Exhibit No.:
Issues: Rate of Return on Equity
Capital Structure
Witness: Pauline M. Ahern
Exhibit Type: Rebuttal
Sponsoring Party: Missouri-American Water Company
Case No.: WR-2003-0500
and WC-2004-0168
Date: November 10, 2003

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2003-0500 and WC-2004-0168

SCHEDULES TO ACCOMPANY THE

REBUTTAL TESTIMONY

OF

PAULINE M. AHERN

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

JEFFERSON CITY, MISSOURI

Schedule PMA-12

No. 3819

DATA INFORMATION REQUEST
Missouri American Water Company
CASE NO. WR-2003-0500

Requested From: Ed Grubb
Date Requested: August 15, 2003
Information Requested:

Please indicate whether Missouri-American Water Company's capital structure is independent of American Water and its other subsidiaries on a consolidated basis. Please explain the qualities that make Missouri-American Water Company's capital structure independent of American Water and its other subsidiaries on a consolidated basis.

Requested By: David Murray, Financial Analyst, MoPSC Staff

Information Provided:

There are several factors that require Missouri-American Water Company (MAWC) to meet its own capital needs and to maintain a capital structure independent of its parent and other subsidiaries of American Water

First, MAWC's capital structure, on a pro forma basis at November 30, 2003, consists of $290,035,000 long-term debt of which $185,000,000 or 63.7% are tax-exempt bonds issued directly by MAWC. In addition, that capital structure includes $2,680,000 in preferred stock directly issued by MAWC to the capital markets and $221,714,180 in common equity that includes $122,955,389 of retained earnings.

Second, MAWC's long-term debt is secured by its own assets. That debt is not secured by or guaranteed by American Water or any of its subsidiaries. Moreover, MAWC's assets do not secure the debt of American Water, or any of its subsidiaries. While MAWC does join with other regulated subsidiaries of American Water through American Water Capital Corp. to access debt capital markets and minimize transaction costs, such debt is issued by each participating subsidiary independent of other participants in the larger debt issue. These lower issuance costs are reflected in MAWC's capital cost and passed on to its customers during the rate setting process.

Third, terms under which MAWC issued long-term debt, limit its ability to finance new projects with additional debt if agreed-upon debt ratios would be exceeded. Therefore, from time to time equity infusions are needed to maintain MAWC's debt ratios at agreed-upon limits. These ratios vary among subsidiaries based upon their indentures.

While common equity capital has been provided to MAWC by American Water, $122,955,389 or 55.5% of the total common equity on a pro forma basis as of November 30, 2003 on the books of MAWC consists of retained earnings, supplied by MAWC's customers/ratepayers and is not the result of any direct monetary infusion from American Water.

Additionally, infusions of common equity historically supplied by American Water to balance MAWC's capital ratios and facilitate financings, are common equity issues made by MAWC without incurring the transaction costs associated with public issuance of common equity. This lower cost of capital is being passed on to MAWC's customers.

Hyperlink:

Date Response Provided:

Signed By: ______________________

Prepared By: J. Jenkins

STANDARD &POOR'S	RATINGSDIRECT

Return to Regular Format

Research:

American Water Capital Corp.

Publication date: 01-Aug-2003
Credit Analyst: Dimitri Nikas, New York (1) 212-438-7807

Corporate Credit Rating

A/Negative/A-1

Business profile.
Above average
Financial Policy.
Aggressive
Debt Maturities.
2003 $199 mil.
2004 $58 mil.
2005 $62 mil.
2006 $1.072 bil.
2007 $84.9 mil.
Bank Lines/Liquid Assets:
The company has a 364-day $500 million credit facility maturing on July 31, 2003, which is used as back-up for the company's $500 million commercial paper program. As of March 31, 2003, approximately $169 million were outstanding under the commercial paper program. Given this level of liquidity, upcoming debt maturities should not pose a liquidity problem.

Outstanding Rating(s)

American Water Capital Corp.

Sr unsecd debt	
Local currency	A-
CP	
Local currency	A-1

Corporate Credit Rating History

June 19, 2000	A-
Sept. 21, 2000	A-/A-2
July 15, 2003	A/A-1

Company Contact

Major Rating Factors

Strengths.

- Regulatory environments are generally supportive of credit quality.
- Regulatory and operating diversity with operations in over 20 states.
- Attractive service territories with mostly residential and small commercial customers.
- Low operating risk water production and distribution operations.
- Strong competitive position due to high barriers to entry.

Weaknesses:

- Involvement in nonregulated contract management operations increases business risk to some extent.

Rationale

The ratings on American Water Capital Corp. (AWCC), a wholly owned subsidiary of American Water Works Co. Inc., reflect the strong support arrangement with parent American Water Works and, in turn, the strong parental support stemming from ownership of American Water Works by the German multi-utility RWE AG. AWCC acts as the funding vehicle for American Water Works' regulated water utility companies.

In determining the ratings on AWCC, Standard & Poor's considers the stand-alone credit profile of American Water Works and then notches up the stand-alone rating to reflect the material level of parental support from RWE and the core nature of American Water Works' regulated water operations to the RWE water division. However, Standard & Poor's does not equalize the ratings on the two companies. While the operations of American Water Works are core to the RWE group, the stand-alone credit profile of American Water Works is weaker than that of the consolidated credit profile of RWE. The outlook is negative, reflecting Standard & Poor's presumption that the credit quality of AWCC will be dictated by RWE, and movements in ratings could be in the same direction. Nevertheless, movement in ratings will be evaluated periodically to ensure that the ratings accurately reflect Standard & Poor's assessment of the level of support from RWE to American Water Works.

AWCC's stand-alone credit profile reflects parent American Water Works' strong business position, which is characterized by regulatory diversity and operations in generally supportive regulatory environments; a steadily growing customer base that is largely residential and commercial; geographic diversity with operations in more than 20 states; high-quality operations that comply with all the latest water production standards promulgated by the EPA; and a strong competitive position by virtue of the high barriers to entry encountered by new entrants. These strengths are tempered mainly by American Water Works' involvement in nonregulated, contract-management water business, which carries significantly more risk relative to the regulated water operations. While currently the unregulated ventures are not material contributors to revenues and cash flows, as such ventures increase in size and scope, they could influence American Water Works' business risk profile. Combined with a financial profile that is relatively weak, Standard & Poor's estimates that on a stand-alone basis, AWCC could be rated at the upper end of the 'BBB' rating category.

American Water Works is the largest water utility holding company in the U.S. with 2.8 million customers; it operates in 23 states. It is expected to contribute about 40% of RWE's water division revenues and EBITDA. About 80% of revenues and 75% of sales come from residential and commercial customers, providing a stable customer base with predictable water-usage patterns. The geographic diversity tempers the effect of adverse weather patterns on the company's cash flow and cushions the company from unfavorable rate decisions in any particular jurisdiction. On average, the regulatory environment is viewed as supportive because many states afford recovery of construction expenses with minimal delay; provide for the implementation of single-tariff pricing, reducing the complexity of multi-tariff rate proceedings; and provide regular rate increases.

American Water Works' financial profile is relatively weak for the current rating. Debt leverage has improved dramatically after the merger with RWE was completed, dropping to under 50% from just under 70% at year-end 2002. Funds from operations (FFO) to interest coverage is expected to continue to be under 3x over the intermediate term, while FFO to average total debt is expected to be just over 10% in the same time period. Capital spending needs will only be partly internally funded with the balance funded through debt issuances in the capital markets or through intercompany loans with RWE.

Liquidity.

AWCC has a 364-day $500 million credit facility maturing in July 2003, which is used as backup for the company's $500 million commercial paper program. At March 31, 2003, about $200 million was outstanding under the commercial paper program. Given this level of liquidity, upcoming debt maturities of $69 million in 2003, $41 million in 2004, and $59 million in 2005 should not pose a problem. Nevertheless, Standard & Poor's expects that RWE will continue to provide support in the form of equity infusions and intercompany loans, alleviating any liquidity constraints.

Outlook

The negative outlook on AWCC reflects the outlook on its ultimate parent RWE and the likelihood that if the ratings on RWE are lowered, then the ratings on AWCC could be lowered as well. The negative outlook on RWE reflects the very limited headroom available to the company at the existing rating level. Any debt-funded acquisitions, a change in the company's strategy of disposing of its noncore activities over the medium term, or the introduction of a regulator in Germany would put pressure on the rating.

Business Description

AWCC is the financing subsidiary of American Water Works, the largest U.S water company with regulated utility operations serving about 2.9 million customers in 23 states. American Water Works was purchased by RWE AG in January 2003 for $4.6 billion. American Water Works is expected to contribute about 40% of RWE's water division revenues and EBITDA.

Rating Methodology

In determining the ratings of AWCC, Standard & Poor's considers the stand-alone credit profile of American Water Works and then notches up the stand-alone rating to reflect the material level of parental support from RWE as well as the core nature of American Water Works' regulated water operations to the RWE water division.

However, Standard & Poor's does not equalize the ratings on RWE and American Water Works. Although the operations of American Water Works are core to the RWE group, American Water Works' stand-alone credit profile is weaker than RWE's consolidated credit profile.

There is a support agreement between American Water Works and AWCC, which links the two entities, but American Water Works does not guarantee debt issued by AWCC. As a result of the current arrangement, the credit quality of AWCC is the same as that of American Water Works. In turn, the credit quality of American Water Works reflects the consolidated credit profiles of its operating subsidiaries.

The outlook on AWCC reflects Standard & Poor's presumption that the AWCC's credit quality will be dictated by RWE, and movements in ratings could be in the same direction. Nevertheless, movement in ratings will be evaluated periodically, to ensure that the ratings accurately reflect Standard & Poor's assessment of the level of support from RWE to American Water Works.

Business Profile

American Water Works' regulated utility business operates under a diverse regulatory environment with operations in 23 states. Standard & Poor's views the regulatory environment as supportive of credit quality because each regulatory jurisdiction in which the regulated subsidiaries operate provides for some combination of the following policies:

- Use of a forward-looking test year, which results in rates reflective of future costs;
- Intermim-period recovery of interest and depreciation expense for major construction projects until new rates reflect the cost of the project;
- Rate recovery for utility-plant returns before a plant goes into service, instead of capitalizing an allowance for funds used during construction;
- Cost recovery for distribution system infrastructure replacements without needing to file a full rate proceeding; and
- Single tariff pricing, which is easier to implement, reduces the complexity of rate proceedings, and spreads fixed costs over a larger customer base.

During the 16-month merger approval process with RWE, requests for rate increases were postponed. Accordingly, in 2004 American Water Works' regulated subsidiaries will be filing requests for rate increases to recover capital expenditures already in place. Where these rate increases are substantial, the regulated subsidiaries may face some resistance from regulators.

The customer base is largely residential (approximately 58% of revenues, 51% of sales) and commercial (approximately 21% of revenues, 24% of sales), providing for significant stability in the revenues and predictable water usage patterns. There is no material customer concentration. The consistency of the customer base has remained relatively stable over time, despite the rapid growth. The large degree of fragmentation present in the water utility industry, combined with the substantial capital needs of many smaller water companies to meet increasingly stringent water quality standards, affords numerous opportunities for consolidation. American Water Works has been aggressively acquiring private and municipal water systems, leading to an above average customer growth rate.

Standard & Poor's views the regulated water operations as having low operating risk, thereby providing support to credit quality. Furthermore, the American Water Works' regulated utility subsidiaries are fully compliant with all material federal and local standards for water production, mitigating any concerns of noncompliance. Approximately 40% of the company's capital spending budget is targeted toward updating and improving its distribution system and include extensions to serve new areas as well as upgrades of existing systems.

The nonregulated business can also have low operating risk, as these ventures are in the same line of business. However, the risk in these ventures is overbidding for a contract and not earning an adequate return, or earning a return over a disproportionately long period of time. Nevertheless, capital spending needs for nonregulated operations continue to be modest at less than 4% of total capital spending.

American Water Works has a strong competitive position stemming from its extensive presence in the water utility industry and the high quality of service provided. The company acts as a consolidator by acquiring both large and small companies. Barriers to entry are high in the water industry because a new entrant must have not only the capital to compete against a company as large as American Water Works, but also must be able to demonstrate a good historical track record

Financial Profile

American Water Works had an aggressive financial policy evidenced by liberal use of debt to fund growth in the past few years. As a result, at year-end 2002, debt leverage increased to about 69% of total capital although the measure dropped to 48% in 2003.

Financial Policy: Aggressive

Profitability/cash flow protection.

American Water Works' cash flow protection measures weakened substantial by year-end 2002, as debt leverage increased substantially and the company postponed filing for necessary rate increases. As a result, FFO to interest coverage reduced to less than 2.5x, while FFO to total debt reduced to less than 10%. Furthermore, internally generated cash funded only about 50% of total capital spending needs. Subsequent to the acquisition by RWE, American Water Works' cash flow protection measures are expected to improve marginally, in part reflecting the implementation of needed rate increases and organic growth. Nevertheless, internally generated cash is expected to continue to be inadequate to fully fund capital expenditures in future years, requiring further external funding and placing pressure on cash flow protection measures. As a result, FFO to interest coverage is expected to reach 3x, and FFO to average total debt should reach 11% over the intermediate term.

Capital structure/financial flexibility.

Debt leverage has steadily increased in recent years, reflecting the incremental use of debt to fund acquisitions and, at year-end 2002, debt leverage was almost 69%. However, subsequent to the merger with RWE, debt leverage has improved dramatically, with total debt to total capital dropping to about 48% in 2003. Although American Water Works' equity increased as a result of the transaction, the absolute level of debt increased further, continuing to place pressure on the financial profile. Furthermore, debt leverage is expected to continue to rise as free cash flow remains insufficient to fund capital spending needs.

American Water Works has strong financial flexibility mainly from RWE's parental support, which Standard & Poor's assumes will provide funding for American Water Works' short-term debt needs. Furthermore, the level of capital expenditures poses a challenge because the bulk of the spending (over 40%) is for transmission and distribution projects, including expansion, implying that such capital expenditures may not be delayed or postponed.

Missouri-American Water Company
Capital Structure Based upon Total Permanent Capital for
the Proxy Group of Seven C. A. Turner Water Companies
for the Years 1998 through 2002

	2002	2001	2000	1999	1998	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	59.60 %	61.01 %	47.65 %	51.04 %	43.64 %	52.59 %
Minority Interest	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	0.00	0.36	0.51	0.60	0.72	0.44
Common Equity	40.40	38.63	51.84	48.36	55.64	46.97
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Artesian Resources Corp.						
Long-Term Debt	55.62 %	59.33 %	60.94 %	52.05 %	52.94 %	56.18 %
Minority Interest	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	0.17	0.67	0.79	1.13	1.44	0.84
Common Equity	44.21	40.00	38.27	46.82	45.62	42.98
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	55.36 %	50.97 %	48.43 %	46.85 %	44.58 %	49.24 %
Minority Interest	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	0.77	0.85	0.89	1.02	1.12	0.93
Common Equity	43.87	48.18	50.68	52.13	54.30	49.83
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	52.24 %	53.68 %	52.43 %	52.54 %	52.13 %	52.60 %
Minority Interest	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	2.41	2.47	2.59	2.59	3.33	2.68
Common Equity	45.35	43.85	44.98	44.87	44.54	44.72
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Philadelphia Suburban Corp.						
Long-Term Debt	55.58 %	52.87 %	52.86 %	53.59 %	52.96 %	53.57 %
Minority Interest	0.04	0.08	0.31	0.33	0.00	0.15
Preferred Stock	0.02	0.11	0.19	0.22	0.64	0.24
Common Equity	44.36	46.94	46.64	45.86	46.40	46.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southwest Water Company						
Long-Term Debt	57.07 %	55.97 %	51.45 %	46.72 %	49.95 %	52.23 %
Minority Interest	0.39	0.00	0.00	0.00	0.00	0.08
Preferred Stock	0.35	0.41	0.51	0.68	0.74	0.54
Common Equity	42.19	43.62	48.04	52.60	49.31	47.15
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	46.76 %	47.70 %	50.25 %	51.55 %	51.30 %	49.51 %
Minority Interest	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	53.24	52.30	49.75	48.45	48.70	50.49
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Seven C. A. Turner Water Companies						
Long-Term Debt	54.61 %	54.50 %	52.00 %	50.62 %	49.64 %	52.27 %
Minority Interest	0.06	0.01	0.04	0.05	0.00	0.03
Preferred Stock	0.53	0.70	0.79	0.89	1.14	0.81
Common Equity	44.80	44.79	47.17	48.44	49.22	46.88
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information: Standard & Poor's Compustat Services. Inc.. PC Plus Research Insight Data Base

Missouri-American Water Company
Historical & Projected Growth Rates for
Mr. Murray's Four Comparable Water Utility Companies
Corrected to Exclude Negative Growth Rates and S&P's Forecasted Growth in EPS

	1	2	3	4	5
Company Name	Historical Growth Rate (DPS, EPS, & BVPS) (1)	Projected 5-Year Growth I/B/E/S (median) (1)	Projected 3-5 Year EPS Growth (Value Line) (1)	Average Projected Growth (3)	Average Historical & Projected Growth
American States Water Company	3.03%	3 00%	6 00%	4.50%	3.77%
California Water Services Group	1.24% (2)	3.00%	9.00%	6.00%	3.62%
Middlesex Water Company	2.81%	7.00%	7 00%	7.00%	4.91%
Philadelphia Suburban Corporation	7.68%	10.00%	10.00%	10.00%	8.84%
Average	3.69%	5.75%	8.00%	6.88%	5.29%
				Range of Growth Rate	4.79% - 5.79%

Notes: (1) From Mr Murray's Schedule 15
(2) From Mr Murray's Schedule 14-3, average of 10-Year Average DPS, DPS & BVPS growth rate and 5-Year Average DPS, EPS & BVPS growth rate (excluding negative EPS growth rate of 7.34% for 1997-2002 from Schedule 14-2).
(3) Does not include Projected 5-Year EPS Growth (S&P) from Mr. Murray's Schedule 15 because the source of S&P's growth rates is I/B/E/S, as

STANDARD
&POOR'S

Earnings Guide

JULY 2003

HOW TO USE THE EARNINGS GUIDE

It is necessary to carefully read the following instructions and those on Pages 1 and 2 to interpret the abbreviations and the data contained in the Earnings Guide.

Name of Issue	Common Stock Rank	Fiscal	Actual EPS	Street Estimates	5-Yr Proj EPS Growth Rate-%	Annual Revs. ($Mil.)	Net Tangible Book ($/Shr)	Cash Flow ($/Shr)	Month End Price	P/E	Next EPS Rept Date
NAME OF ISSUE is not the exact corporate title of the company. Also, because of space limitation, the occasional use of abbreviations has been necessary.	**STANDARD AND POOR'S** ranking definitions are found on Page 2.	**FISCAL** is the month in which the corporation's year ends. Details of stock splits and stock dividends, effected during the past five years are reported by footnotes which carry numerals corresponding to those attached to the fiscal. Adjustments have been made for all stock dividends.	**ACTUAL EPS** is the last fiscal earnings reported. See Page 1 for additional information.	**STREET ESTIMATES:** The mean is the average EPS of all contributors; the highest and lowest estimate is also given to give the user a sense of the estimate's range. The number of contributors indicates how many analysts are following the issue. Directional arrows are used to signal when a dramatic change in the annual estimate has occurred. See Page 1 for additional information.	**ESTIMATED FIVE-YEAR FUTURE EARNINGS GROWTH RATE %** is the annualized compounded growth rate projected for the next five years. The rate is based on the last actual reported annual earnings. A company which has reported poor or negative earnings may show a high projected growth rate due to its small base.	**SALES REVENUES** are as reported by the corporation in its last Annual Report in millions of dollars.	**BOOK VALUE** is the tangible book value per common share after intangibles (goodwill, debt discount, pfd liquidating value...) have been deducted.	**CASH FLOW** (given for industrial companies only) is net income (before extraordinary items and discontinued operations and after preferred dividends) plus depreciation, depletion and amortization. It is reported for the last actual fiscal period.	**PRICE** is the last sale or bid for the month indicated.	**P/E RATIO** is derived by dividing current price by the estimated new year earnings. P/E ratios are shown for values of 1 thru 99. If an estimate is negative, a 'd' is presented.	**DATE OF NEXT EPS REPORT** is an estimated date of the next expected quarterly or annual earnings report by the company.

STOCK SPLITS & DIVIDENDS are indicated by superior numbers after the fiscal column. Details appear in footnotes which carry numerical symbols corresponding to those in the column. Adjustments to earnings, book value, and cash flow have been made for all stock splits and stock dividends.

Missouri-American Water Company
Discounted Cash Flow (DCF) Cost-of-Common-Equity Estimates
for Mr. Murray's Four Comparable Water Utility Companies
Corrected to Reflect the Proper Calculation of Growth Rate

	1	2	3
Company Name	Projected Dividend Yield (1)	Average Growth Rate (2)	Cost of Common Equity (3)
American States Water Company	3.51%	3.77%	7.28%
California Water Services Group	4.23%	3.62%	7.85%
Middlesex Water Company	3.83%	4.91%	8.74%
Philadelphia Suburban Corporation	2.58%	8.84%	11.42%
Average	3.54%	5.29%	8.82%

Proposed Dividend Yield	3.54%
Range of Growth	4.79% - 5.79%
Estimated Cost of Common Equity	8.33% - 9.33%
Adjustment to Reflect a BBB Bond Rating (4)	0.33
Adjusted Estimated Cost of Common Equity	8.66% - 9.66%
Midpoint	9.16%

Notes:
(1) From Mr. Murray's Schedule 17.
(2) From Schedule PMA-15.
(3) Column 1 + Column 2.
(4) From page 33 of Mr. Murray's direct testimony.

Missouri-American Water Company
Capital Asset Pricing Model (CAPM) Cost-Of-Common-Equity Estimates
for Mr. Murray's Four Comparable Water Utility Companies Corrected
to Reflect a Prospective Risk-Free Rate and
the Appropriate Historical Equity Risk Premium

	1	2	3	4	5
Company Name	Risk-Free Rate (1)	Company's Beta (2)	Market Risk Premium (1926 - 2002) (3)	Beta Adjusted Market Risk Premium (4)	Cost of Common Equity (5)
American States Water Company	5.60%	0.60	7.00%	4.20%	9.80%
California Water Services Group	5.60%	0.60	7.00%	4.20%	9.80%
Middlesex Water Company	5.60%	0.55	7.00%	3.85%	9.45%
Philadelphia Suburban Corporation	5.60%	0.70	7.00%	4.90%	10.50%
Average	5.60%	0.61	7.00%	4.29%	9.89%

Notes: (1) Average forecast based upon six quarterly estimates of long-term Treasury bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated October 1, 2003 (see page 2 of this Schedule). The estimates are detailed below.

Fourth Quarter 2003	5.3 %
First Quarter 2004	5.4
Second Quarter 2004	5.5
Third Quarter 2004	5.6
Fourth Quarter 2004	5.8
First Quarter 2005	5.9
Average	5.6 %

(2) From Mr. Murray's Schedule 18
(3) Market equity risk premium is the difference between the total market return from 1926-2002 of 12.2% and the 1926-2002 income return on long-term government bonds of 5.2% (7.0% = 12.2% - 5.2%) from Stocks, Bonds, Bills and Inflation - 2003 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL, 2003. It is appropriate to use the income return on long-term government bonds to derive an equity risk premium "because it truly represents the truly riskless portion of the return." (p. 70 of Stocks, Bonds, Bills and Inflation - Valuation Edition 2003 Yearbook, Ibbotson Associates, Inc., Chicago, Il, 2003
(4) Column 2 * Column 3.
(5) Column 1 + Column 4

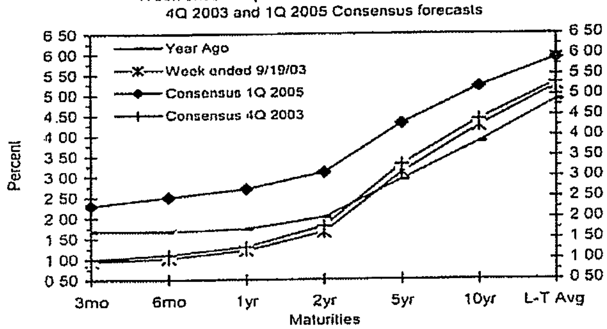
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Q**	4Q	1Q	2Q	3Q	4Q	1Q
Interest Rates	Sep. 19	Sep. 12	Sep. 5	Aug. 29	August	July	June	*3Q 2003*	2003	2004	2004	2004	2004	2005
Federal Funds Rate	1 02	0 96	1 01	1 00	1.03	1 01	1 22	*1 01*	1.0	1.0	1.2	1.5	1.8	2.3
Prime Rate	4 00	4.00	4 00	4 00	4 00	4.00	4 22	*4 00*	4.0	4.0	4.2	4.5	4.8	5.3
LIBOR, 3-mo	1 14	1 14	1 14	1 14	1 14	1.11	1 10	*1 13*	1.2	1.2	1.4	1.7	2.1	2.5
Commercial Paper, 1-mo.	1 02	1 01	1.04	1 02	1 03	1 01	1 06	*1 02*	1.1	1.1	1.3	1.6	2.0	2.4
Treasury bill, 3-mo.	0.95	0 96	0.97	1 00	0.97	0 92	0.94	*0 95*	1.0	1.1	1.2	1.5	1.9	2.3
Treasury bill, 6-mo.	1.02	1 03	1 05	1 06	1.05	0 97	0.94	*1 02*	1.1	1.2	1.4	1.7	2.1	2.5
Treasury bill, 1 yr	1.21	1 22	1 33	1 35	1 31	1 12	1.01	*1 23*	1.3	1.4	1.6	2.0	2.3	2.7
Treasury note, 2 yr.	1 65	1 69	1 92	1.98	1 86	1 47	1 23	*1 69*	1.8	1.9	2.1	2.5	2.8	3.1
Treasury note, 5 yr	3 10	3 23	3.51	3.49	3 37	2.87	2 27	*3 17*	3.3	3.4	3.6	3.8	4.0	4.3
Treasury note, 10 yr.	4 23	4 34	4 52	4 49	4 45	3 98	3 33	*4 26*	4.4	4.5	4.7	4.8	5.0	5.2
Treasury Long-Term Avg	5 22	5.30	5 41	5 37	5.41	5 00	4 45	*5 24*	5.3	5.4	5.5	5.6	5.8	5.9
Corporate Aaa bond	5.72	5.78	5 90	5 87	5.88	5 49	4 97	*5 72*	5.9	6.0	6.1	6.3	6.4	6.6
Corporate Baa bond	6.77	6 86	6 96	6 97	7.01	6 62	6.19	*6 83*	7.0	7.1	7.2	7.3	7.4	7.6
State & Local bonds	4 84	4 94	5 07	5.07	5 10	4 74	4.33	*4 93*	5.0	5.1	5.1	5.3	5.3	5.4
Home mortgage rate	6.01	6.16	6.44	6 32	6 26	5.63	5 23	*6 03*	6.2	6.3	6.4	6.5	6.7	6.9
	History								Consensus Forecasts-Quarterly Avg.					
	4Q	1Q	2Q	3Q	4Q	1Q	2Q	*3Q**	4Q	1Q	2Q	3Q	4Q	1Q
Key Assumptions	2001	2002	2002	2002	2002	2003	2003	*2003*	2003	2004	2004	2004	2004	2005
Major Currency Index	105 3	108 2	104.4	100 0	100.0	95 1	90 8	*90 7*	90.0	89.8	89.9	89.9	90.3	90.5
Real GDP	2.7	5 0	1 3	4.0	1 4	1 4	3 3	*4 9*	4.0	3.8	3.8	3.8	3.6	3.6
GDP Price Index	-0.5	1 3	1 2	1 0	1.6	2.4	1 0	*1 5*	1.4	1.6	1.6	1.7	1.8	1.9
Consumer Price Index	-0.7	1.4	3.4	2.2	2 0	3 8	0 7	*2 0*	1.7	1.8	1.9	2.1	2.1	2.3

[1]Individual panel members' forecasts are on pages 4 through 9 Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15 LIBOR quotes available from *The Wall Street Journal* Definitions reported here are same as those in FRSR H 15. Treasury yields are reported on a constant maturity basis. Historical data for the U S Federal Reserve Board's Major Currency Index is from FRSR H 10 and G 5 Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA) Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS) **Interest rate data for 3Q 2003 based on historical data through the week ended September 19.. Data for 3Q 2003 Major Currency Index also is based on data through week ended September 19. Figures shown for 3Q 2003 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question survey this month of the panel members.*

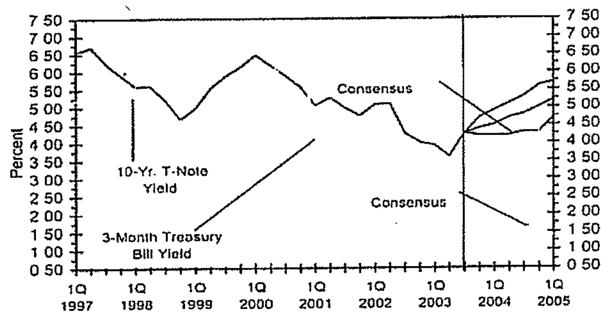
U.S. Treasury Yield Curve

Week ended September 19, 2003 and Year Ago vs 4Q 2003 and 1Q 2005 Consensus forecasts



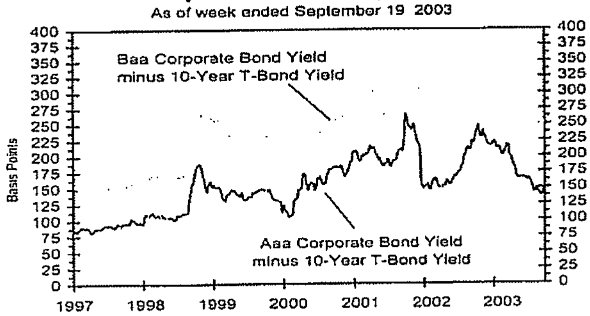
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield

(Quarterly Average) History Forecast



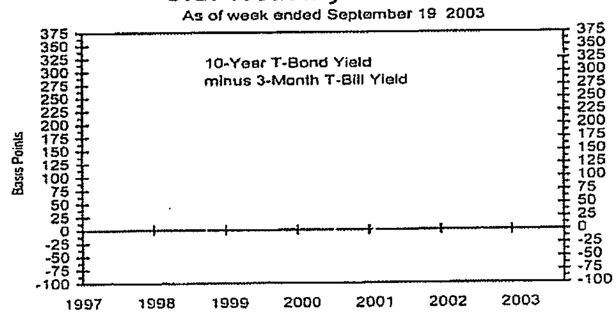
Corporate Bond Spreads

As of week ended September 19 2003



U.S. Treasury Yield Curve

As of week ended September 19 2003



Missouri-American Water Company
Capital Asset Pricing Model (CAPM) Cost-Of-Common-Equity Estimates
for Mr Murray's Four Comparable Water Utility Companies Corrected
to Reflect a Prospective Risk-Free Rate and
the Average Historical and Forecasted Market Equity Risk Premium

	1	2	3	4	5
	Traditional Capital Asset Pricing Model				
Company Name	Risk-Free Rate (1)	Company's Beta (2)	Market Risk Premium (3)	Beta Adjusted Market Risk Premium (4)	Cost of Common Equity (5)
American States Water Company	5 60%	0 60	7 90%	4.74%	10 34%
California Water Services Group	5 60%	0 60	7 90%	4.74%	10 34%
Middlesex Water Company	5 60%	0 55	7 90%	4 35%	9 95%
Philadelphia Suburban Corporation	5.60%	0.70	7.90%	5.53%	11.13%
Average	5.60%	0.61	7.90%	4.84%	10.44%

	1	2	3	4	5
	Empirical Capital Asset Pricing Model				
Company Name	Risk-Free Rate (1)	Company's Beta (2)	Market Risk Premium (3)	Beta Adjusted Market Risk Premium (6)	Cost of Common Equity (5)
American States Water Company	5 60%	0 60	7 90%	5 53%	11 13%
California Water Services Group	5.60%	0 60	7 90%	5 53%	11 13%
Middlesex Water Company	5 60%	0 55	7 90%	5 23%	10 83%
Philadelphia Suburban Corporation	5.60%	0.70	7.90%	6.12%	11.72%
Average	5.60%	0.61	7.90%	5.60%	11.20%

Average of Traditional and Empirical CAPM 10.82%

Notes: (1) Average forecast based upon six quarterly estimates of long-term Treasury bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated October 1, 2003 (see page 2 of this Schedule) The estimates are detailed below

Fourth Quarter 2003	5 3 %
First Quarter 2004	5.4
Second Quarter 2004	5 5
Third Quarter 2004	5 6
Fourth Quarter 2004	5 8
First Quarter 2005	5.9
Average	5.6 %

(2) From Mr Murray's Schedule 18
(3) Market equity risk premium is the average of the historical (1926-2002) market equity risk premium from Ibbotson Associates (see Schedule PMA-17) and the forecasted equity risk premium calculated according to the methodology described in note 1 on page 3 of Schedule PMA-10 using the most current Value Line 3-5 year average total market appreciation of 60%, which translates into an average annual return of 12 47 plus the average dividend yield of 1 97%, yielding a 14 44%. rounded to 14.4%. forecasted total market return. A 14 4% total market return minus the projected risk-free rate of 5 6% (see Schedule PMA-17) yields a forecasted equity risk premium of 8.8%, which when averaged with the historical equity risk premium of 7 0% from note 3 on page 1 of Schedule PMA-17. yields a 7 9% equity risk premium

(4) Column 2 * Column 3.
(5) Column 1 + Column 4.
(6) The empirical CAPM is applied using the formula found in note 4 on page 3 of Schedule PMA-10

Schedule PMA-19

Moody's
Comparison of Interest Rate Trends
for the Twelve Months Ending September 2003 (1)

	Years	Corporate Bonds Aaa Rated	Public Utility Bonds Aa Rated	Public Utility Bonds A Rated	Public Utility Bonds Baa Rated	Spread - Corporate v. Public Utility Bonds: Aa (Pub. Util.) over Aaa (Corp.)	A (Pub. Util.) over Aaa (Corp.)	Baa (Pub. Util.) over Aaa (Corp.)	Spread - Public Utility Bonds: A over Aa	Baa over A
1	October-02	6.33 %	7.07 %	7.23 %	8.00 %					
2	November-02	6.31	7.03	7.14	7.76					
3	December-02	6.21	6.94	7.07	7.61					
4	January-03	6.17	6.87	7.07	7.47					
5	February-03	5.95	6.66	6.93	7.17					
6	March-03	5.89	6.56	6.79	7.05					
7	April-03	5.74	6.47	6.64	6.94					
8	May-03	5.22	6.20	6.36	6.47					
9	June-03	4.97	6.12	6.21	6.30					
10	July-03	5.49	6.37	6.57	6.67					
11	August-03	5.87	6.48	6.78	7.08					
12	September-03	5.72	6.30	6.56	6.87					
	Average of Last 3 Months	5.69 %	6.38 %	6.64 %	6.87 %	0.69 %	0.95 %	1.18 %	0.26 %	0.23 %
	Average of Last 6 Months	5.50 %	6.32 %	6.52 %	6.72 %	0.82 %	1.02 %	1.22 %	0.20 %	0.20 %
	Average of Last 12 Months	5.82 %	6.59 %	6.78 %	7.12 %	0.77 %	0.96 %	1.30 %	0.19 %	0.34 %
	Average Spread (2)					0.76 %	0.98 %	1.23 %	0.22 %	0.26 %

Notes: (1) All yields are distributed yields.
(2) Equal weight has been given to the 12-month average, 6-month average, and 3-month average. This provides recognition of current conditions, but does not place undue emphasis thereon.

Source of Information: Mergent Bond Record

Missouri-American Water Company
Derivation of the Actual Pretax Interest Coverage
and Range of Common Equity Cost Rate Implicit in
Mr. Murray's Recommended Overall Rate of Return

Type of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate		Before-Income Tax Weighted Cost Rate (2)	
Long-Term Debt	56.380 %	6.22%	(1)	3.51 %		3.51 %	
Preferred Stock	0.521	9.12	(1)	0.05		0.08	
Accumulated Deferred ITC Post 1970	0.000	0.00	(1)	0.00		0.00	
Common Equity	43.099	6.59% - 7.33%	(3)	2.84 (4) - - -	3.16 (4)	4.61 (5) - - -	5.13 (5)
Total	100.000 %			6.40 %	6.72 %	8.20 % (6)	8.72 % (6)
Before-income tax interest coverage of all interest charges (8.20% / 3.51%) and (8.72% / 3.51%)						2.34 x - - -	2.48 x

Notes:

(1) Company-provided.

(2) Based upon a company-provided effective federal and state income tax rate of 38.38863%.

(3) Derived by dividing the range of weighted common equity cost rate of 2.84% - 3.16% by MAWC's common equity cost rate of 43.099%. 6.59% = 2.84% / 43.099% and 7.33% = 3.16% / 43.099%.

(4) Derived by multiplying the range of before-income tax weighted cost rate of common equity of 4.61% - 5.13% by 0.6161137 (the complement of the combined effective federal and state income tax rate of 38.38863%. 2.84% = 4.61% * 0.6161137 and 3.16% = 5.13% * 0.6161137.

(5) Derived by subtracting the sum of the before-income tax weighted cost rates of long-term debt (3.51%), preferred stock (0.08%) and accumulated deferred ITC post 1970 (0.00%) from the range of before-income tax weighted overall cost of capital of 8.20% - 8.72%. 4.61% = 8.20% - (3.51% + 0.08% + 0.00%) and 5.13% = 8.72% - (3.51% + 0.08% + 0.00%).

(6) Derived by multiplying Mr. Murray's range pretax interest coverage ratios of 2.06 - 2.19 times implicit in his range of recommended overall rate of returns of 6.66% - 6.98% (from lines 5-6 on page 34 of his direct testimony) by 3.98%, the sum of his recommended weighted cost rates for long-term (3.90%) and short-term debt (0.08%) from Mr. Murray's Schedule 24. 8.20% = 2.06 * 3.98% and 8.72% = 2.19 * 3.98%.

Missouri-American Water Company
Capital Asset Pricing Model (CAPM) Cost-Of-Common-Equity Estimates
for Mr. Burdett's Five Comparable Water Utility Companies Corrected
to Reflect a Prospective Risk-Free Rate and
the Appropriate Historical Equity Risk Premium

	1	2	3	4	5
Company Name	Risk-Free Rate (1)	Company's Beta (2)	Market Risk Premium (1926 - 2002) (3)	Beta Adjusted Market Risk Premium (4)	Cost of Common Equity (5)
American States Water Company	5.60%	0.60	8.20%	4.92%	10.52%
California Water Services Group	5.60%	0.60	8.20%	4.92%	10.52%
Middlesex Water Company	5.60%	0.55	8.20%	4.51%	10.11%
Philadelphia Suburban Corporation	5.60%	0.70	8.20%	5.74%	11.34%
Southwest Water Company	5.60%	0.65	8.20%	5.33%	10.93%
Average	5.60%	0.62	8.20%	5.08%	10.68%

Notes: (1) Average forecast based upon six quarterly estimates of long-term Treasury bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated October 1, 2003 (see page 2 of Schedule PMA-17). The estimates are detailed below.

Fourth Quarter 2003	5.3 %
First Quarter 2004	5.4
Second Quarter 2004	5.5
Third Quarter 2004	5.6
Fourth Quarter 2004	5.8
First Quarter 2005	5.9
Average	5.6 %

(2) From Schedule MB-9.

(3) Market equity risk premium is the average of the difference between the total market return from 1926-2002 of 12.2% and the 1926-2002 income return on long-term government bonds of 5.2% (7.0% = 12.2% - 5.2%) from Stocks, Bonds, Bills and Inflation - 2003 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL, 2003 and the average return on large and small company stocks of 14.55% (from lines 12-13 on page 19 of Mr. Burdette's direct testimony) and 5.2% (9.35% = 14.55% - 5.2%) The 7.0% and 9.35% market equity risk premia average 8.2% (8.2% = (7.0% + 9.35%)/2) It is appropriate to use the income return on long-term government bonds to derive an equity risk premium "because it truly represents the truly riskless portion of the return." (p. 70 of <u>Stocks, Bonds, Bills and Inflation - Valuation Edition 2003 Yearbook</u>, Ibbotson Associates, Inc., Chicago, Il, 2003

(4) Column 2 * Column 3.

(5) Column 1 + Column 4

Schedule PMA-22

Missouri-American Water Company
Capital Asset Pricing Model (CAPM) Cost-Of-Common-Equity Estimates
for Mr Burdett's Five Comparable Water Utility Companies Corrected
to Reflect a Prospective Risk-Free Rate and
the Average Historical and Forecasted Market Equity Risk Premium

	1	2	3	4	5
	Traditional Capital Asset Pricing Model				
Company Name	Risk-Free Rate (1)	Company's Beta (2)	Market Risk Premium (3)	Beta Adjusted Market Risk Premium (4)	Cost of Common Equity (5)
American States Water Company	5 60%	0 60	8 50%	5.10%	10 70%
California Water Services Group	5 60%	0.60	8.50%	5.10%	10.70%
Middlesex Water Company	5 60%	0.55	8.50%	4.68%	10 28%
Philadelphia Suburban Corporation	5 60%	0 70	8.50%	5.95%	11 55%
Southwest Water Company	5.60%	0.65	8.50%	5.53%	11.13%
Average	5.60%	0.62	8.50%	5.27%	10.87%

	Empirical Capital Asset Pricing Model				
Company Name	Risk-Free Rate (1)	Company's Beta (2)	Market Risk Premium (3)	Beta Adjusted Market Risk Premium (6)	Cost of Common Equity (5)
American States Water Company	5.60%	0.60	8.50%	5 95%	11 55%
California Water Services Group	5.60%	0.60	8 50%	5 95%	11 55%
Middlesex Water Company	5.60%	0 55	8 50%	5 63%	11 23%
Philadelphia Suburban Corporation	5.60%	0 70	8 50%	6 59%	12 19%
Southwest Water Company	5.60%	0.65	8.50%	6.27%	11.87%
Average	5.60%	0.62	8.50%	6.08%	11.68%

Average of Traditional and Empirical CAPM 11.28%

Notes: (1) Average forecast based upon six quarterly estimates of long-term Treasury bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated October 1, 2003 (see page 2 of Schedule PMA-17) The estimates are detailed below

Fourth Quarter 2003	5.3 %
First Quarter 2004	5.4
Second Quarter 2004	5.5
Third Quarter 2004	5.6
Fourth Quarter 2004	5 8
First Quarter 2005	5.9
Average	5.6 %

(2) From Schedule MB-9

(3) Market equity risk premium is the average of the historical (1926-2002) market equity risk premia derived in note 3 of Schedule PMA-21 and the forecasted equity risk premium calculated according to the methodology described in note 1 on page 3 of Schedule PMA-10 using the most current Value Line 3-5 year average total market appreciation of 60%, which translates into an average annual return of 12 47 plus the average dividend yield of 1.97%, yielding a 14 44%. rounded to 14.4%. forecasted total market return A 14 4% total market return minus the projected risk-free rate of 5.6% (see Schedule PMA-17) yields a forecasted equity risk premium of 8.8%, which when averaged with the historical equity risk premium of 8.2% from page 28, line 11 of the accompanying rebuttal testimony. yields a 8.5% equity risk premium.

(4) Column 2 * Column 3.

(5) Column 1 + Column 4.

(6) The empirical CAPM is applied using the formula found in note 4 on page 3 of Schedule PMA-10