page 1 of 1

Public Staff's Recommended Rates Without CAM

WATER

Treasure Cove/Bradfield Farms/Fairfield Harbour/Silverton

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	152,700,104	4.15	633,705	3,111	37,332	14.01	523,021	1,156,727
3/4" Residential Metered	6,256,905	4.15	25,966	100	1,200	14.01	16,812	42,778
1" Residential Metered	128,930	4.15	535	1	12	35.03	420	955
2" Residential Metered	109,100	4.15	453	1	12	112.08	1,345	1,798
Total Residential Metered	159,195,039		660,659	3,213	38,556		541,599	1,202,258
5/8" Commercial Metered	1,284,790	4.15	5,332	23	276	14.01	3,867	9,199
1" Commercial Metered	257,676	4.15	1,069	6	72	35.03	2,522	3,591
1.5" Commercial Metered	374,574	4.15	1,554	2	24	70.05	1,681	3,236
2" Commercial Metered	163,407	4.15	678	3	36	112.08	4,035	4,713
Total Commercial Metered	2,080,447		8,634	34	408		12,105	20,738
Availability				969	11,628	3.30	38,372	38,372
Total	161,275,486		669,293	4,216	50,592		592,076	1,261,369

1/11

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 20
Page 1 of 1

Public Staff's Recommended Rates Without CAM

Sewer

Fairfield Harbour/Bradfield Farms/Silverton

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat				165	1,980	49.78	98,567	98,567
5/8" Residential Flat (meteres)				2,828	33,936	49.78	1,689,374	1,689,374
Bulk Sewer				386	4,632	49.78	230,586	230,586
Total Residential				3,379	40,548		2,018,527	2,018,527
5/8" Commercial Metered	952,000	3.73	3,551	16	192	34.38	6,601	10,152
1" Commercial Metered	170,286	3.73	635	2	24	85.95	2,063	2,698
1.5" Commercial Metered	374,574	3.73	1,397	2	24	171.90	4,126	5,523
2" Commercial Metered	7	3.73	0	1	12	275.04	3,300	3,301
Total Commercial	1,496,867		5,583	21	252		16,090	21,673
Total				3,400	40,800		2,034,617	2,040,200
Availability				969	11,628	2.70	31,396	31,396
Total				4,369	52,428		2,066,012	2,071,596

2/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 21
Page 1 of 7

Public Staff Recommended Rates With CAM

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
New Metered Residential (1)								
5/8" Residential Metered (2)	1,428,480	11.26	16,085	62	744	16.92	12,588	28,673
5/8" Residential Metered (3)	8,040,960	11.26	90,541	349	4,188	16.92	70,861	161,402
Total New Metered Resid.	9,469,440		106,626	411	4,932		83,449	190,075
Flat Residential	-		-	16	192	57.25	10,993	10,993
Metered Residential								
5/8" Residential Metered	882,909,098	11.26	9,941,556	20,660	247,920	16.92	4,194,806	14,136,363
3/4" Residential Metered	9,980,113	11.26	112,376	321	3,852	16.92	65,176	177,552
1" Residential Metered	4,787,324	11.26	53,905	64	768	42.30	32,486	86,392
1.5" Residential Metered	4,673,119	11.26	52,619	35	420	84.60	35,532	88,151
2" Residential Metered	5,919,240	11.26	66,651	36	432	135.36	58,476	125,126
Irrigation	(497,490)	11.26	(5,602)	-	-	-	-	(5,602)
Total Residential Metered	907,771,404		10,221,506	21,116	253,392		4,386,476	14,607,982
Metered Commercial								
5/8" Commercial Metered	12,953,741	11.26	145,859	287	3,444	16.92	58,272	204,132
1" Commercial Metered	7,848,917	11.26	88,379	44	528	42.30	22,334	110,713
1.5" Commercial Metered	7,704,654	11.26	86,754	26	312	84.60	26,395	113,150
2" Commercial Metered	23,524,139	11.26	264,882	83	996	135.36	134,819	399,700
3" Commercial Metered	7,196,449	11.26	81,032	6	72	253.80	18,274	99,306

5/15

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 21
Page 2 of 7

Public Staff Recommended Rates With CAM

CWSNC Water

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
4" Commercial Metered	935,270	11.26	10,531	1	12	423.00	5,076	15,607
6" Commercial Metered	3,899,200	11.26	43,905	2	24	846.00	20,304	64,209
Total Commercial Metered	64,062,370		721,342	449	5,388		285,474	1,006,817
Irrigation	497,490	4.23	2,104	-	-	-	-	2,104
Availability								
Linville Ridge (monthly)	-		-	48	576	12.70	7,315	7,315
Sapphire Valley (monthly)				734	8,808	9.40	82,795	82,795
Connestee (monthly)				427	5,124	4.95	25,364	25,364
Total Uniform	981,800,704		11,051,579	23,201	278,412		4,881,867	15,933,445

Purchased water

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	61,635,224	2.21	136,214	1,610	19,320	16.92	326,894	463,108
1" Residential Metered	96,220	2.21	213	1	12	42.30	508	720
2" Residential Metered	10,000	2.21	22	1	12	135.36	1,624	1,646
Total	61,741,444		136,449	1,612		195	329,026	465,475

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 21
Page 3 of 7

Public Staff Recommended Rates With CAM

Purchased water

Carolina Trace

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Commercial Metered	1,667,530	2.21	3,685	26	312	16.92	5,279	8,964
1" Commercial Metered	60,850	2.21	134	1	12	42.30	508	642
1.5" Commercial Metered	570,000	2.21	1,260	1	12	84.60	1,015	2,275
2" Commercial Metered	1,861,400	2.21	4,114	2	24	135.36	3,249	7,362
Total	4,159,780		9,193	30	360		10,050	19,244
Total	65,901,224		145,642	1,642	360		339,077	484,719

Carolina Forest

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	6,466,328	3.19	20,628	209	2,508	16.92	42,435	63,063
1" Residential Metered	9,490	3.19	30	1	12	42.30	508	538
Total	6,475,818		20,658	210	2,520		42,943	63,601
5/8" Commercial Metered	15,679	3.19	50	4	48	16.92	812	862
1" Commercial Metered	81,625	3.19	260	1	12	42.30	508	768
1.5" Commercial Metered	87,000	3.19	278	1	12	84.60	1,015	1,293
Total	184,304		588	6	72		2,335	2,923
Availability bi-annual			-	1,354	2,708	25.35	68,648	68,648
Total	6,660,122		21,246	1,570	5,300		113,926	135,172

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 21
Page 4 of 7

Public Staff Recommended Rates With CAM

High Vista Estates

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	10,611,338	3.40	36,079	234	2,808	16.92	47,511	83,590
1" Residential Metered	69,420	3.40	236	1	12	42.30	508	744
Total	10,680,758		36,315	235	2,820		48,019	84,334
5/8" Commercial Metered	343,860	3.40	1,169	3	36	16.92	609	1,778
2" Commercial Metered	295,900	3.40	1,006	1	12	135.36	1,624	2,630
Total	639,760		2,175	4	48		2,233	4,409
Total	11,320,518		38,490	239	2,868		50,252	88,742

Riverpointe

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	14,072,170	6.48	91,188	190	2,280	16.92	38,578	129,765
1" Residential Metered	117,690	6.48	763	2	24	42.30	1,015	1,778
Total	14,189,860		91,950	192	2,304		39,593	131,543
5/8" Commercial Metered	711,550	6.48	4,611	5	60	16.92	1,015	5,626
Total	14,901,410		96,561	197	2,364		40,608	137,169

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 21
Page 5 of 7

Public Staff Recommended Rates With CAM

Whispering Pines

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	88,137,041	3.28	289,089	1,578	18,936	16.92	320,397	609,487
1" Residential Metered	1,322,684	3.28	4,338	15	180	42.30	7,614	11,952
Total	89,459,725		293,428	1,593	19,116		328,011	621,439
5/8" Commercial Metered	1,093,600	3.28	3,587	28	336	16.92	5,685	9,272
1" Commercial Metered	2,480,250	3.28	8,135	7	84	42.30	3,553	11,688
1.5" Commercial Metered	578,400	3.28	1,897	5	60	84.60	5,076	6,973
2" Commercial Metered	438,500	3.28	1,438	1	12	135.36	1,624	3,063
4" Commercial Metered	520	3.28	2	1	12	423.00	5,076	5,078
Total	4,591,270		15,059	42	504		21,015	36,074
Total	94,050,995		308,487	1,635	19,620		349,026	657,513

**White Oak Planation/Lee
Forest/Winston
Planation/Winston Point**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	26,041,717	2.65	69,011	590	7,080	16.92	119,794	188,804
3/4" Residential Metered	47,580	2.65	126	1	12	16.92	203	329
Total	26,089,297		69,137	591	7,092		119,997	189,133

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 21
Page 6 of 7

Public Staff Recommended Rates With CAM

**White Oak Planation/Lee
Forest/Winston
Planation/Winston Point**

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
1.5" Commercial Metered	193,800	2.65	514	1	12	84.60	1,015	1,529
Total	26,283,097		69,650	592	7,104		121,012	190,662

Yorktown

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	3,544,045	5.79	20,520	106	1,272	16.92	21,522	42,042

Woodrun

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	17,842,290	3.19	56,917	463	5,556	16.92	94,008	150,924
1" Residential Metered	18,980	3.19	61	1	12	42.30	508	568
Total	17,861,270		56,977	464	5,568		94,515	151,493
5/8" Commercial Metered	82,301	3.19	263	4	48	16.92	812	1,075
1" Commercial Metered	341,180	3.19	1,088	1	12	42.30	508	1,596
Total	423,481		1,351	5	60		1,320	2,671
Total	18,284,751		58,328	469	5,628		95,835	154,163

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 21
Page 7 of 7

Public Staff Recommended Rates With CAM

Zemosa Acres

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	11,502,007	5.41	62,226	243	2,916	16.92	49,339	111,565
3/4" Residential Metered	36,113	5.41	195	1	12	16.92	203	398
1" Residential Metered	87,915	5.41	476	3	36	42.30	1,523	1,998
Total	11,626,035		62,897	247	2,964		51,065	113,961
1" Commercial Metered	102,700	5.41	556	1	12	42.30	508	1,063
Total	11,728,735		63,452	248	2,976		51,572	115,025

Riverbend

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	5,872,416	7.50	44,043	141	1,692	16.92	28,629	72,672
TOTAL	1,240,348,017		11,917,998	30,040	327,596		6,093,325	18,011,324

Notes

- 1 Estimated consumption 1,920 gallons per EOP customer per month
- 2 The Ridges at Mountain Harbour
- 3 Linville Ridge
- 4 Availability customers in Woodrun included with Carolina Forest availability customers

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 22
Page 1 of 4

Public Staff's Recommended Rates With CAM

CWSNC Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat, Sewer		-	-	2,074	24,888	73.77	1,836,027	1,836,027
5/8" Res Metered	376,017,839	10.27	3,861,703	10,347	124,164	40.62	5,043,542	8,905,245
1" Res Metered	1,109,385	10.27	11,393	26	312	40.62	12,673	24,067
1.5" Res Metered	4,204,519	10.27	43,180	-	-	40.62	-	43,180
2" Res Metered	2,022,291	10.27	20,769	2	24	40.62	975	21,744
Total	383,354,034		3,937,046	10,375	124,500		5,057,190	8,994,236
Multi-unit Flat rate		-	-	68	816	73.77	60,198	60,198
Commercial								
5/8" Commercial Metered	26,035,742	10.27	267,387	442	5,304	40.62	215,448	482,836
1" Commercial Metered	7,522,342	10.27	77,254	29	348	101.55	35,339	112,594
1.5" Commercial Metered	6,435,764	10.27	66,095	65	780	203.10	158,418	224,513
2" Commercial Metered	22,585,847	10.27	231,957	56	672	324.96	218,373	450,330
3" Commercial Metered	6,657,134	10.27	68,369	4	48	609.30	29,246	97,615
4" Commercial Metered	935,270	10.27	9,605	1	12	1,015.50	12,186	21,791
6" Commercial Metered	5,037,998	10.27	51,740	3	36	2,031.00	73,116	124,856
Total	75,210,097		772,408	600	7,200		742,127	1,514,535
Regalwood/White Oaks	-		-	1,041	12,492	73.77	921,554	921,554
White Oaks School	-		-	1	12	1,508.22	18,099	18,099

5/19

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 22
Page 2 of 4

Public Staff's Recommended Rates With CAM

Billing Type	Usage	Usage Rate	Usage Revenue	Customers	Monthly Rate x 12	Base Charge	Base Charge Revenue	Total Revenue
Child Castle Daycare	-	-	-	1	12	193.35	2,320	2,320
Availability Connetsee	-	-	-	218	2,616	5.70	14,911	14,911
Availability Sapphire Valley				87	1,044	10.10	10,544	10,544
Total	458,564,131		4,709,454	14,465	173,580		8,662,970	13,372,424

Purchased Sewer

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Mount Carmel	12,373,183	6.32	78,199	392	4,704	35.72	168,046	246,244
College Park								
Residential Flat, Sewer only	-	-	-	1	12	73.77	885	885
5/8" Residential Metered	2,380,496	7.33	17,449	50	600	28.43	17,060	34,509
Total	2,380,496		-	51	612		17,946	35,395
Kings Grant								
5/8" Residential Metered	8,157,700	3.98	32,468	177	2,124	28.43	60,394	92,861
1" Res Metered	191,540	3.98	762	1	12	28.43	341	1,104
Total	8,349,240		33,230	178	2,136		60,735	93,965
White Oak Plantation/Lee Forest/Winston Pointe								
5/8" Residential Metered	21,287,437	5.57	118,571	499	5,988	28.43	170,263	288,834

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 22
Page 3 of 4

Public Staff's Recommended Rates With CAM

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Fairfield Mountain								
5/8" Res. Collection/Treatm.	-		-	405	4,860	97.93	475,959	475,959
1" Res Collection/Treatm.	-		-	12	144	97.93	14,102	14,102
Residential Collection	-		-	417	5,004		490,062	490,062
ww only flt	-	13.93	-	2	24	97.93	2,350	2,350
Small Commercial	210,600	13.93	2,933.66	4	48	78.50	3,768	6,702
Medium Commercial	2,575,390	13.93	35,875.18	18	216	139.50	30,132	66,007
Large Commercial	159,880	13.93	2,227.13	1	12	219.50	2,634	4,861
Nonresidential Metered	2,945,870		41,035.97	25.00	300.00		38,884.42	79,920.39
Total	2,945,870		41,036	442	5,304		528,946	569,982

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
The Ridges at Mountain Harbour								
5/8" Res Collection/Treatm			-	46	552	46.85	25,863	25,863
5/8" Comm Collection/Treatm			-	1	12	46.85	562	562
2" Comm Collection/Treatm			-	1	12	175.79	2,110	2,110
Total				48	576		28,535	28,535

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 22
Page 4 of 4

Public Staff's Recommended Rates With CAM

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
CL/MS								
5/8" Residential Sewer	42,481,350	10.27	436,283	782	9,384	40.62	381,178	817,462
1" Residential Sewer	9,724,907	10.27	99,875	87	1,044	40.62	42,407	142,282
Total	52,206,257		536,158	869	10,428		423,585	959,744
5/8" Commercial Sewer	6,202,979	10.27	63,705	67	804	40.62	32,658	96,363
1" Commercial Sewer	3,105,710	10.27	31,896	19	228	101.55	23,153	55,049
1.5" Commercial Sewer	680,757	10.27	6,991	2	24	203.10	4,874	11,866
2" Commercial Sewer	501,007	10.27	5,145	2	24	324.96	7,799	12,944
3" Commercial Sewer	68,000	10.27	698	1	12	609.30	7,312	8,010
Total	10,558,453		108,435	91	1,092		75,797	184,232
Total	62,764,710		644,594	960	11,520		499,382	1,143,976
TOTAL	568,665,067		5,625,083	17,035	204,420		10,136,823	15,779,355

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months March 31, 2019

Casselberry
Exhibit No. 23
Page 1 of 1

Public Staff's Recommended Rates With CAM

WATER

Treasure Cove/Bradfield Farms/Fairfield Harbour/Silverton

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
5/8" Residential Metered	152,700,104	5.29	807,784	3,111	37,332	9.36	349,428	1,157,211
3/4" Residential Metered	6,256,905	5.29	33,099	100	1,200	9.36	11,232	44,331
1" Residential Metered	128,930	5.29	682	1	12	23.40	281	963
2" Residential Metered	109,100	5.29	577	1	12	74.88	899	1,476
Total Residential Metered	159,195,039		842,142	3,213	38,556		361,839	1,203,981
5/8" Commercial Metered	1,284,790	5.29	6,797	23	276	9.36	2,583	9,380
1" Commercial Metered	257,676	5.29	1,363	6	72	23.40	1,685	3,048
1.5" Commercial Metered	374,574	5.29	1,981	2	24	46.80	1,123	3,105
2" Commercial Metered	163,407	5.29	864	3	36	74.88	2,696	3,560
Total Commercial Metered	2,080,447		11,006	34	408		8,087	19,093
Availability				969	11,628	3.30	38,372	38,372
Total	161,275,486		853,147	4,216	50,592		408,298	1,261,446

4/1

Carolina Water Service, Inc. of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 24
Page 1 of 1

Public Staff's Recommended Rates With CAM

Sewer

Fairfield Harbour/Bradfield Farms/Silverton

Billing Type	Usage	Usage Rate	Usage Revenue	EOP Customers	EOP x 12 months	Base Charge	Base Charge Revenue	Total Revenue
Residential Flat				165	1,980	49.80	98,603	98,603
5/8" Residential Flat (meteres)				2,828	33,936	49.80	1,689,997	1,689,997
Bulk Sewer				386	4,632	49.80	230,671	230,671
Total Residential				3,379	40,548		2,019,271	2,019,271
5/8" Commercial Metered	952,000	4.88	4,646	16	192	29.65	5,693	10,339
1" Commercial Metered	170,286	4.88	831	2	24	74.13	1,779	2,610
1.5" Commercial Metered	374,574	4.88	1,828	2	24	148.25	3,558	5,386
2" Commercial Metered	7	4.88	0	1	12	237.20	2,846	2,846
Total Commercial	1,496,867		7,305	21	252		13,876	21,181
Total				3,400	40,800		2,033,147	2,040,452
Availability				969	11,628	2.70	31,396	31,396
Total				4,369	52,428		2,064,543	2,071,847

2/19
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Carolina Water Service Inc., of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 25
Page 1 of 4

**COMPANY'S PRESENT AND PROPOSED RATES AND THE PUBLIC STAFF'S
RECOMMENDED WATER AND SEWER RATES**

WITHOUT CAM

WATER RATES AND CHARGES

UNIFORM WATER SERVICE:

MONTHLY METERED SERVICE: (Residential and Commercial)

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Base Facilities Charges (zero usage)			
< 1" meter	\$ 27.53	\$ 29.81	\$ 24.52
1" meter	\$ 68.83	\$ 74.81	\$ 61.30
1-1/2" meter	\$ 137.65	\$ 149.05	\$ 122.60
2" meter	\$ 220.24	\$ 238.48	\$ 196.16
3" meter	\$ 412.95	\$ 447.15	\$ 367.80
4" meter	\$ 688.25	\$ 745.25	\$ 613.00
6" meter	\$1,376.50	\$1,490.50	\$1,226.00
<u>AVERAGE RESIDENTIAL BILL</u> (based on 3,582 gallons)	\$ 52.89	\$ 61.40	\$ 55.18

USAGE CHARGE:

A.	Treated Water/1,000 gallons	\$ 7.08	\$ 8.82	\$ 8.56
B.	Untreated Water/1,000 gallons (Brandywine Bay Irrigation Water)	\$ 4.11	\$ 5.12	\$ 4.23
C.	Purchased Water for Resale			
<u>Service Area</u>	<u>Bulk Provider</u>	<u>Usage Charge/ 1,000 gallons</u>	<u>Usage charge /1,000 gallons</u>	<u>Usage charge /1,000 gallons</u>
Carolina Forest	Montgomery County	\$ 3.19	\$ 3.19	\$ 3.19
High Vista Est.	City of Hendersonville	\$ 3.25	\$ 3.43	\$ 3.40
Riverbend	Town of Franklin	\$ 7.20	\$ 7.20	\$ 7.50
Riverpointe	Charlotte Water	\$ 6.30	\$ 6.48	\$ 6.48
Whispering Pines	Town of Southern Pines	\$ 2.23	\$ 2.23	\$ 3.28
White Oak Plt./				
Lee Forest	Johnston County	\$ 2.40	\$ 2.65	\$ 2.65
Winston Plt.	Johnston County	\$ 2.40	\$ 2.65	\$ 2.65
Winston Point	Johnston County	\$ 2.40	\$ 2.65	\$ 2.65
Woodrun	Montgomery County	\$ 3.19	\$ 3.19	\$ 3.19
Yorktown	City of Winston-Salem	\$ 5.01	\$ 5.01	\$ 5.79
Zemosa Acres	City of Concord	\$ 5.27	\$ 5.27	\$ 5.41
Carolina Trace	City of Sanford	\$ 2.21	\$ 2.21	\$ 2.21

<u>MONTHLY FLAT RATE SERVICE:</u> (per residence or single family equivalent)	\$ 53.58	\$ 61.96	\$ 55.18
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Conservation Rate Pilot Program – The Point Service Area

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Base Facilities Charges (zero usage)			
< 1" meter	\$ 27.53	\$ 23.85	Opposed
Usage charge per 1,000 gallons	\$ 7.08		
Usage Charge (blocks will pro-rate for billing periods outside standard monthly cycle)			
Block #1 – 0 to 5,000 gallons		\$ 7.06	
Block #2 – 5,001 to 18,000 gallons		\$ 11.03	
Block #3 – Greater than 18,000 gallons		\$ 14.71	

AVAILABILITY RATES (semi-annual):

Applicable only to property owners in Carolina Forest and Woodrun Subdivision in Montgomery County	\$ 24.65	\$ 24.65	\$ 25.35
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Linville Ridge Subdivision	\$ 12.35	\$ 12.35	\$ 12.70
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 9.10	\$ 9.10	\$ 9.40
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Connetsee Falls	\$ 4.80	\$ 4.80	\$ 4.95
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SEWER RATES AND CHARGES

UNIFORM SEWER SERVICE

MONTHLY METERED SEWER SERVICE:

Base Facilities Charges

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Residential (zero usage)	\$ 46.31	\$ 59.67	\$ 47.84
Commercial (zero usage)			
< 1" meter	\$ 46.31	\$ 59.67	\$ 47.84
1" meter	\$ 115.78	\$ 149.18	\$ 119.60
1-1/2" meter	\$ 231.55	\$ 298.35	\$ 239.20
2" meter	\$ 370.48	\$ 477.36	\$ 382.72
3" meter	\$ 694.65	\$ 895.05	\$ 717.60
4" meter	\$1,157.75	\$1,491.75	\$1,196.00
6" meter	\$2,315.50	\$2,983.50	\$2,392.00
Usage Charge, per 1,000 gallons	\$ 3.62	\$ 5.80	\$ 7.95
<u>AVERAGE RESIDENTIAL BILL (based on 3,228 gallons)</u>	\$ 58.00	\$ 78.39	\$ 73.50

MONTHLY METERED PURCHASED SEWER SERVICE:

Collection charge (Residential and Commercial/SFE)	\$ 31.63	\$ 40.78	\$ 33.49
Usage charge, per 1,000 gallons based on purchased water			
<u>Service Area</u>	<u>Bulk Provider</u>	<u>Usage Charge/ 1,000 gallons</u>	<u>Usage charge /1,000 gallons</u>
White Oak Plt./Lee			
Forest/Winston Pt.	Johnston County	\$ 5.06	\$ 5.57
Kings Grant	Two Rivers Utilities	\$ 3.80	\$ 3.98
College Park	Town of Dallas	\$ 5.70	\$ 7.33

<u>MONTHLY FLAT RATE SERVICE:</u>	\$ 57.82	\$ 79.46	\$ 73.50
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Multi-residential customers who are served by a
Master meter shall be charged the flat rate per unit

MT CARMEL SUBDIVISION SERVICE AREAS:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Monthly Base Facility Charge	\$ 6.77	\$ 7.11	\$ 7.29
Usage charge/1,000 gallons (based on metered water usage)	\$ 5.88	\$ 6.16	\$ 6.32
Monthly Collection Charge (Residential and Commercial)	\$ 31.63	\$ 40.78	\$ 33.49

REGALWOOD AND WHITE OAK ESTATES SUBDIVISION SERVICE AREAS:

A. Monthly Flat Rate Sewer Service:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Residential Service	\$ 56.82	\$ 79.46	\$ 73.50
White Oak High School	\$1,799.66	\$2,059.25	\$ 1,776.30
Child Castle Daycare	\$ 223.58	\$ 255.83	\$ 227.72
Pantry	\$ 119.49	\$ 136.73	\$ 124.86

FAIRFIELD MOUNTAIN/APPLE VALLEY (a.k.a. RUMBLING BALD) SERVICE AREA, HIGHLAND SHORES
SUBDIVISION, AND LAUREL MOUNTAIN ESTATES

Monthly Sewer Rates:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff Recommend</u>
Residential			
Collection charge/dwelling unit	\$ 31.63	\$ 40.78	\$ 33.49
Treatment charge/dwelling unit	\$ 69.50	\$ 69.50	\$ 69.50
Total monthly flat rate/dwelling unit	\$ 101.13	\$ 110.28	\$ 102.99
Commercial and Other			
Minimum monthly collection and treatment charge	\$ 101.13	\$ 110.28	\$ 102.99
Monthly collection and treatment charge for Customers who do not take water service (per single-family equivalent)	\$ 101.13	\$ 110.28	\$ 102.99
Treatment charge per dwelling unit			
Small (less than 2,500 gallons per month)	\$ 78.50	\$ 78.50	\$ 78.50
Medium (2,500 to 10,000 gallons per month)	\$ 139.50	\$ 139.50	\$ 139.50
Large (over 10,000 gallons per month)	\$ 219.50	\$ 219.50	\$ 219.50
Collection Charge, per 1,000 gallons	\$ 13.93	\$ 13.93	\$ 13.93

The Ridges at Mountain Harbour:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff Recommend</u>
<u>Monthly Sewer Rates:</u>			
Collection charge (Residential and Commercial)	\$ 31.63	\$ 40.78	\$ 33.49
Treatment charge (Residential and Commercial)			
< 1" meter	\$ 18.42	\$ 18.42	\$ 18.42
2" meter	\$ 147.36	\$ 147.36	\$ 147.36

COROLLA LIGHT AND MONTERAY SHORES SERVICE AREA

MONTHLY METERED SEWER SERVICE:

Base Facility Charge:

		<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Residential (zero usage)				
	< 1" meter	\$ 52.06	\$ 59.67	\$ 47.84
	1" meter	\$ 130.15	\$ 149.18	\$ 47.80
Commercial (zero usage)				
	< 1" meter	\$ 52.06	\$ 59.67	\$ 47.84
	1" meter	\$ 130.15	\$ 149.18	\$ 119.60
	1-1/2" meter	\$ 260.31	\$ 298.35	\$ 239.20
	2" meter	\$ 416.49	\$ 477.36	\$ 382.72
	3" meter	\$ 780.92	\$ 895.05	\$ 717.60
	4" meter	\$1,301.54	\$1,491.75	\$1,196.00
	6" meter	\$2,603.07	\$2,983.50	\$2,392.00
Usage Charge, per 1,000 gallons		\$ 6.62	\$ 5.80	\$ 7.95
<u>AVERAGE RESIDENTIAL BILL (based on 3,228 gallons)</u>		\$ 73.43	\$ 78.39	\$ 73.50

AVAILABILITY RATES (monthly):

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 8.30	\$ 8.30	\$ 10.10
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Connestee Falls	\$ 4.70	\$ 4.70	\$ 5.70
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I/A

Carolina Water Service Inc., of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 26
Page 1 of 1

**COMPANY'S PRESENT AND PROPOSED RATES AND THE PUBLIC STAFF'S
RECOMMENDED WATER AND SEWER RATES FOR TREASURE COVE, FAIRFIELD
HARBOUR SERVICE AREA, BRADFIELD FARMS SUBDIVISIONS, AND SILVERTON
SUBDIVISION**

WITHOUT CAM

WATER RATES AND CHARGES

MONTHLY METERED SERVICE: (Residential and Commercial)

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Base Facilities Charges (zero usage)			
< 1" meter	\$ 16.74	\$ 18.67	\$ 14.01
1" meter	\$ 41.85	\$ 46.68	\$ 35.03
1-1/2" meter	\$ 83.70	\$ 93.35	\$ 70.05
2" meter	\$133.92	\$ 149.36	\$ 112.08
Usage Charge, per 1,000 gallons			
Treated Water	\$ 3.75	\$ 4.45	\$ 4.15
<u>AVERAGE RESIDENTIAL BILL</u> (based on 4,129 gallons)	\$ 32.22	\$ 37.04	\$ 31.15
Availability Rates (Monthly)			
Applicable only to property owners in Fairfield Harbour Service Area	\$ 3.28	\$ 3.28	\$ 3.30

SEWER RATES AND CHARGES

MONTHLY SEWER RATES:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Residential			
Flat Rate, per dwelling unit	\$ 50.46	\$ 55.66	\$ 49.78
Bulk Flat Rate, per REU	\$ 50.46	\$ 55.66	\$ 49.78
Commercial and Other			
Monthly Flat Rate (Customers who do not take water)	\$ 50.46	\$ 55.66	\$ 49.78
Monthly Metered Rates (based on meter size with zero usage)			
<1" meter	\$ 44.58	\$ 11.50	\$ 34.38
1" meter	\$111.45	\$ 57.50	\$ 85.95
1-1/2" meter	\$222.90	\$ 57.50	\$ 171.90
2" meter	\$356.64	\$ 92.00	\$ 275.04
Usage Charge, per 1,000 gallons	\$ 1.43	\$ 1.72	\$ 3.73
Bulk Sewer for Hawthorne at the Green Apartments			
Bulk Flat Rate, per REU	\$ 50.46	\$ 55.66	\$ 49.78
Availability Rates (Monthly)			
Applicable only to property owners in Fairfield Harbour Service Area	\$ 2.65	\$ 2.65	\$ 2.70

**COMPANY'S PRESENT AND PROPOSED RATES AND THE PUBLIC STAFF'S
RECOMMENDED WATER AND SEWER RATES**

WITH CAM

WATER RATES AND CHARGES

UNIFORM WATER SERVICE:

MONTHLY METERED SERVICE: (Residential and Commercial)

		<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Base Facilities Charges (zero usage)				
	< 1" meter	\$ 27.53	\$ 29.81	\$ 16.92
	1" meter	\$ 68.83	\$ 74.81	\$ 42.30
	1-1/2" meter	\$ 137.65	\$ 149.05	\$ 84.60
	2" meter	\$ 220.24	\$ 238.48	\$ 135.36
	3" meter	\$ 412.95	\$ 447.15	\$ 253.80
	4" meter	\$ 688.25	\$ 745.25	\$ 423.00
	6" meter	\$1,376.50	\$1,490.50	\$ 846.00

AVERAGE RESIDENTIAL BILL (based on 3,582 gallons) \$ 52.89 \$ 61.40 \$ 57.25

USAGE CHARGE:

A.	Treated Water/1,000 gallons	\$ 7.08	\$ 8.82	\$ 11.26
B.	Untreated Water/1,000 gallons (Brandywine Bay Irrigation Water)	\$ 4.11	\$ 5.12	\$ 4.23
C.	Purchased Water for Resale			

<u>Service Area</u>	<u>Bulk Provider</u>	<u>Usage Charge/ 1,000 gallons</u>	<u>Usage charge /1,000 gallons</u>	<u>Usage charge /1,000 gallons</u>
Carolina Forest	Montgomery County	\$ 3.19	\$ 3.19	\$ 3.19
High Vista Est.	City of Hendersonville	\$ 3.25	\$ 3.43	\$ 3.40
Riverbend	Town of Franklin	\$ 7.20	\$ 7.20	\$ 7.50
Riverpointe	Charlotte Water	\$ 6.30	\$ 6.48	\$ 6.48
Whispering Pines	Town of Southern Pines	\$ 2.23	\$ 2.23	\$ 3.28
White Oak Plt./				
Lee Forest	Johnston County	\$ 2.40	\$ 2.65	\$ 2.65
Winston Plt.	Johnston County	\$ 2.40	\$ 2.65	\$ 2.65
Winston Point	Johnston County	\$ 2.40	\$ 2.65	\$ 2.65
Woodrun	Montgomery County	\$ 3.19	\$ 3.19	\$ 3.19
Yorktown	City of Winston-Salem	\$ 5.01	\$ 5.01	\$ 5.79
Zemosa Acres	City of Concord	\$ 5.27	\$ 5.27	\$ 5.41
Carolina Trace	City of Sanford	\$ 2.21	\$ 2.21	\$ 2.21

MONTHLY FLAT RATE SERVICE: \$ 53.58 \$ 61.96 \$ 57.25
(per residence or single family equivalent)

Conservation Rate Pilot Program – The Point Service Area

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Base Facilities Charges (zero usage)			
	< 1" meter	\$ 27.53	\$ 23.85
	Usage charge per 1,000 gallons	\$ 7.08	Opposed

Usage Charge (blocks will pro-rate for billing periods outside standard monthly cycle)

Block #1 – 0 to 5,000 gallons	\$ 7.06
Block #2 – 5,001 to 18,000 gallons	\$ 11.03
Block #3 – Greater than 18,000 gallons	\$ 14.71

Carolina Water Service Inc., of North Carolina
Docket No. W-354, Sub 344
For the 12 Months Ending June 30, 2015

Casselberry
Exhibit No. 27
Page 2 of 4

AVAILABILITY RATES (semi-annual):

Applicable only to property owners in Carolina Forest and Woodrun Subdivision in Montgomery County	\$ 24.65	\$ 24.65	\$ 25.35
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Linville Ridge Subdivision	\$ 12.35	\$ 12.35	\$ 12.70
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 9.10	\$ 9.10	\$ 9.40
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Conneestee Falls	\$ 4.80	\$ 4.80	\$ 4.95
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SEWER RATES AND CHARGES

UNIFORM SEWER SERVICE

MONTHLY METERED SEWER SERVICE:

Base Facilities Charges

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staffs Recommend</u>
Residential (zero usage)	\$ 46.31	\$ 59.67	\$ 40.62
Commercial (zero usage)			
< 1" meter	\$ 46.31	\$ 59.67	\$ 40.62
1" meter	\$ 115.78	\$ 149.18	\$ 101.55
1-1/2" meter	\$ 231.55	\$ 298.35	\$ 203.10
2" meter	\$ 370.48	\$ 477.36	\$ 324.96
3" meter	\$ 694.65	\$ 895.05	\$ 609.30
4" meter	\$1,157.75	\$1,491.75	\$1,015.50
6" meter	\$2,315.50	\$2,983.50	\$2,031.00
Usage Charge, per 1,000 gallons	\$ 3.62	\$ 5.80	\$ 10.27
<u>AVERAGE RESIDENTIAL BILL (based on 3,228 gallons)</u>	\$ 58.00	\$ 78.39	\$ 73.77

MONTHLY METERED PURCHASED SEWER SERVICE:

Collection charge (Residential and Commercial/SFE)	\$ 31.63	\$ 40.78	\$ 28.43
Usage charge, per 1,000 gallons based on purchased water			
<u>Service Area</u>	<u>Bulk Provider</u>	<u>Usage Charge/ 1,000 gallons</u>	<u>Usage charge /1,000 gallons</u>
White Oak Plt./Lee			
Forest/Winston Pt.	Johnston County	\$ 5.06	\$ 5.57
Kings Grant	Two Rivers Utilities	\$ 3.80	\$ 3.98
College Park	Town of Dallas	\$ 5.70	\$ 7.33

<u>MONTHLY FLAT RATE SERVICE:</u>	\$ 57.82	\$ 79.46	\$ 73.77
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Multi-residential customers who are served by a
Master meter shall be charged the flat rate per unit

MT CARMEL SUBDIVISION SERVICE AREAS:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Monthly Base Facility Charge	\$ 6.77	\$ 7.11	\$ 7.29
Usage charge/1,000 gallons (based on metered water usage)	\$ 5.88	\$ 6.16	\$ 6.32
Monthly Collection Charge (Residential and Commercial)	\$ 31.63	\$ 40.78	\$ 28.43

REGALWOOD AND WHITE OAK ESTATES SUBDIVISION SERVICE AREAS:

A. Monthly Flat Rate Sewer Service:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Residential Service	\$ 56.82	\$ 79.46	\$ 73.77
White Oak High School	\$1,799.66	\$2,059.25	\$ 1,508.22
Child Castle Daycare	\$ 223.58	\$ 255.83	\$ 193.35
Pantry	\$ 119.49	\$ 136.73	\$ 106.02

FAIRFIELD MOUNTAIN/APPLE VALLEY (a.k.a. RUMBLING BALD) SERVICE AREA, HIGHLAND SHORES
SUBDIVISION, AND LAUREL MOUNTAIN ESTATES

Monthly Sewer Rates:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff Recommend</u>
Residential			
Collection charge/dwelling unit	\$ 31.63	\$ 40.78	\$ 28.43
Treatment charge/dwelling unit	\$ 69.50	\$ 69.50	\$ 69.50
Total monthly flat rate/dwelling unit	\$ 101.13	\$ 110.28	\$ 97.93
Commercial and Other			
Minimum monthly collection and treatment charge	\$ 101.13	\$ 110.28	\$ 97.93
Monthly collection and treatment charge for Customers who do not take water service (per single-family equivalent)	\$ 101.13	\$ 110.28	\$ 97.93
Treatment charge per dwelling unit			
Small (less than 2,500 gallons per month)	\$ 78.50	\$ 78.50	\$ 78.50
Medium (2,500 to 10,000 gallons per month)	\$ 139.50	\$ 139.50	\$ 139.50
Large (over 10,000 gallons per month)	\$ 219.50	\$ 219.50	\$ 219.50
Collection Charge, per 1,000 gallons	\$ 13.93	\$ 13.93	\$ 13.93

The Ridges at Mountain Harbour:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff Recommend</u>
<u>Monthly Sewer Rates:</u>			
Collection charge (Residential and Commercial)	\$ 31.63	\$ 40.78	\$ 28.43
Treatment charge (Residential and Commercial)			
< 1" meter	\$ 18.42	\$ 18.42	\$ 18.42
2" meter	\$ 147.36	\$ 147.36	\$ 147.36

COROLLA LIGHT AND MONTERAY SHORES SERVICE AREA

MONTHLY METERED SEWER SERVICE:

Base Facility Charge:

		<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Residential (zero usage)				
	< 1" meter	\$ 52.06	\$ 59.67	\$ 40.62
	1" meter	\$ 130.15	\$ 149.18	\$ 40.62
Commercial (zero usage)				
	< 1" meter	\$ 52.06	\$ 59.67	\$ 40.62
	1" meter	\$ 130.15	\$ 149.18	\$ 101.55
	1-1/2" meter	\$ 260.31	\$ 298.35	\$ 203.10
	2" meter	\$ 416.49	\$ 477.36	\$ 324.96
	3" meter	\$ 780.92	\$ 895.05	\$ 609.30
	4" meter	\$1,301.54	\$1,491.75	\$1,015.50
	6" meter	\$2,603.07	\$2,983.50	\$2,031.00
Usage Charge, per 1,000 gallons		\$ 6.62	\$ 5.80	\$ 10.27
<u>AVERAGE RESIDENTIAL BILL</u> (based on 3,228 gallons)		\$ 73.43	\$ 78.39	\$ 73.77

AVAILABILITY RATES (monthly):

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 8.30	\$ 8.30	\$ 10.10
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AVAILABILITY RATES (monthly):

Applicable only to property owners in Connetsee Falls	\$ 4.70	\$ 4.70	\$ 5.70
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I/A

Carolina Water Service Inc., of North Carolina
Docket No. W-354, Sub 364
For the 12 Months Ending March 31, 2019

Casselberry
Exhibit No. 28
Page 1 of 1

**COMPANY'S PRESENT AND PROPOSED RATES AND THE PUBLIC STAFF'S
RECOMMENDED WATER AND SEWER RATES FOR TREASURE COVE, FAIRFIELD
HARBOUR SERVICE AREA BRADFIELD FARMS SUBDIVISIONS AND SILVERTON
SUBDIVISION**

WITH CAM

WATER RATES AND CHARGES

MONTHLY METERED SERVICE: (Residential and Commercial)

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Base Facilities Charges (zero usage)			
< 1" meter	\$ 16.74	\$ 18.67	\$ 9.36
1" meter	\$ 41.85	\$ 46.68	\$ 23.40
1-1/2" meter	\$ 83.70	\$ 93.35	\$ 46.80
2" meter	\$133.92	\$ 149.36	\$ 74.88
Usage Charge, per 1,000 gallons			
Treated Water	\$ 3.75	\$ 4.45	\$ 5.29
<u>AVERAGE RESIDENTIAL BILL</u> (based on 4,129 gallons)	\$ 32.22	\$ 37.04	\$ 31.20
Availability Rates (Monthly)			
Applicable only to property owners in Fairfield Harbour Service Area	\$ 3.28	\$ 3.28	\$ 3.30

SEWER RATES AND CHARGES

MONTHLY SEWER RATES:

	<u>Existing</u>	<u>Proposed</u>	<u>Public Staff's Recommend</u>
Residential			
Flat Rate, per dwelling unit	\$ 50.46	\$ 55.66	\$ 49.80
Bulk Flat Rate, per REU	\$ 50.46	\$ 55.66	\$ 49.80
Commercial and Other			
Monthly Flat Rate (Customers who do not take water)	\$ 50.46	\$ 55.66	\$ 49.80
Monthly Metered Rates (based on meter size with zero usage)			
<1" meter	\$ 44.58	\$ 11.50	\$ 29.65
1" meter	\$111.45	\$ 57.50	\$ 74.13
1-1/2" meter	\$222.90	\$ 57.50	\$ 148.25
2" meter	\$356.64	\$ 92.00	\$ 237.20
Usage Charge, per 1,000 gallons	\$ 1.43	\$ 1.72	\$ 4.88
Bulk Sewer for Hawthorne at the Green Apartments			
Bulk Flat Rate, per REU	\$ 50.46	\$ 55.66	\$ 49.80
Availability Rates (Monthly)			
Applicable only to property owners in Fairfield Harbour Service Area	\$ 2.65	\$ 2.65	\$ 2.70