

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Annual reestablishment) DOCKET NO. 920006-WS
of authorized range of returns) ORDER NO. PSC-92-0686-FOF-WS
on common equity for water and) ISSUED: 07/21/92
wastewater utilities, pursuant)
to Section 367.081(4)(f),)
Florida Statutes)
_____)

The following Commissioners participated in the disposition of this matter:

THOMAS M. BEARD, Chairman
BETTY EASLEY
J. TERRY DEASON
SUSAN F. CLARK
LUIS J. LAUREDO

NOTICE OF PROPOSED AGENCY ACTION

ORDER ESTABLISHING AUTHORIZED
RANGE OF RETURNS ON COMMON EQUITY

BY THE COMMISSION:

NOTICE IS HEREBY GIVEN by the Florida Public Service Commission that the action proposed herein is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for a formal proceeding in accordance with Rule 25-22.029, Florida Administrative Code.

Pursuant to Section 367.081(4)(f), Florida Statutes, this Commission is authorized to establish, not less than once each year, a leverage formula to calculate a reasonable range of returns on common equity for water and wastewater utilities. We last revised the leverage formula by Order No. 24246, issued March 18, 1991.

In order to calculate the current leverage formula, we have utilized the same methodologies and assumptions utilized in previous years, adjusted for changes in bond yields and required rates of return. The basic assumptions are that: business risk is similar for all water and wastewater utilities; the cost of equity is an exponential function of the equity ratio; the marginal weighted average cost of investor capital is constant over the 40 to 100 percent equity ratio range; and, given adequate management and effective regulation, a Moody's Baa bond rating is representative of the average marginal cost of debt for water and wastewater utilities with equity ratios of 40 to 100 percent.

DOCUMENT NUMBER-DATE

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1992 RECORDS / 07918

Using the most current financial information, we have calculated a range of returns on common equity from 10.44 percent to 12.44 percent. Last year's leverage formula, 9.96 percent plus 1.26/equity ratio, produced a range of returns of 11.22 percent to 13.11 percent. The net change in the average return over the 40 percent to 100 percent equity ratio range is a decrease of 73 basis points, from 12.17 percent to 11.44 percent. This decrease in the average common equity return reflects the lowered bond yield and required rates of return.

We derived the range of returns on common equity by applying a discounted cash flow model to an index of publicly traded water and wastewater utilities, a risk premium model to an index of natural gas utilities, and a bond yield differential adjustment to reflect the difference in risk between the indices and an average Florida water and wastewater utility. Using the most recently available capital structure for the index of publicly traded water and wastewater companies as a proxy for the capital structure of an average Florida water and wastewater utility, we calculated the marginal cost of investor capital to be 10.44 percent, as shown below.

<u>Marginal Cost of Investor Capital</u> <u>Average Water/Wastewater Utility</u>			
<u>Capital Component</u>	<u>Ratio</u>	<u>Cost Rate</u>	<u>Marginal Cost</u>
Common Equity	40%	12.44%	4.98%
Total Debt	60%	9.11%	5.47%
	<hr/>		<hr/>
	100%		10.44%

Our analyses are appended to this Order as Attachment 1.

Based upon the discussion above, we find that the appropriate formula for measuring returns on common equity for Florida water and wastewater utilities is as follows:

$$\text{Return on Common Equity} = 9.11 \text{ percent} + \frac{1.33}{\text{Equity Ratio}}$$

where:

$$\text{Equity Ratio} = \frac{\text{Common Equity}}{\text{Common Equity} + \text{Preferred Equity} + \text{Long- and Short-Term Debt}}$$

Finally, in order to discourage imprudent financial risk, we find it appropriate to limit the authorized return on common equity to a maximum of 12.44 percent for all water and wastewater utilities with equity ratios of less than 40 percent.

It is, therefore,

ORDERED by the Florida Public Service Commission that the provisions of this Order are issued as proposed agency action and will become final unless an appropriate petition is filed with the Division of Records and Reporting, 101 East Gaines Street, Tallahassee, Florida 32399-0870, by the close of business on the date indicated in the Notice of Further Proceedings or Judicial Review. It is further

ORDERED that the appropriate formula for measuring returns on common equity for water and wastewater utilities shall be as set forth in the body of this Order. It is further

ORDERED that returns on common equity are hereby capped at 12.44 percent for all water and wastewater utilities with equity ratios of less than 40 percent in order to discourage imprudent financial risk.

By Order of the Florida Public Service Commission this 21st day of July, 1992.

STEVE TRIBBLE, Director
Division of Records and Reporting

(S E A L)

CB

by: Kay Hegan
Chief, Bureau of Records

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.59(4), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

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The action proposed herein is preliminary in nature and will not become effective or final, except as provided by Rule 25-22.029, Florida Administrative Code. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, as provided by Rule 25-22.029(4), Florida Administrative Code, in the form provided by Rule 25-22.036(7)(a) and (f), Florida Administrative Code. This petition must be received by the Director, Division of Records and Reporting at his office at 101 East Gaines Street, Tallahassee, Florida 32399-0870, by the close of business on August 11, 1992.

In the absence of such a petition, this order shall become effective on the day subsequent to the above date as provided by Rule 25-22.029(6), Florida Administrative Code.

Any objection or protest filed in this docket before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.

If this order becomes final and effective on the date described above, any party adversely affected may request judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or by the First District Court of Appeal in the case of a water or wastewater utility by filing a notice of appeal with the Director, Division of Records and Reporting and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days of the effective date of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

SUMMARY OF RESULTS

Leverage Formula Update

	<u>1991</u>	<u>1992</u>
DCF Cost of Equity for Water Index	12.38%	11.20%
Risk Premium Cost of Equity for Gas Index	<u>12.05%</u>	<u>11.82%</u>
AVERAGE	12.22%	11.51%
Bond Yield Differential	.52%	0.44%
Adjustment to Reflect Required Equity Return at a 40% Equity Ratio	<u>.37%</u>	<u>.49%</u>
Cost of Equity for Average Florida Water and Wastewater Utility at a 40% Equity Ratio	<u>13.11%</u>	<u>12.44%</u>

Existing Leverage Formula

Return on Common Equity	-	9.96% + 1.26/ER
Range of Returns on Equity	-	11.22% - 13.11%

Updated Leverage Formula

Return on Common Equity	-	9.11% + 1.33/ER
Range of Returns on Equity	-	10.44% - 12.44%

Marginal Cost of Investor Capital
Average Water and Wastewater Utility

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>	<u>Weighted Marginal Cost Rate</u>
Common Equity	46.91%	11.95%	5.61%
Total Debt	<u>53.09%</u>	9.11% *	<u>4.84%</u>
	<u>100%</u>		<u>10.44%</u>

$$\text{Return on Common Equity} = 9.11\% + 1.332 / \text{ER}^{**}$$

Use leverage formula to compute required common equity return at 40% common equity ratio. Required return at 40% equity ratio is the ceiling for allowed common equity returns.

$$\text{Return on Common Equity} = 9.11\% + 1.332 / .40 = 12.44\%$$

Marginal Cost of Investor Capital
Average Water and Wastewater Utility

<u>Capital Component</u>	<u>Ratio</u>	<u>Marginal Cost Rate</u>	<u>Weighted Marginal Cost Rate</u>
Common Equity	40.00%	12.44%	<u>4.98%</u>
Total Debt	<u>60.00%</u>	<u>9.11%</u> *	<u>5.47%</u>
	<u>100%</u>		<u>10.44%</u>

* Average Baa rate for April 1992
 Source: Moody's Bond Survey, 6/1/92

** Where:
 $\text{Equity Ratio} = \frac{\text{Common Equity}}{\text{Common Equity} + \text{Preferred Equity} + \text{Long and Short-Term Debt}}$

DCF Analysis of Water Index

	1986	1987	1988	1989	1990	1991	Arithmetic Average Growth Rate	Current Dividend	Current Average Stock Price
American Water Works	0.56	0.64	0.68	0.74	0.80	0.86	8.99%	0.93	21.50
Aquarion Company	1.39	1.44	1.51	1.57	1.60	1.62	3.12%	1.62	20.75
California Water Services Co.	1.40	1.47	1.60	1.68	1.74	1.80	5.17%	1.86	28.75
Connecticut Water Services	1.49	1.52	1.53	1.56	1.57	1.60	1.44%	1.60	22.50
Consumers Water Company	0.84	0.90	0.98	1.05	1.09	1.11	5.76%	1.12	15.50
E'Town Corporation	1.83	1.88	1.93	1.95	1.98	2.00	1.83%	2.00	26.63
Middlesex Water Company	1.60	1.68	1.74	1.80	1.85	1.89	3.39%	1.92	29.25
SJW Corporation	1.57	1.68	1.76	1.82	1.86	1.92	4.12%	1.98	31.69
Southern California Water Co.	1.88	1.93	2.02	2.07	2.14	2.20	3.20%	2.30	33.50
United Water Resources	0.70	0.77	0.84	0.88	0.88	0.91	5.45%	0.92	13.50
Average							4.25%	1.62	24.36

ATTACHMENT 1
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DCF Analysis

$$K = D(1)/P(0) + g$$

K = Investors' required rate of return

$$D(1) = \text{Dividend expected next period} = \$1.62 \times 1.0425 = \$1.69$$

$$P(0) = \text{Current stock price} = \$24.36$$

$$g = \text{Projected long-term growth in dividends} = 4.25\%$$

$$K = \$1.69 / \$24.36 + 4.25\%$$

$$K = 11.20\%$$

Source: Standard & Poor's Stock Guide, May 1991 Edition

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ATTACHMENT 1
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Risk Premium Cost of Equity for Moody's Natural Gas
Distribution Index

Estimated Monthly Risk Premium	3.824 %
Blue Chip Forecast for 30-Year Treasury Bond	<u>8.000 %</u>
	<u>11.824 %</u>

* Blue Chip Financial Forecasts, May 1, 1992

ESTIMATED MONTHLY RISK PREMIUMS
 MOODY'S NATURAL GAS DISTRIBUTION INDEX
 JULY 1982 - JUNE 1992

YEAR	MONTH	Quarterly Cost of Equity Gas	Risk Free Rate	Risk Premium	
1982	JUN	19.930	13.05	6.880	
	JUL	19.450	13.75	5.700	
	AUG	19.963	13.40	6.563	
	SEP	19.990	12.54	7.450	
	OCT	18.962	11.86	7.102	
	NOV	18.576	10.84	7.736	
	DEC	18.625	10.46	8.165	
	1983	JAN	18.054	10.60	7.454
		FEB	17.806	10.64	7.166
		MAR	17.800	10.89	6.910
		APR	17.464	10.65	6.814
		MAY	17.364	10.49	6.874
JUN		17.180	10.52	6.660	
JUL		16.505	10.95	5.555	
AUG		16.429	11.44	4.989	
SEP		16.493	11.78	4.713	
OCT		16.226	11.62	4.606	
NOV		15.903	11.55	4.353	
DEC		16.072	11.68	4.392	
1984	JAN	15.862	11.81	4.052	
	FEB	15.870	11.65	4.220	
	MAR	15.825	11.81	4.015	
	APR	15.736	12.28	3.456	
	MAY	15.627	12.58	3.047	
	JUN	15.776	13.32	2.456	
	JUL	16.334	13.43	2.904	
	AUG	16.429	13.24	3.189	
	SEP	16.453	12.63	3.823	
	OCT	16.508	12.34	4.168	
	NOV	15.927	12.00	3.927	
	DEC	15.640	11.55	4.090	
1985	JAN	15.290	11.51	3.780	
	FEB	15.051	11.46	3.591	
	MAR	14.917	11.56	3.357	
	APR	14.673	11.92	2.753	
	MAY	14.694	11.55	3.144	
	JUN	14.588	11.08	3.508	
	JUL	14.886	10.48	4.406	
	AUG	15.017	10.62	4.397	
	SEP	15.604	10.70	4.904	
	OCT	15.030	10.78	4.250	
	NOV	15.122	10.66	4.462	
	DEC	14.672	10.19	4.482	

ESTIMATED MONTHLY RISK PREMIUMS (continued)

YEAR	MONTH	Quarterly Cost of Equity Gas	Risk Free Rate	Risk Premium
1986	JAN	13.857	9.68	4.177
	FEB	13.780	9.59	4.190
	MAR	13.644	9.26	4.384
	APR	12.944	8.15	4.794
	MAY	12.684	7.58	5.104
	JUN	12.726	8.13	4.596
	JUL	11.818	8.27	3.548
	AUG	11.683	7.88	3.803
	SEP	11.653	7.74	3.913
	OCT	11.408	8.10	3.308
	NOV	11.617	8.06	3.557
	DEC	11.336	7.82	3.516
1987	JAN	11.847	7.66	4.187
	FEB	11.642	7.62	4.022
	MAR	11.563	7.71	3.853
	APR	11.293	7.64	3.653
	MAY	11.759	8.35	3.409
	JUN	11.903	8.85	3.053
	JUL	11.738	8.67	3.068
	AUG	11.856	8.77	3.086
	SEP	11.858	9.06	2.798
	OCT	12.148	9.67	2.478
	NOV	12.926	9.73	3.196
	DEC	13.078	9.10	3.978
1988	JAN	13.226	9.23	3.996
	FEB	12.850	8.93	3.920
	MAR	12.416	8.48	3.936
	APR	12.396	8.64	3.756
	MAY	12.398	8.97	3.428
	JUN	12.378	9.30	3.078
	JUL	12.049	9.11	2.939
	AUG	12.027	9.28	2.747
	SEP	12.314	9.42	2.894
	OCT	12.070	9.14	2.930
	NOV	12.036	8.96	3.076
	DEC	12.088	9.09	2.998
1989	JAN	12.028	9.10	2.928
	FEB	12.050	9.05	3.000
	MAR	12.060	9.15	2.910
	APR	12.580	9.31	3.270
	MAY	12.480	9.17	3.310
	JUN	12.312	8.93	3.382
	JUL	12.071	8.37	3.701
	AUG	11.882	8.13	3.752
	SEP	11.788	8.23	3.558
	OCT	11.450	8.29	3.160
	NOV	11.462	8.12	3.342
	DEC	11.320	8.00	3.320

ESTIMATED MONTHLY RISK PREMIUMS (continued)

YEAR	MONTH	Quarterly Cost of Equity Gas	Risk Free Rate	Risk Premium
1990	JAN	10.978	8.00	2.978
	FEB	11.130	8.37	2.760
	MAR	11.252	8.63	2.622
	APR	11.416	8.73	2.686
	MAY	11.620	8.92	2.700
	JUN	11.710	8.87	2.840
	JUL	11.468	8.60	2.868
	AUG	11.550	8.62	2.930
	SEP	11.830	8.93	2.900
	OCT	11.160	9.08	2.080
	NOV	11.340	8.89	2.450
	DEC	11.070	8.58	2.490
1991	JAN	11.031	8.27	2.761
	FEB	11.186	8.31	2.876
	MAR	11.171	8.09	3.081
	APR	10.864	8.36	2.504
	MAY	10.810	8.26	2.550
	JUN	10.820	8.31	2.510
	JUL	10.797	8.52	2.277
	AUG	10.783	8.47	2.313
	SEP	10.680	8.15	2.530
	OCT	10.988	7.95	3.038
	NOV	10.742	7.86	2.882
	DEC	10.719	7.80	2.919
1992	JAN	10.580	7.55	3.030
	FEB	10.640	7.46	3.180
	MAR	10.698	7.76	2.938
	APR	10.684	7.90	2.784
	MAY	10.810	7.85	2.960
AVERAGE				3.824

SOURCES: Value Line Investment Survey
 S&P Stock Guide
 Moody's Bond Survey

BOND YIELD DIFFERENTIALS
 Public Utility Bond Yield Averages
 Source: Moody's Bond Survey

60 Month Average - 0.0799		0.0994		0.0994		0.0994				
YEAR	MON	A1 SPREAD	A2 SPREAD	A3 SPREAD	Baa1 SPREAD	Baa2				
	APR	8.87	0.06	8.93	0.06	8.99	0.06	9.05	0.06	9.11
	MAR	8.92	0.05	8.97	0.06	9.03	0.06	9.10	0.06	9.16
	FEB	8.87	0.06	8.93	0.05	8.98	0.05	9.04	0.05	9.09
1992	JAN	8.77	0.07	8.84	0.05	8.89	0.05	8.93	0.05	8.98
	DEC	8.82	0.06	8.88	0.06	8.94	0.06	9.01	0.06	9.07
	NOV	8.99	0.06	9.05	0.08	9.13	0.08	9.20	0.08	9.28
	OCT	9.05	0.07	9.12	0.07	9.19	0.07	9.25	0.07	9.32
	SEP	9.09	0.07	9.16	0.06	9.22	0.06	9.28	0.06	9.34
	AUG	9.21	0.08	9.29	0.06	9.35	0.06	9.41	0.06	9.47
	JUL	9.45	0.10	9.55	0.05	9.60	0.05	9.64	0.05	9.69
	JUN	9.49	0.10	9.59	0.07	9.66	0.07	9.72	0.07	9.79
	MAY	9.35	0.09	9.44	0.07	9.51	0.07	9.57	0.07	9.64
	APR	9.35	0.11	9.46	0.06	9.52	0.06	9.58	0.06	9.64
	MAR	9.44	0.11	9.55	0.06	9.61	0.06	9.68	0.06	9.74
	FEB	9.37	0.10	9.47	0.07	9.54	0.07	9.61	0.07	9.68
1991	JAN	9.60	0.11	9.71	0.08	9.79	0.08	9.88	0.08	9.96
	DEC	9.63	0.10	9.73	0.08	9.81	0.08	9.88	0.08	9.96
	NOV	9.80	0.10	9.90	0.07	9.97	0.07	10.05	0.07	10.12
	OCT	9.96	0.09	10.05	0.08	10.13	0.08	10.20	0.08	10.28
	SEP	10.04	0.08	10.12	0.07	10.19	0.07	10.25	0.07	10.32
	AUG	9.87	0.05	9.92	0.07	9.99	0.07	10.05	0.07	10.12
	JUL	9.70	0.05	9.75	0.06	9.81	0.06	9.86	0.06	9.92
	JUN	9.73	0.07	9.80	0.05	9.85	0.05	9.91	0.05	9.96
	MAY	9.94	0.06	10.00	0.05	10.05	0.05	10.11	0.05	10.16
	APR	9.88	0.04	9.92	0.07	9.99	0.07	10.06	0.07	10.13
	MAR	9.77	0.08	9.85	0.07	9.92	0.07	9.99	0.07	10.06
	FEB	9.70	0.06	9.76	0.07	9.83	0.07	9.89	0.07	9.96
1990	JAN	9.50	0.06	9.56	0.06	9.62	0.06	9.68	0.06	9.74
	DEC	9.38	0.06	9.44	0.05	9.49	0.05	9.55	0.05	9.60
	NOV	9.42	0.09	9.51	0.04	9.55	0.04	9.60	0.04	9.64
	OCT	9.45	0.09	9.54	0.03	9.57	0.03	9.61	0.03	9.64
	SEP	9.50	0.08	9.58	0.04	9.62	0.04	9.66	0.04	9.70
	AUG	9.44	0.08	9.52	0.04	9.56	0.04	9.60	0.04	9.64
	JUL	9.41	0.09	9.50	0.05	9.55	0.05	9.59	0.05	9.64
	JUN	9.55	0.09	9.64	0.05	9.69	0.05	9.75	0.05	9.80
	MAY	9.92	0.07	9.99	0.10	10.09	0.10	10.19	0.10	10.29
	APR	10.13	0.05	10.18	0.10	10.28	0.10	10.39	0.10	10.49
	MAR	10.17	0.06	10.23	0.09	10.32	0.09	10.41	0.09	10.50
	FEB	10.02	0.05	10.07	0.10	10.17	0.10	10.28	0.10	10.38
1989	JAN	10.02	0.06	10.08	0.10	10.18	0.10	10.28	0.10	10.38
	DEC	10.01	0.05	10.06	0.13	10.19	0.13	10.31	0.13	10.44
	NOV	9.91	0.06	9.97	0.11	10.08	0.11	10.20	0.11	10.31
	OCT	9.87	0.03	9.90	0.15	10.05	0.15	10.20	0.15	10.35
	SEP	10.52	0.09	10.61	0.17	10.78	0.17	10.96	0.17	11.13
	AUG	11.06	0.11	11.17	0.17	11.34	0.17	11.52	0.17	11.69
	JUL	10.95	0.09	11.04	0.16	11.20	0.16	11.36	0.16	11.52
	JUN	10.70	0.09	10.79	0.16	10.95	0.16	11.11	0.16	11.27
	MAY	10.72	0.09	10.81	0.19	11.00	0.19	11.19	0.19	11.38
	APR	10.46	0.08	10.54	0.23	10.77	0.23	11.00	0.23	11.23
	MAR	10.03	0.06	10.09	0.20	10.29	0.20	10.49	0.20	10.69
	FEB	10.04	0.06	10.10	0.18	10.28	0.18	10.47	0.18	10.65
1988	JAN	10.68	0.08	10.76	0.19	10.95	0.19	11.15	0.19	11.34
	DEC	10.91	0.07	10.98	0.19	11.17	0.19	11.36	0.19	11.55
	NOV	10.75	0.07	10.82	0.19	11.01	0.19	11.21	0.19	11.40
	OCT	11.26	0.08	11.34	0.19	11.53	0.19	11.72	0.19	11.91
	SEP	11.03	0.19	11.22	0.12	11.34	0.12	11.46	0.12	11.58
	AUG	10.32	0.13	10.45	0.15	10.60	0.15	10.75	0.15	10.90
	JUL	10.00	0.15	10.15	0.16	10.31	0.16	10.46	0.16	10.62
	JUN	9.88	0.14	10.02	0.15	10.17	0.15	10.31	0.15	10.46
	MAY	9.82	0.09	9.91	0.16	10.07	0.16	10.24	0.16	10.40

1991 Equity Ratios of Index Companies
Water & Wastewater

	Common Equity	Total Debt
American Water Works	35.00%	65.00%
Aquarion Company	47.00%	53.00%
California Water Services Co.	51.00%	49.00%
Connecticut Water Services	42.00%	58.00%
Consumers Water Company	43.00%	57.00%
E'Town Corporation	35.00%	65.00%
Middlesex Water Company	41.00%	59.00%
SJW Corporation	61.00%	39.00%
Southern California Water Co.	46.00%	54.00%
United Water Resources	33.00%	67.00%
Average	43.40%	56.60%

Source: C. A. Turner Utility Reports, April 1992 Edition

1991 Equity Ratios of Index Companies
Natural Gas

	Common Equity	Total Debt
Atlanta Gas & Light	50.40%	49.60%
Bay State Gas	48.00%	52.00%
Brooklyn Union Gas	45.40%	54.60%
Indiana Energy	53.20%	46.80%
Laclede Gas	52.50%	47.50%
Northwest Natural Gas	43.20%	56.80%
Peoples Energy	52.10%	47.90%
Washington Gas & Light	58.50%	41.50%
Average	50.41%	49.59%

Source: Value Line Investment Survey