In re: Annual reestablishment of authorized range of returns on common equity for water and wastewater utilities, pursuant to Section 367.081(4)(f), F.S.

DOCKET NO. 990006-WS
ORDER NO. PSC-99-1224-PAA-WS
ISSUED: June 21, 1999

The following Commissioners participated in the disposition of this matter:

JOE GARCIA, Chairman<br>J. TERRY DEASON<br>SUSAN F. CLARK<br>JULIA L. JOHNSON<br>E. LEON JACOBS, JR.

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 discussed herein is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for a formal proceeding, pursuant to Rule 25-22.029, Florida Administrative Code.

## BACKGROUND

At the June 16, 1998, Agenda Conference, this Commission approved the current leverage formula used to calculate the appropriate range of returns on common equity for water and wastewater (WAW) utilities. We encouraged our staff to hold a workshop to review the methodology for determining the leverage formula. Our staff held workshops on November 16, 1998, and March 12, 1999. Both workshops were held to solicit ideas from the industry, the Office of Public Counsel (OPC), and other interested parties to assist us in reviewing the existing leverage formula methodology and to determine if changes to the methodology are warranted.

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We have reviewed and considered all the suggested changes recommended by the parties at the two workshops and in the written comments. We believe that several suggestions by OPC and the WAW industry are reasonable and we find it appropriate to amend the leverage formula to reflect these changes. For comparative purposes, we have also produced a leverage formula that relies on the same methodologies used in prior years updated only for changes in the underlying market conditions. Attachment No. 1 of this Order, at page 2, presents a comparison of the approved leverage formula to the status quo leverage formula.

## RANGE OF RETURN ON COMMON EQUITY

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 equity (ROE) for WAW utilities. We established the current leverage formula by Order No. PSC-98-1434-FOF-WS, issued October 23, 1998. Order No. PSC-98-0903-FOF-WS was issued as a proposed agency action on July 6, 1998. Florida Water Services Corporation (EWSC) protested the order on July 23, 1998. FWSC subsequently withdrew the protest on September 9, 1998. Order No. PSC-98-1434-FOF-WS made Order No. PSC-98-0903-FOF-WS, which presented the current leverage formula, final and effective on October 6, 1998.

## Review of Existing Methodology

The leverage formula depends on four basic assumptions: business risk is similar for all WAW 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 equity ratio range of $40 \%$ to $100 \%$; and the cost rate at an assumed Moody's Baa3 bond rating plus 25 basis points represents the average marginal cost of debt to a Florida WAW utility over an equity ratio range of $40 \%$ to $100 \%$. A further assumption is that the leverage formula is appropriate for the average Florida WAW utility. The existing leverage formula relies on four ROE models and several adjustments for differences in risk and debt cost to conform the model results to the average Florida WAW utility.

Two discounted cash flow (DCE) models applied to an index of water utilities - The water utilities index consists of six national water companies that have publicly traded stock and are followed by the Value Line Investment Survey (Value Line). One DCF model uses historical dividend growth rates and the other uses

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prospective growth rates. The historical model weights each company's returns by market capitalization and is an annual model. The prospective DCF is a quarterly model.

A risk premium model applied to an index of publicly traded natural gas utilities - The risk premium is the average for 120 months. We have used natural gas utilities as a proxy for water companies because data has not been available for water utilities for 120 months. The natural gas utilities have been considered an appropriate proxy for WAW utilities.

A Capital Asset Pricing Model (CAPM) - The CAPM model uses a market return for all dividend paying stocks followed by Value Line, the yield on 30 -year Treasury Bonds projected by the Blue Chip Financial Forecasts, and the average beta of the index of water utilities.

The results of the above models are averaged and adjusted as discussed below.

Gas Index Risk Adjustment - This is an adjustment to reflect the perceived difference in risk between the index of natural gas utilities and the index of water utilities. This adjustment originated with leverage formula workshops held in 1995 and initially increased the ROE range. In 1997 and 1998, the adjustment decreased the ROE range.

Bond Yield Differential - This reflects the difference in yields between A+/A1 rated bonds, which is the average bond rating for the water company index, and BBB-/Baa3 rated bonds. A significant leverage formula assumption is that Florida WAW utilities are comparable to water companies with the lowest investment grade bond rating, which is Baa3. This adjustment compensates for the difference between credit quality of the water company index and the assumed credit quality of Florida WAW utilities. The Bond Yield Differential is presented on Attachment 1 , page 6.

Private Placement Securities Premium - This adjustment adds 25 basis points to reflect the difference in yields on securities publicly traded and privately placed. Investors require a premium for the lack of liquidity of privately placed capital.

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After the above adjustments, the result is plugged into the average capital structure for the water utilities and gas utilities. The cost of equity is determined at a $40 \%$ equity ratio, and the leverage formula is derived. The leverage formula derived using the existing methodology updated for changes in the underlying market conditions is presented on Attachment No. 1, page 2.

## Modifications to Existing Methodology

We modified the existing methodology based on information presented at the workshops as discussed below.

Elimination of the Historical Model - We have eliminated the DCF model that uses historical growth rates. The prospective, or forecasted, growth rates consider the historical trend in dividends. At the workshops, OPC stated that this model should be eliminated. We find that the prospective DCF is more theoretically correct. In addition, the historical model weighted each company's result by market capitalization. By removing the historical model, the controversy over whether to recognize market capitalization is eliminated.

Application of the Annual DCE Model - We have initiated the use of an annual DCF model instead of a quarterly model, as employed by the existing methodology. Due to compounding, the quarterly result is higher, but it does not consider the compounding effect of monthly revenue receipts by the utility. Therefore, the annual DCE model is more appropriate for this purpose.

Elimination of the Gas Risk Premium Model - We have utilized the gas risk premium model, because the water risk premium model did not have the necessary 120 months. Also, the gas industry was thought to be a reasonable proxy for the water utilities. However, due to changes in the gas industry such as open access, the gas industry is no longer a reasonable proxy. We find it appropriate to focus on models that reflect the required return on common equity for water utilities. The results of these models can then be adjusted to reflect conditions in Florida.

Elimination of the Gas Index Risk Adjustment - The gas index risk adjustment originated with the 1995 workshops and was intended to compensate for the higher risk, as measured by the beta statistic, of the water index compared with the gas index. In 1997

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and 1998 the water index beta was lower than the gas index beta resulting in a negative adjustment to the leverage formula result. We find that the elimination of this adjustment is consistent with removing the gas index risk premium model.

Increase to the Private Placement Premium - We have increased the private placement premium from 25 to 50 basis points. Under the existing methodology, we have assumed the average Florida WAW utility can borrow funds at the Baa3 rate plus 25 basis points for the private placement premium. The private placement premium is necessary to compensate investors for the lack of liquidity with privately placed securities. This concept is sound, but quantifying the premium is difficult due to the private nature of these transactions.

At the workshops, industry representative suggested that the cost of borrowing for Florida WAW utilities might be higher than the cost rate used in the leverage formula. Our staff researched the cost of debt for water utilities and found that the cost of funds can be significantly above the level in the existing methodology. One lender indicated that the typical rate was prime plus $1 \%$ to $2.75 \%$. The current prime rate is $7.75 \%$, indicating a range of $8.75 \%$ to $10.50 \%$. Another lender indicated a minimum rate of approximately $8.5 \%$, based on the 30 -year Treasury Bond rate plus 3\%. These lenders also had requirements such as audited financial statements, which are not typical for the Florida WAW utilities. We find that a private placement premium of 50 basis points gives some additional recognition to the higher debt costs for the average Florida WAW utility.

The foregoing modifications result in two ROE models: a prospective annual DCF model and a CAPM model. We find that the CAPM model, because it is a risk premium model, will appropriately reflect the direction of interest rates as previously indicated by the gas risk premium model. The DCF and CAPM models are presented on Attachment 1, pages 4 and 5, respectively.

## Modified Leverage Formula

In summary, we find it appropriate to base the authorized range of returns on common equity for Florida WAW utilities on the following formula:

Return on Common Equity $=8.14 \%+0.789 /$ Equity Ratio

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We further limit the authorized return on common equity to a maximum of $10.12 \%$ for all equity ratios of less than $40 \%$. The approved leverage formula produces a range of returns on common equity from $8.93 \%$ to $10.12 \%$. Attachment 1, page 1, presents the calculation of the approved 1999 leverage formula.

Upon expiration of the protest period, if a timely protest is not received, this docket shall remain open. This will allow us to monitor the movement in capital costs and to readdress the reasonableness of the leverage formula as conditions warrant.

Based on the foregoing, it is
ORDERED that the provisions of this Order, issued as proposed agency action, shall become final and effective upon the issuance of a Consummating Order unless an appropriate petition, in the form provided by Rule 28-106.201, Florida Administrative Code, is received by the Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on the date set forth in the "Notice of Further Proceedings" attached hereto. 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 10.12 percent for all water and wastewater utilities with equity ratios of less than $40 \%$ in order to discourage imprudent financial risk. It is further

ORDERED that all matters contained in Attachment 1 of this Order are incorporated herein by reference. It is further

ORDERED that upon expiration of the protest period and subsequent to the issuance of a Consummating Order, this docket shall remain open to allow this Commission to monitor the movement in capital costs and to readdress the reasonableness of the leverage formula as conditions warrant.

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By ORDER of the Florida Public Service Commission this 21 st day of June, 1999.


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## NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida statutes, to notify parties of any administrative hearing that is available under section 120.57, 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 will be granted or result in the relief sought.

Mediation may be available on a case-by-case basis. If mediation is conducted, it does not affect a substantially interested person's right to a hearing.

The action proposed herein is preliminary in nature. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, in the form provided by Rule 28-106.201, Florida Administrative Code. This petition must be received by the Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on July 12, 1999.

In the absence of such a petition, this order shall become final and effective upon the issuance of a Consummating Order.

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.

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## SUMMARY OF RESULTS



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## Leverage Formula Comparison

|  | $\frac{1999 \text { STATUS }}{\underline{Q U O}}$ | APPROVED |
| :---: | :---: | :---: |
| (A) DCE ROE for Water Index (Historical) | 9.41\% |  |
| (B) DCE ROE for Water Index (Projected) ${ }^{1}$ | 8.89\% | 8.77\% |
| (C) Risk Premium ROE for Gas Index | 8.42\% |  |
| (D) Gas Index Premium | (.40) \% |  |
| (E) CAPM ROE for Water Index | 9.19\% | 9.19\% |
| AVERAGE [ $\quad((1+B) / 2)+(C+D)+E) / 3]$ | 8.79\% | 8.98\% |
| Bond Yield Differential | . $42 \%$ | . $42 \%$ |
| Private Placement Premium | . $25 \%$ | . $50 \%$ |
| Adjustment to Reflect Required Equity |  |  |
| Return at a $40 \%$ Equity Ratio | . $29 \%$ | . .22 \% |
| Cost of Equity for Average Florida WAW |  |  |
| Utility at a 40\% Equity Ratio | 9.74\% | $\underline{10.12 \%}$ |
| 1999 Leverage Eormula (STATUS QUO) |  |  |
| Return on Common Equity $=7$. | $7.89 \%+0.740 / E R$ |  |
| Range of Returns on Equity $=8$. | 8.63\%-9.74\% |  |

## APPROVED

Return on Common Equity =
$8.14 \%+0.789 / E R$
Range of Returns on Equity =
8.93\% - $10.12 \%$

Note: March 1999 Data

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Marginal Cost of Investor Capital
Average Water and Wastewater Utility


A $40 \%$ equity ratio is the floor for calculating the required return on common equity. The return on equity at a $40 \%$ equity ratio $=8.14 \%+0.789 / .40=10.12 \%$

Marginal Cost of Investor Capital
Average Water \& Wastewater Utility at $40 \%$ Equity Ratio Weighted

Marginal Marginal

| Capital Component | Ratio | $\frac{\text { Cost Rate }}{}$ |  | Cost Rate |
| :--- | ---: | ---: | ---: | ---: |
| Common Equity | $40.00 \%$ | $10.12 \%$ |  | $4.05 \%$ |
| Total Debt | $\underline{60.00 \%}$ | $8.14 \%{ }^{1}$ |  | $\underline{4.89 \%}$ |
|  | $100.00 \%$ |  | $8.93 \%$ |  |

Where: ER = Equity Ratio = Common Equity/(Common Equity + Preferred Equity + Long-Term Debt + Short-Term Debt)

* Assumed Baa3 rate for March 1999 plus a 50 -basis point private placement premium.

Source: Moody's Credit Perspectives
${ }^{1}$ Assumed Baa3 rate for March 1999 plus a 50 -basis point private placement premium.

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| Company | DIV1 | DIV2 | DIV3 | DIV4 | EPS4 | ROE 4 | GR1-4 | GR4 $\pm$ | HI-PR | LO-PR | AVER-PR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| American Water Works | \$0.86 | \$0.95 | \$1.04 | \$1.15 | \$2.50 | 12.50\% | 1.1017 | 1.0675 | \$31.19 | \$28.25 | \$29.72 |
| Aquarion Co. | \$1.12 | \$1.17 | \$1.22 | \$1.27 | \$1.70 | 12.00\% | 1.0428 | 1.0304 | \$27.50 | \$22.13 | \$24.81 |
| California Water SVC | \$1.12 | \$1.18 | \$1.24 | \$1.30 | \$2.05 | 12.00\% | 1.0509 | 1.0439 | \$26.75 | \$24.13 | \$25.44 |
| E' Town | \$2.04 | \$2.11 | \$2.18 | \$2.25 | \$3.20 | 10.50\% | 1.0332 | 1.0312 | \$44.00 | \$39.13 | \$41.56 |
| Philadelphia Suburban | \$0.70 | \$0.78 | \$0.86 | \$0.95 | \$1.45 | 12.50\% | 1.1072 | 1.0431 | \$23.25 | \$19.75 | \$21.50 |
| United Water Resources | \$0.96 | \$0.97 | \$0.99 | \$1.00 | \$1.50 | 12.50\% | 1.0137 | 1.0417 | \$20.94 | \$18.44 | \$19.69 |
| Average | \$1.13 | \$1.19 | \$1.25 |  |  |  | 1.0582 | 1.0429 |  |  | \$27.12 |

Cost of Equity

| Annually | . 087722 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Quarterly | . 088852 |  |  |  |  |
| Discounted Cash Flows: | 1.058218 | 1.022863 | . 989545 | . 956409 | 22.27917 |
| March 1999 Average Stock Price <br> Less 3\% flotation Costs <br> [ $\mathrm{Po}(1-\mathrm{fC})$ ] | $=\$ 26.31$ |  |  |  |  |
| Cost of equity required to match the current stock price with the expected cash flows | $=8.77 \%$ |  |  |  |  |

## Source:

1. S\&P Stock Guide: Apr., 1999 with March Stock Prices
2. DPS, EPS, ROE - Value Line Edition 9, February 5, 1999.

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## Capital Asset Pricing Model Cost of Equity for Water and Wastewater Industry

```
CAPM analysis formula
K = RF + Beta(MR - RF)
K = Investor's required rate of return
RF = Risk-free rate (Blue Chip forecast for 30-
year Treasury bond)
Beta = Measure of industry-specific risk (Average
        for water utilities followed by Value Line)
MR = Market return
\underline{9.19% }}=5.38% +.57(12.07%-5.38%
```

Source: Blue Chip Financial Forecasts, April 1, 1999
Value Screen, April 1999

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Attachment ${ }^{1}$
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BOND YIELD DIFFERENTIALS
Public Utility Long Term Bond Yield Averages UFDATED: OS/O9
Long-Term Corporate Bond Yield Averages Avg. Public Utility

| 120 Month Average - |  |  | 9.07\% |  | 9.07 |  | 5.25\% |  | 5.25 \% |  | $5.25 \%$ |  | 9.30\% |  | $9.30 \%$ |  | $9.30 \%$ |  | $9.30 \%$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $Y R$. | MONTH | Aaa | SPREAD | Aal | SPREAD | A. 2 | SPREAD | Aa 3 | SPREAD | A1 | spread | A. 2 | spread | A. 3 | SPREAD | Baal | spread | Baa2 | spread | Baa3 |
|  | MAR | 6.78 | 0.17 | 6.95 | 0.17 | 7.11 | 0.05 | 7.16 | 0.05 | 7.21 | 0.05 | 7.26 | 0.10 | 7.36 | 0.10 | 7.45 | 0.10 | 7.55 | 0.10 | 7.65 |
|  | FEB | 6.56 | 0.19 | 6.75 | 0.19 | 6.94 | 0.05 | 6.99 | 0.05 | 7.04 | 0.05 | 7.09 | 0.11 | 7.20 | 0.11 | 7.30 | 0.11 | 7.41 | 0.11 | 7.52 |
| 1999 | JAN | 6.41 | 0.21 | 6.62 | 0.21 | 6.82 | 0.05 | 6.87 | 0.05 | 6.92 | 0.05 | 6.97 | 0.11 | 7.08 | 0.11 | 7.19 | 0.11 | 7.30 | 0.11 | 7.41 |
|  | DEC | 6.43 | 0.18 | 6.61 | 0.18 | 6.78 | 0.04 | 6.82 | 0.04 | 6.87 | 0.04 | 6.91 | 0.11 | 7.02 | 0.11 | 7.13 | 0.11 | 7.24 | 0.11 | 7.35 |
|  | NOV | 6.59 | 0.15 | 6.74 | 0.15 | 6.89 | 0.05 | 6.94 | 0.05 | 6.98 | 0.05 | 7.03 | 0.09 | 7.12 | 0.09 | 7.22 | 0.09 | 7.31 | 0.09 | 7.40 |
|  | OCT | 6.64 | 0.08 | 6.72 | 0.08 | 6.80 | 0.05 | 6.85 | 0.05 | 6.91 | 0.05 | 6.96 | 0.06 | 7.02 | 0.06 | 7.07 | 0.06 | 7.13 | 0.06 | 7.19 |
|  | SEP | 6.66 | 0.06 | 6.72 | 0.06 | 6.78 | 0.05 | 6.83 | 0.05 | 6.88 | 0.05 | 6.93 | 0.07 | 7.00 | 0.07 | 7.06 | 0.07 | 7.13 | 0.07 | 7.20 |
|  | AUG | 6.75 | 0.06 | 6.81 | 0.06 | 6.87 | 0.04 | 6.91 | 0.04 | 6.96 | 0.04 | 7.00 | 0.07 | 7.07 | 0.07 | 7.13 | 0.07 | 7.20 | 0.07 | 7.27 |
|  | JUL | 6.80 | 0.06 | 6.86 | 0.06 | 6.91 | 0.04 | 6.95 | 0.04 | 6.99 | 0.04 | 7.03 | 0.07 | 7.10 | 0.07 | 7.16 | 0.07 | 7.23 | 0.07 | 7.30 |
|  | JUN | 6.80 | 0.06 | 5.86 | 0.06 | 6.91 | 0.04 | 6.95 | 0.04 | 6.99 | 0.04 | 7.03 | 0.06 | 7.09 | 0.06 | 7.15 | 0.05 | 7.21 | 0.06 | 7.27 |
|  | MAY | 6.94 | 0.04 | 5.98 | 0.04 | 7.02 | 0.05 | 7.07 | 0.05 | 7.11 | 0.05 | 7.16 | 0.06 | 7.22 | 0.06 | 7.28 | 0.06 | 7.34 | 0.06 | 7.40 |
|  | APR | 6.94 | 0.04 | 6.98 | 0.04 | 7.02 | 0.05 | 7.07 | 0.05 | 7.11 | 0.05 | 7.16 | 0.07 | 7.23 | 0.07 | 7.30 | 0.07 | 7.37 | 0.07 | 7.44 |
|  | MAR | 6.96 | 0.04 | 7.00 | 0.04 | 7.04 | 0.04 | 7.08 | 0.04 | 7.12 | 0.04 | 7.16 | 0.07 | 7.23 | 0.07 | 7.30 | 0.07 | 7.37 | 0.07 | 7.44 |
|  | FEB | 6.91 | 0.04 | 6.95 | 0.04 | 6.99 | 0.04 | 7.03 | 0.04 | 7.08 | 0.04 | 7.12 | 0.08 | 7.20 | 0.08 | 7.28 | 0.08 | 7.36 | 0.08 | 7.44 |
| 1998 | JAN | 6.85 | 0.05 | 6.90 | 0.05 | 6.94 | 0.04 | 6.98 | 0.04 | 7.01 | 0.04 | 7.05 | 0.08 | 7.13 | 0.08 | 7.20 | 0.08 | 7.28 | 0.08 | 7.36 |
|  | DEC | 6.99 | 0.04 | 7.03 | 0.04 | 7.07 | 0.03 | 7.10 | 0.03 | 7.13 | 0.03 | 7.16 | 0.08 | 7.24 | 0.08 | 7.33 | 0.08 | 7.41 | 0.08 | 7.49 |
|  | NOV | 7.09 | 0.03 | 7.12 | 0.03 | 7.15 | 0.03 | 7.18 | 0.03 | 7.22 | 0.03 | 7.25 | 0.08 | 7.33 | 0.08 | 7.41 | 0.08 | 7.49 | 0.08 | 7.57 |
|  | OCT | 7.18 | 0.05 | 7.23 | 0.05 | 7.28 | 0.02 | 7.30 | 0.02 | 7.33 | 0.02 | 7.35 | 0.11 | 7.46 | 0.11 | 7.56 | 0.11 | 7.67 | 0.11 | 7.78 |
|  | SEP | 7.45 | 0.05 | 7.50 | 0.05 | 7.54 | 0.01 | 7.55 | 0.01 | 7.57 | 0.01 | 7.58 | 0.09 | 7.67 | 0.09 | 7.75 | 0.09 | 7.84 | 0.09 | 7.93 |
|  | AUG | 7.39 | 0.04 | 7.43 | 0.04 | 7.46 | 0.02 | 7.48 | 0.02 | 7.49 | 0.02 | 7.51 | 0.14 | 7.65 | 0.14 | 7.79 | 0.14 | 7.93 | 0.14 | 8.07 |
|  | JUL | 7.29 | 0.07 | 7.36 | 0.07 | 7.43 | 0.02 | 7.45 | 0.02 | 7.46 | 0.02 | 7.48 | 0.13 | 7.61 | 0.13 | 7.74 | 0.13 | 7.87 | 0.13 | 8.00 |

Source: Moody's Credit Perspective

## 12/31/98 Equity Ratios of Water Index Companies


[^2]AUTHORIZED RANGE OF RETURNS ON COMMON EQUITY FOR WATERAND WASTEWATER UTILITIES, PURSUANT TO SECTION
367.081(4)(F), FRS.

## 99-1224-PAA

Attached is a NOTICE OF PROPOSED AGENCY ACTION ORDER ESTABLISHING AUTHORIZED RANGE OF RETURNS ON COMMON EQUITY ORDER, to be issued in the above-referenced docket.
(Number of pages in order - 18)14

TV/dr


Attachment
cc: Division of Auditing and Financial Analysis (Lester, Draper) Division of Water and Wastewater (Bethea)

I: \990006-0.TV



[^0]:    ${ }^{1} 1997$ \& 1998 DCE ROE for Water Index calculated using historical data weighted by market capitalization amounts listed in Value Line.
    ${ }^{2} 1997$ \& 1998 used quarterly DCE models, 1999 uses the Annual DCE model.

[^1]:    The Status Quo uses a quarterly DCF model and the approved formula uses an annual DCF model.

[^2]:    Source: Utilities' December 31, 1998, 4th Quarter - S.E.C. 10-Qs

