

MISSOURI PUBLIC SERVICE COMMISSION

**STAFF REPORT
COST OF SERVICE**

**APPENDIX 2
Support for Staff Cost
of
Capital Recommendations**

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2011-0337

The DCF model is a market-oriented approach for deriving the cost of common equity. The cost of common equity calculated from the DCF model is inherently capable of attracting capital. This results from the theory that security prices adjust continually over time, so that an equilibrium price exists and the stock is neither undervalued nor overvalued. It can also be stated that stock prices continually fluctuate to reflect the required and expected return for the investor.

The constant-growth form of the DCF model was used in this analysis. This model relies upon the fact that a company's common stock price is dependent upon the expected cash dividends and upon cash flows received through capital gains or losses that result from stock price changes. The interest rate which discounts the sum of the future expected cash flows to the current market price of the common stock is the calculated cost of common equity. This can be expressed algebraically as:

$$\text{Present Price} = \frac{\text{Expected Dividends}}{\text{Discounted by } k} + \frac{\text{Expected Price in 1 year}}{\text{Discounted by } k} \quad (1)$$

where k equals the cost of equity. Since the expected price of a stock in one year is equal to the present price multiplied by one plus the growth rate, equation (1) can be restated as:

$$\text{Present Price} = \frac{\text{Expected Dividends}}{(1 + k)} + \frac{\text{Present Price } (1+g)}{(1 + k)} \quad (2)$$

where g equals the growth rate and k equals the cost of equity. Letting the present price equal P_0 and expected dividends equal D_1 , the equation appears as:

$$P_0 = \frac{D_1}{(1 + k)} + \frac{P_0(1+g)}{(1 + k)} \quad (3)$$

The cost of equity equation may also be algebraically represented as:

$$k = \frac{D_1}{P_0} + g \quad (4)$$

Thus, the cost of common stock equity, k , is equal to the expected dividend yield (D_1/P_0) plus the expected growth in dividends (g) continuously summed into the future. The growth in dividends and implied growth in earnings will be reflected in the current price. Therefore, this model also recognizes the potential of capital gains or losses associated with owning a share of common stock.

The discounted cash flow method is a continuous stock valuation model. The DCF theory is based on the following assumptions:

1. Market equilibrium;
2. Perpetual life of the company;
3. Constant payout ratio;
4. Payout of less than 100% earnings;
5. Constant price/earnings ratio;
6. Constant growth in cash dividends;
7. Stability in interest rates over time;
8. Stability in required rates of return over time; and
9. Stability in earned returns over time.

Flowing from these, it is further assumed that an investor's growth horizon is unlimited and that earnings, book values and market prices grow hand-in-hand. Although the entire list of the above assumptions is rarely met, the DCF model is a reasonable working model describing an actual investor's expectations and resulting behaviors.

The CAPM describes the relationship between a security's investment risk and its market rate of return. This relationship identifies the rate of return which investors expect a security to earn so that its market return is comparable with the market returns earned by other securities that have similar risk. The general form of the CAPM is as follows:

$$k = R_f + \beta (R_m - R_f)$$

where:

- k = the expected return on equity for a specific security;
- R_f = the risk-free rate;
- β = beta; and
- $R_m - R_f$ = the market risk premium.

The first term of the CAPM is the risk-free rate (R_f). The risk-free rate reflects the level of return that can be achieved without accepting any risk. In reality, there is no such risk-free asset, but it is generally represented by U.S. Treasury securities.

The second term of the CAPM is beta (β). Beta is an indicator of a security's investment risk. It represents the relative movement and relative risk between a particular security and the market as a whole (where beta for the market equals 1.00). Securities with betas greater than 1.00 exhibit greater volatility than do securities with betas less than 1.00. This causes a higher beta security to be less desirable to a risk-averse investor and therefore requires a higher return in order to attract investor capital away from a lower beta security.

The final term of the CAPM is the market risk premium ($R_m - R_f$). The market risk premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk-free investment.

AN ANALYSIS OF THE COST OF CAPITAL

FOR

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2011-0337

SCHEDULES

BY

MATTHEW J. BARNES

REGULATORY REVIEW DIVISION

Utility Operations Department

MISSOURI PUBLIC SERVICE COMMISSION

NOVEMBER 2011

Missouri-American Water Company
Case No. WR-2011-0337

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Missouri-American Water Company

Case No. WR-2011-0337

Federal Reserve Discount Rate Changes and Federal Reserve Funds Rate Changes

Date	Discount Rate (%)	Federal Reserve Funds Rate (%)	Date	Discount Rate (%)	Federal Reserve Funds Rate (%)
12/31/83	<u>8.50%</u>		08/24/99	4.75%	5.25%
04/09/84	<u>9.00%</u>		11/16/99	<u>5.00%</u>	<u>5.50%</u>
11/21/1984	8.50%		02/02/00	5.25%	5.75%
12/24/1984	<u>8.00%</u>		03/21/00	5.50%	6.00%
05/20/85	<u>7.50%</u>		05/19/00	6.00%	6.50%
03/07/86	7.00%		01/03/01	5.75%	6.00%
04/21/86	6.50%		01/04/01	5.50%	6.00%
07/11/86	6.00%		01/31/01	5.00%	5.50%
08/21/86	5.50%		03/20/01	4.50%	5.00%
09/04/87	6.00%		04/18/01	4.00%	4.50%
08/09/88	6.50%		05/15/01	3.50%	4.00%
02/24/89	7.00%		06/27/01	3.25%	3.75%
07/13/90	7.00%	8.00% *	08/21/01	3.00%	3.50%
10/29/90	7.00%	7.75%	09/17/01	2.50%	3.00%
11/13/90	7.00%	7.50%	10/02/01	2.00%	2.50%
12/07/90	7.00%	7.25%	11/06/01	1.50%	2.00%
12/18/90	7.00%	7.00%	12/11/01	1.25%	1.75%
12/19/90	6.50%	7.00%	11/06/02	0.75%	1.25%
01/09/91	6.50%	6.75%	01/09/03	2.25%	1.25% **
02/01/91	6.00%	6.25%	06/25/03	2.00%	1.00%
03/08/91	6.00%	6.00%	06/30/04	2.25%	1.25%
04/30/91	5.50%	5.75%	08/10/04	2.50%	1.50%
08/06/91	5.50%	5.50%	09/21/04	2.75%	1.75%
09/13/91	5.00%	5.25%	11/10/04	3.00%	2.00%
10/31/91	5.00%	5.00%	12/14/04	3.25%	2.25%
11/06/91	4.50%	4.75%	02/02/05	3.50%	2.50%
12/06/91	4.50%	4.50%	03/22/05	3.75%	2.75%
12/20/91	3.50%	4.00%	05/03/05	4.00%	3.00%
04/09/92	3.50%	3.75%	06/30/05	4.25%	3.25%
07/02/92	3.00%	3.25%	08/09/05	4.50%	3.50%
09/04/92	3.00%	3.00%	09/20/05	4.75%	3.75%
01/01/93	3.00%	3.00%	11/01/05	5.00%	4.00%
12/31/93	3.00%	3.00%	12/13/05	5.25%	4.25%
02/04/94	3.00%	3.25%	01/31/06	5.50%	4.50%
03/22/94	3.00%	3.50%	03/28/06	5.75%	4.75%
04/18/94	3.00%	3.75%	05/10/06	6.00%	5.00%
05/17/94	3.50%	4.25%	06/29/06	6.25%	5.25%
08/16/94	4.00%	4.75%	08/17/07	5.75%	5.25%
11/15/94	4.75%	5.50%	09/18/07	5.25%	4.75%
02/01/95	5.25%	6.00%	10/31/07	5.00%	4.50%
07/06/95	5.25%	5.75%	12/11/07	4.75%	4.25%
12/19/95	5.25%	5.50%	01/22/08	4.00%	3.50%
01/31/96	5.00%	5.25%	01/30/08	3.50%	3.00%
03/25/97	5.00%	5.50%	03/16/08	3.25%	3.00%
12/12/97	5.00%	5.50%	03/18/08	2.50%	2.25%
01/09/98	5.00%	5.50%	04/30/08	2.25%	2.00%
03/06/98	5.00%	5.50%	10/08/08	1.75%	1.50%
09/29/98	5.00%	5.25%	10/28/08	1.25%	1.00%
10/15/98	4.75%	5.00%	12/30/08	0.50%	0.25%
11/17/98	4.50%	4.75%	02/19/09	0.75%	0.25%
06/30/99	4.50%	5.00%	12/31/10	0.75%	0.25%

* Staff began tracking the Federal Funds Rate.

** Revised discount window program begins. Reflects rate on primary credit. This revised discount window policy results in incomparability of the discount rates after January 9, 2003 to discount rates before January 9, 2003.

Source:

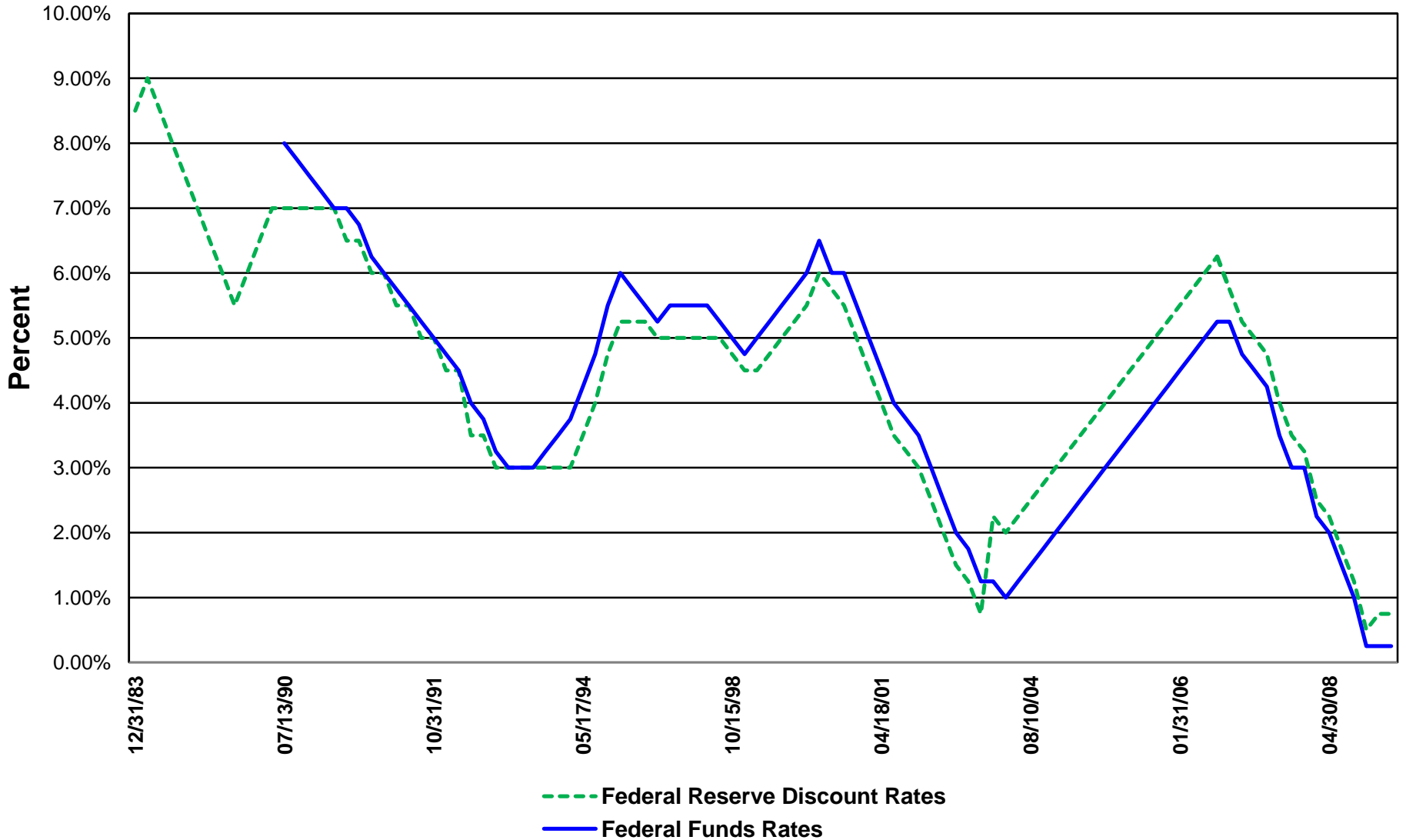
Federal Reserve Discount rate <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html>

Federal Reserve Funds rate <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html>

Note: Interest rates as of December 31 for each year are underlined.

Missouri-American Water Company
Case No. WR-2011-0337

**Federal Reserve Discount Rates and Federal Funds Rates
1982 - 2011**



**Missouri-American Water Company
Case No. WR-2011-0337**

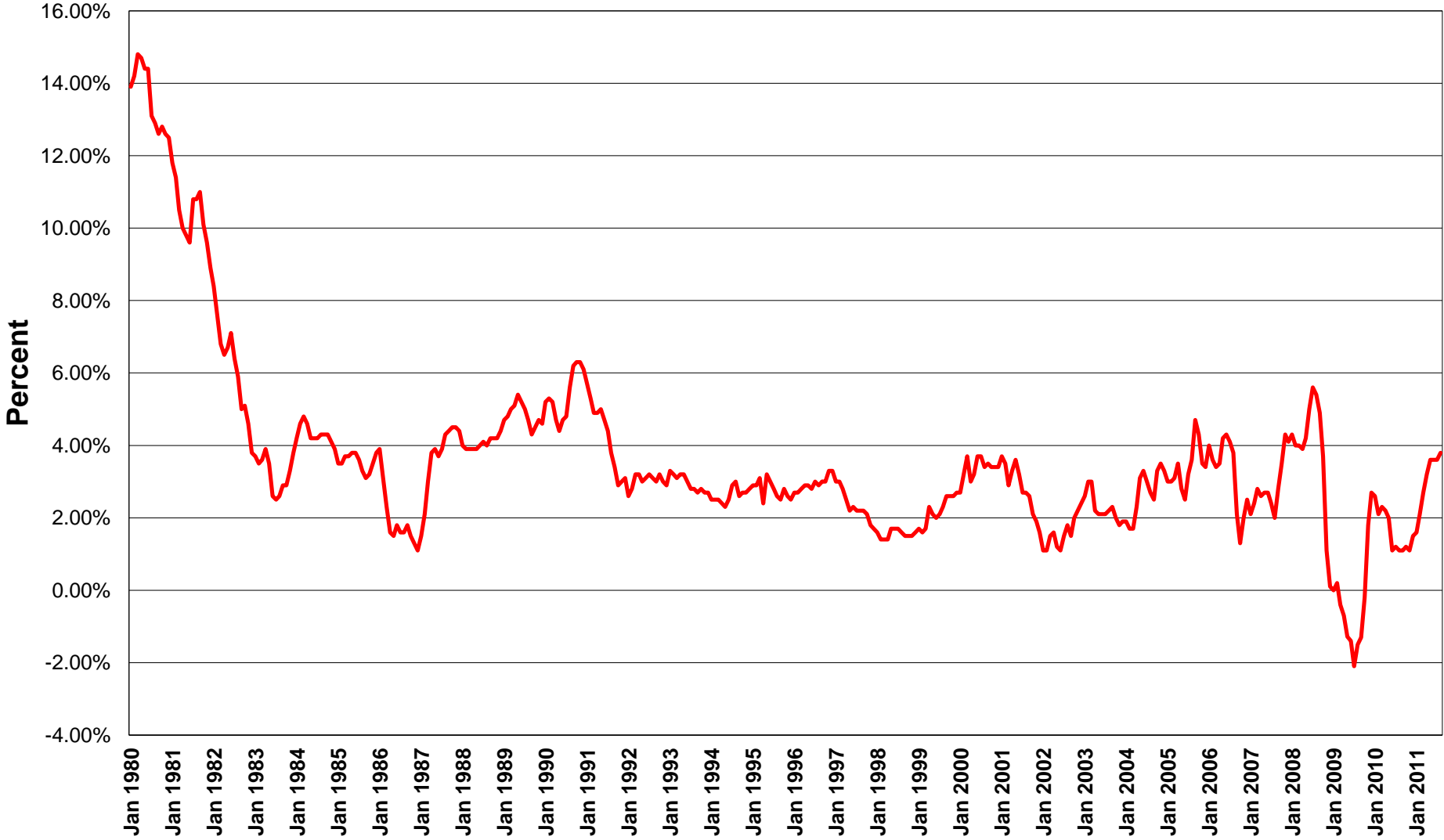
Rate of Inflation

Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate
Jan 1980	13.90%	Jan 1984	4.20%	Jan 1988	4.00%	Jan 1992	2.60%	Jan 1996	2.70%	Jan 2000	2.70%	Jan 2004	1.90%	Jan 2008	4.30%
Feb	14.20%	Feb	4.60%	Feb	3.90%	Feb	2.80%	Feb	2.70%	Feb	3.20%	Feb	1.70%	Feb	4.00%
Mar	14.80%	Mar	4.80%	Mar	3.90%	Mar	3.20%	Mar	2.80%	Mar	3.70%	Mar	1.70%	Mar	4.00%
Apr	14.70%	Apr	4.60%	Apr	3.90%	Apr	3.20%	Apr	2.90%	Apr	3.00%	Apr	2.30%	Apr	3.90%
May	14.40%	May	4.20%	May	3.90%	May	3.00%	May	2.90%	May	3.20%	May	3.10%	May	4.20%
Jun	14.40%	Jun	4.20%	Jun	4.00%	Jun	3.10%	Jun	2.80%	Jun	3.70%	Jun	3.30%	Jun	5.00%
Jul	13.10%	Jul	4.20%	Jul	4.10%	Jul	3.20%	Jul	3.00%	Jul	3.70%	Jul	3.00%	Jul	5.60%
Aug	12.90%	Aug	4.30%	Aug	4.00%	Aug	3.10%	Aug	2.90%	Aug	3.40%	Aug	2.70%	Aug	5.40%
Sep	12.60%	Sep	4.30%	Sep	4.20%	Sep	3.00%	Sep	3.00%	Sep	3.50%	Sep	2.50%	Sep	4.90%
Oct	12.80%	Oct	4.30%	Oct	4.20%	Oct	3.20%	Oct	3.00%	Oct	3.40%	Oct	3.30%	Oct	3.70%
Nov	12.60%	Nov	4.10%	Nov	4.20%	Nov	3.00%	Nov	3.30%	Nov	3.40%	Nov	3.50%	Nov	1.10%
Dec	12.50%	Dec	3.90%	Dec	4.40%	Dec	2.90%	Dec	3.30%	Dec	3.40%	Dec	3.30%	Dec	0.10%
Jan 1981	11.80%	Jan 1985	3.50%	Jan 1989	4.70%	Jan 1993	3.30%	Jan 1997	3.00%	Jan 2001	3.70%	Jan 2005	3.00%	Jan 2009	0.00%
Feb	11.40%	Feb	3.50%	Feb	4.80%	Feb	3.20%	Feb	3.00%	Feb	3.50%	Feb	3.00%	Feb	0.20%
Mar	10.50%	Mar	3.70%	Mar	5.00%	Mar	3.10%	Mar	2.80%	Mar	2.90%	Mar	3.10%	Mar	-0.40%
Apr	10.00%	Apr	3.70%	Apr	5.10%	Apr	3.20%	Apr	2.50%	Apr	3.30%	Apr	3.50%	Apr	-0.70%
May	9.80%	May	3.80%	May	5.40%	May	3.20%	May	2.20%	May	3.60%	May	2.80%	May	-1.28%
Jun	9.60%	Jun	3.80%	Jun	5.20%	Jun	3.00%	Jun	2.30%	Jun	3.20%	Jun	2.50%	Jun	-1.40%
Jul	10.80%	Jul	3.60%	Jul	5.00%	Jul	2.80%	Jul	2.20%	Jul	2.70%	Jul	3.20%	Jul	-2.10%
Aug	10.80%	Aug	3.30%	Aug	4.70%	Aug	2.80%	Aug	2.20%	Aug	2.70%	Aug	3.60%	Aug	-1.50%
Sep	11.00%	Sep	3.10%	Sep	4.30%	Sep	2.70%	Sep	2.20%	Sep	2.60%	Sep	4.70%	Sep	-1.30%
Oct	10.10%	Oct	3.20%	Oct	4.50%	Oct	2.80%	Oct	2.10%	Oct	2.10%	Oct	4.30%	Oct	-0.20%
Nov	9.60%	Nov	3.50%	Nov	4.70%	Nov	2.70%	Nov	1.80%	Nov	1.90%	Nov	3.50%	Nov	1.80%
Dec	8.90%	Dec	3.80%	Dec	4.60%	Dec	2.70%	Dec	1.70%	Dec	1.60%	Dec	3.40%	Dec	2.70%
Jan 1982	8.40%	Jan 1986	3.90%	Jan 1990	5.20%	Jan 1994	2.50%	Jan 1998	1.60%	Jan 2002	1.10%	Jan 2006	4.00%	Jan 2010	2.60%
Feb	7.60%	Feb	3.10%	Feb	5.30%	Feb	2.50%	Feb	1.40%	Feb	1.10%	Feb	3.60%	Feb	2.10%
Mar	6.80%	Mar	2.30%	Mar	5.20%	Mar	2.50%	Mar	1.40%	Mar	1.50%	Mar	3.40%	Mar	2.30%
Apr	6.50%	Apr	1.60%	Apr	4.70%	Apr	2.40%	Apr	1.40%	Apr	1.60%	Apr	3.50%	Apr	2.20%
May	6.70%	May	1.50%	May	4.40%	May	2.30%	May	1.70%	May	1.20%	May	4.20%	May	2.00%
Jun	7.10%	Jun	1.80%	Jun	4.70%	Jun	2.50%	Jun	1.70%	Jun	1.10%	Jun	4.30%	Jun	1.10%
Jul	6.40%	Jul	1.60%	Jul	4.80%	Jul	2.90%	Jul	1.70%	Jul	1.50%	Jul	4.10%	Jul	1.20%
Aug	5.90%	Aug	1.60%	Aug	5.60%	Aug	3.00%	Aug	1.60%	Aug	1.80%	Aug	3.80%	Aug	1.10%
Sep	5.00%	Sep	1.80%	Sep	6.20%	Sep	2.60%	Sep	1.50%	Sep	1.50%	Sep	2.10%	Sep	1.10%
Oct	5.10%	Oct	1.50%	Oct	6.30%	Oct	2.70%	Oct	1.50%	Oct	2.00%	Oct	1.30%	Oct	1.20%
Nov	4.60%	Nov	1.30%	Nov	6.30%	Nov	2.70%	Nov	1.50%	Nov	2.20%	Nov	2.00%	Nov	1.10%
Dec	3.80%	Dec	1.10%	Dec	6.10%	Dec	2.80%	Dec	1.60%	Dec	2.40%	Dec	2.50%	Dec	1.50%
Jan 1983	3.70%	Jan 1987	1.50%	Jan 1991	5.70%	Jan 1995	2.90%	Jan 1999	1.70%	Jan 2003	2.60%	Jan 2007	2.10%	Jan 2011	1.60%
Feb	3.50%	Feb	2.10%	Feb	5.30%	Feb	2.90%	Feb	1.60%	Feb	3.00%	Feb	2.40%	Feb	2.10%
Mar	3.60%	Mar	3.00%	Mar	4.90%	Mar	3.10%	Mar	1.70%	Mar	3.00%	Mar	2.80%	Mar	2.70%
Apr	3.90%	Apr	3.80%	Apr	4.90%	Apr	2.40%	Apr	2.30%	Apr	2.20%	Apr	2.60%	Apr	3.20%
May	3.50%	May	3.90%	May	5.00%	May	3.20%	May	2.10%	May	2.10%	May	2.70%	May	3.60%
Jun	2.60%	Jun	3.70%	Jun	4.70%	Jun	3.00%	Jun	2.00%	Jun	2.10%	Jun	2.70%	Jun	3.60%
Jul	2.50%	Jul	3.90%	Jul	4.40%	Jul	2.80%	Jul	2.10%	Jul	2.10%	Jul	2.40%	Jul	3.60%
Aug	2.60%	Aug	4.30%	Aug	3.80%	Aug	2.60%	Aug	2.30%	Aug	2.20%	Aug	2.00%	Aug	3.80%
Sep	2.90%	Sep	4.40%	Sep	3.40%	Sep	2.50%	Sep	2.60%	Sep	2.30%	Sep	2.80%	Sep	2.80%
Oct	2.90%	Oct	4.50%	Oct	2.90%	Oct	2.80%	Oct	2.60%	Oct	2.00%	Oct	3.50%	Oct	2.80%
Nov	3.30%	Nov	4.50%	Nov	3.00%	Nov	2.60%	Nov	2.60%	Nov	1.80%	Nov	4.30%	Nov	2.80%
Dec	3.80%	Dec	4.40%	Dec	3.10%	Dec	2.50%	Dec	2.70%	Dec	1.90%	Dec	4.10%	Dec	2.80%

Source: U.S. Dept of Labor, Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers,
Change for 12-Month Period, Bureau of Labor Statistics,
http://www.bls.gov/schedule/archives/cpi_nr.htm

Missouri-American Water Company
Case No. WR-2011-0337

**Rate of Inflation
1980-2011**



— Rate of Inflation

**Missouri-American Water Company
Case No. WR-2011-0337**

Average Yields on Mergent's Public Utility Bonds

Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate
Jan 1980	12.20%	Jan 1984	13.40%	Jan 1988	10.75%	Jan 1992	8.67%	Jan 1996	7.20%	Jan 2000	8.22%	Jan 2004	6.23%	Jan 2008	6.08%
Feb	13.48%	Feb	13.50%	Feb	10.11%	Feb	8.77%	Feb	7.37%	Feb	8.10%	Feb	6.17%	Feb	6.28%
Mar	14.33%	Mar	14.03%	Mar	10.11%	Mar	8.84%	Mar	7.72%	Mar	8.14%	Mar	6.01%	Mar	6.29%
Apr	13.50%	Apr	14.03%	Apr	10.53%	Apr	8.79%	Apr	7.88%	Apr	8.14%	Apr	6.38%	Apr	6.36%
May	12.17%	May	14.95%	May	10.75%	May	8.72%	May	7.99%	May	8.55%	May	6.68%	May	6.38%
Jun	11.87%	Jun	15.16%	Jun	10.71%	Jun	8.64%	Jun	8.07%	Jun	8.22%	Jun	6.53%	Jun	6.50%
Jul	12.12%	Jul	14.92%	Jul	10.96%	Jul	8.46%	Jul	8.02%	Jul	8.17%	Jul	6.34%	Jul	6.50%
Aug	12.82%	Aug	14.29%	Aug	11.09%	Aug	8.34%	Aug	7.84%	Aug	8.05%	Aug	6.18%	Aug	6.48%
Sep	13.29%	Sep	14.04%	Sep	10.56%	Sep	8.32%	Sep	8.01%	Sep	8.16%	Sep	6.01%	Sep	6.59%
Oct	13.53%	Oct	13.68%	Oct	9.92%	Oct	8.44%	Oct	7.76%	Oct	8.08%	Oct	5.95%	Oct	7.70%
Nov	14.07%	Nov	13.15%	Nov	9.89%	Nov	8.53%	Nov	7.48%	Nov	8.03%	Nov	5.97%	Nov	7.80%
Dec	14.48%	Dec	12.96%	Dec	10.02%	Dec	8.36%	Dec	7.58%	Dec	7.79%	Dec	5.93%	Dec	6.87%
Jan 1981	14.22%	Jan 1985	12.88%	Jan 1989	10.02%	Jan 1993	8.23%	Jan 1997	7.79%	Jan 2001	7.76%	Jan 2005	5.80%	Jan 2009	6.77%
Feb	14.84%	Feb	13.00%	Feb	10.02%	Feb	8.00%	Feb	7.68%	Feb	7.69%	Feb	5.64%	Feb	6.72%
Mar	14.86%	Mar	13.66%	Mar	10.16%	Mar	7.85%	Mar	7.92%	Mar	7.59%	Mar	5.86%	Mar	6.82%
Apr	15.32%	Apr	13.42%	Apr	10.14%	Apr	7.76%	Apr	8.08%	Apr	7.81%	Apr	5.72%	Apr	6.90%
May	15.84%	May	12.89%	May	9.92%	May	7.78%	May	7.94%	May	7.88%	May	5.60%	May	6.83%
Jun	15.27%	Jun	11.91%	Jun	9.49%	Jun	7.68%	Jun	7.77%	Jun	7.75%	Jun	5.39%	June	6.54%
Jul	15.87%	Jul	11.88%	Jul	9.34%	Jul	7.53%	Jul	7.52%	Jul	7.71%	Jul	5.50%	July	6.15%
Aug	16.33%	Aug	11.93%	Aug	9.37%	Aug	7.21%	Aug	7.57%	Aug	7.57%	Aug	5.51%	Aug	5.80%
Sep	16.89%	Sep	11.95%	Sep	9.43%	Sep	7.01%	Sep	7.50%	Sep	7.73%	Sep	5.54%	Sep	5.60%
Oct	16.76%	Oct	11.84%	Oct	9.37%	Oct	6.99%	Oct	7.37%	Oct	7.64%	Oct	5.79%	Oct	5.64%
Nov	15.50%	Nov	11.33%	Nov	9.33%	Nov	7.30%	Nov	7.24%	Nov	7.61%	Nov	5.88%	Nov	5.71%
Dec	15.77%	Dec	10.82%	Dec	9.31%	Dec	7.33%	Dec	7.16%	Dec	7.86%	Dec	5.83%	Dec	5.86%
Jan 1982	16.73%	Jan 1986	10.66%	Jan 1990	9.44%	Jan 1994	7.31%	Jan 1998	7.03%	Jan 2002	7.69%	Jan 2006	5.77%	Jan 2010	5.83%
Feb	16.72%	Feb	10.16%	Feb	9.66%	Feb	7.44%	Feb	7.09%	Feb	7.62%	Feb	5.83%	Feb	5.94%
Mar	16.09%	Mar	9.33%	Mar	9.75%	Mar	7.83%	Mar	7.13%	Mar	7.83%	Mar	5.98%	Mar	5.90%
Apr	15.82%	Apr	9.02%	Apr	9.87%	Apr	8.20%	Apr	7.12%	Apr	7.74%	Apr	6.28%	Apr	5.87%
May	15.60%	May	9.52%	May	9.89%	May	8.32%	May	7.11%	May	7.76%	May	6.39%	May	5.59%
Jun	16.18%	Jun	9.51%	Jun	9.69%	Jun	8.31%	Jun	6.99%	Jun	7.67%	June	6.39%	Jun	5.62%
Jul	16.04%	Jul	9.19%	Jul	9.66%	Jul	8.47%	Jul	6.99%	Jul	7.54%	July	6.37%	Jul	5.41%
Aug	15.22%	Aug	9.15%	Aug	9.87%	Aug	8.41%	Aug	6.96%	Aug	7.34%	Aug	6.20%	Aug	5.10%
Sep	14.56%	Sep	9.42%	Sep	10.01%	Sep	8.65%	Sep	6.88%	Sep	7.23%	Sep	6.03%	Sep	5.10%
Oct	13.88%	Oct	9.39%	Oct	9.94%	Oct	8.88%	Oct	6.88%	Oct	7.43%	Oct	6.01%	Oct	5.20%
Nov	13.58%	Nov	9.15%	Nov	9.76%	Nov	9.00%	Nov	6.96%	Nov	7.31%	Nov	5.82%	Nov	5.45%
Dec	13.55%	Dec	8.96%	Dec	9.57%	Dec	8.79%	Dec	6.84%	Dec	7.20%	Dec	5.83%	Dec	5.64%
Jan 1983	13.46%	Jan 1987	8.77%	Jan 1991	9.56%	Jan 1995	8.77%	Jan 1999	6.87%	Jan 2003	7.13%	Jan 2007	5.96%	Jan 2011	5.64%
Feb	13.60%	Feb	8.81%	Feb	9.31%	Feb	8.56%	Feb	7.00%	Feb	6.92%	Feb	5.91%	Feb	5.73%
Mar	13.20%	Mar	8.75%	Mar	9.39%	Mar	8.41%	Mar	7.18%	Mar	6.80%	Mar	5.87%	Mar	5.62%
Apr	13.03%	Apr	9.30%	Apr	9.30%	Apr	8.30%	Apr	7.16%	Apr	6.68%	Apr	6.01%	Apr	5.62%
May	13.00%	May	9.82%	May	9.29%	May	7.93%	May	7.42%	May	6.35%	May	6.03%	May	5.38%
Jun	13.17%	Jun	9.87%	Jun	9.44%	Jun	7.62%	Jun	7.70%	Jun	6.21%	June	6.34%	Jun	6.06%
Jul	13.20%	Jul	10.01%	Jul	9.40%	Jul	7.73%	Jul	7.66%	Jul	6.54%	July	6.28%	Jul	6.11%
Aug	13.50%	Aug	10.33%	Aug	9.16%	Aug	7.86%	Aug	7.86%	Aug	6.78%	Aug	6.28%	Aug	5.76%
Sep	13.35%	Sep	11.00%	Sep	9.03%	Sep	7.62%	Sep	7.87%	Sep	6.58%	Sep	6.24%	Sep	5.52%
Oct	13.19%	Oct	11.32%	Oct	8.99%	Oct	7.46%	Oct	8.02%	Oct	6.50%	Oct	6.17%	Oct	
Nov	13.33%	Nov	10.82%	Nov	8.93%	Nov	7.40%	Nov	7.86%	Nov	6.44%	Nov	6.04%	Nov	
Dec	13.48%	Dec	10.99%	Dec	8.76%	Dec	7.21%	Dec	8.04%	Dec	6.36%	Dec	6.23%	Dec	

Source: Mergent Bond Record
www.bondsonline.com

Missouri-American Water Company
Case No. WR-2011-0337
Average Yields on Thirty-Year U.S. Treasury Bonds

Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate	Mo/Year	Rate
Jan 1980	10.60%	Jan 1984	11.75%	Jan 1988	8.83%	Jan 1992	7.58%	Jan 1996	6.05%	Jan 2000	6.63%	Jan 2004	4.99%	Jan 2008	4.33%
Feb	12.13%	Feb	11.95%	Feb	8.43%	Feb	7.85%	Feb	6.24%	Feb	6.23%	Feb	4.93%	Feb	4.52%
Mar	12.34%	Mar	12.38%	Mar	8.63%	Mar	7.97%	Mar	6.60%	Mar	6.05%	Mar	4.74%	Mar	4.39%
Apr	11.40%	Apr	12.65%	Apr	8.95%	Apr	7.96%	Apr	6.79%	Apr	5.85%	Apr	5.14%	Apr	4.44%
May	10.36%	May	13.43%	May	9.23%	May	7.89%	May	6.93%	May	6.15%	May	5.42%	May	4.60%
Jun	9.81%	Jun	13.44%	Jun	9.00%	Jun	7.84%	Jun	7.06%	Jun	5.93%	Jun	5.41%	Jun	4.69%
Jul	10.24%	Jul	13.21%	Jul	9.14%	Jul	7.60%	Jul	7.03%	Jul	5.85%	Jul	5.22%	Jul	4.57%
Aug	11.00%	Aug	12.54%	Aug	9.32%	Aug	7.39%	Aug	6.84%	Aug	5.72%	Aug	5.06%	Aug	4.50%
Sep	11.34%	Sep	12.29%	Sep	9.06%	Sep	7.34%	Sep	7.03%	Sep	5.83%	Sep	4.90%	Sep	4.27%
Oct	11.59%	Oct	11.98%	Oct	8.89%	Oct	7.53%	Oct	6.81%	Oct	5.80%	Oct	4.86%	Oct	4.17%
Nov	12.37%	Nov	11.56%	Nov	9.02%	Nov	7.61%	Nov	6.48%	Nov	5.78%	Nov	4.89%	Nov	4.00%
Dec	12.40%	Dec	11.52%	Dec	9.01%	Dec	7.44%	Dec	6.55%	Dec	5.49%	Dec	4.86%	Dec	2.87%
Jan 1981	12.14%	Jan 1985	11.45%	Jan 1989	8.93%	Jan 1993	7.34%	Jan 1997	6.83%	Jan 2001	5.54%	Jan 2005	4.73%	Jan 2009	3.13%
Feb	12.80%	Feb	11.47%	Feb	9.01%	Feb	7.09%	Feb	6.69%	Feb	5.45%	Feb	4.55%	Feb	3.59%
Mar	12.69%	Mar	11.81%	Mar	9.17%	Mar	6.82%	Mar	6.93%	Mar	5.34%	Mar	4.78%	Mar	3.64%
Apr	13.20%	Apr	11.47%	Apr	9.03%	Apr	6.85%	Apr	7.09%	Apr	5.65%	Apr	4.65%	Apr	3.76%
May	13.60%	May	11.05%	May	8.83%	May	6.92%	May	6.94%	May	5.78%	May	4.49%	May	4.23%
Jun	12.96%	Jun	10.44%	Jun	8.27%	Jun	6.81%	Jun	6.77%	Jun	5.67%	Jun	4.29%	June	4.52%
Jul	13.59%	Jul	10.50%	Jul	8.08%	Jul	6.63%	Jul	6.51%	Jul	5.61%	Jul	4.41%	July	4.41%
Aug	14.17%	Aug	10.56%	Aug	8.12%	Aug	6.32%	Aug	6.58%	Aug	5.48%	Aug	4.46%	August	4.37%
Sep	14.67%	Sep	10.61%	Sep	8.15%	Sep	6.00%	Sep	6.50%	Sep	5.48%	Sep	4.47%	Sept	4.19%
Oct	14.68%	Oct	10.50%	Oct	8.00%	Oct	5.94%	Oct	6.33%	Oct	5.32%	Oct	4.67%	Oct	4.19%
Nov	13.35%	Nov	10.06%	Nov	7.90%	Nov	6.21%	Nov	6.11%	Nov	5.12%	Nov	4.73%	Nov	4.31%
Dec	13.45%	Dec	9.54%	Dec	7.90%	Dec	6.25%	Dec	5.99%	Dec	5.48%	Dec	4.66%	Dec	4.49%
Jan 1982	14.22%	Jan 1986	9.40%	Jan 1990	8.26%	Jan 1994	6.29%	Jan 1998	5.81%	Jan 2002	5.44%	Jan 2006	4.59%	Jan 2010	4.60%
Feb	14.22%	Feb	8.93%	Feb	8.50%	Feb	6.49%	Feb	5.89%	Feb	5.39%	Feb	4.58%	Feb	4.62%
Mar	13.53%	Mar	7.96%	Mar	8.56%	Mar	6.91%	Mar	5.95%	Mar	5.71%	Mar	4.73%	Mar	4.65%
Apr	13.37%	Apr	7.39%	Apr	8.76%	Apr	7.27%	Apr	5.92%	Apr	5.67%	Apr	5.06%	Apr	4.69%
May	13.24%	May	7.52%	May	8.73%	May	7.41%	May	5.93%	May	5.64%	May	5.20%	May	4.28%
Jun	13.92%	Jun	7.57%	Jun	8.46%	Jun	7.40%	Jun	5.70%	Jun	5.52%	Jun	5.16%	Jun	4.13%
Jul	13.55%	Jul	7.27%	Jul	8.50%	Jul	7.58%	Jul	5.68%	Jul	5.38%	July	5.13%	Jul	3.99%
Aug	12.77%	Aug	7.33%	Aug	8.86%	Aug	7.49%	Aug	5.54%	Aug	5.08%	Aug	5.00%	Aug	3.81%
Sep	12.07%	Sep	7.62%	Sep	9.03%	Sep	7.71%	Sep	5.20%	Sep	4.49%	Sep	4.85%	Sep	3.77%
Oct	11.17%	Oct	7.70%	Oct	8.86%	Oct	7.94%	Oct	5.01%	Oct	4.93%	Oct	4.85%	Oct	3.87%
Nov	10.54%	Nov	7.52%	Nov	8.54%	Nov	8.08%	Nov	5.25%	Nov	4.95%	Nov	4.69%	Nov	4.19%
Dec	10.54%	Dec	7.37%	Dec	8.24%	Dec	7.87%	Dec	5.06%	Dec	4.92%	Dec	4.68%	Dec	4.42%
Jan 1983	10.63%	Jan 1987	7.39%	Jan 1991	8.27%	Jan 1995	7.85%	Jan 1999	5.16%	Jan 2003	4.94%	Jan 2007	4.85%	Jan 2011	4.52%
Feb	10.88%	Feb	7.54%	Feb	8.03%	Feb	7.61%	Feb	5.37%	Feb	4.81%	Feb	4.82%	Feb	4.65%
Mar	10.63%	Mar	7.55%	Mar	8.29%	Mar	7.45%	Mar	5.58%	Mar	4.80%	Mar	4.72%	Mar	4.52%
Apr	10.48%	Apr	8.25%	Apr	8.21%	Apr	7.36%	Apr	5.55%	Apr	4.90%	Apr	4.86%	Apr	4.50%
May	10.53%	May	8.78%	May	8.27%	May	6.95%	May	5.81%	May	4.53%	May	4.90%	May	4.29%
Jun	10.93%	Jun	8.57%	Jun	8.47%	Jun	6.57%	Jun	6.04%	Jun	4.37%	Jun	5.20%	Jun	4.23%
Jul	11.40%	Jul	8.64%	Jul	8.45%	Jul	6.72%	Jul	5.98%	Jul	4.93%	July	5.11%	Jul	4.27%
Aug	11.82%	Aug	8.97%	Aug	8.14%	Aug	6.86%	Aug	6.07%	Aug	5.30%	Aug	4.93%	Aug	3.64%
Sep	11.63%	Sep	9.59%	Sep	7.95%	Sep	6.55%	Sep	6.07%	Sep	5.14%	Sep	4.79%	Sep	3.18%
Oct	11.58%	Oct	9.61%	Oct	7.93%	Oct	6.37%	Oct	6.26%	Oct	5.16%	Oct	4.77%	Oct	
Nov	11.75%	Nov	8.95%	Nov	7.92%	Nov	6.26%	Nov	6.15%	Nov	5.13%	Nov	4.52%	Nov	
Dec	11.88%	Dec	9.12%	Dec	7.70%	Dec	6.06%	Dec	6.35%	Dec	5.08%	Dec	4.53%	Dec	

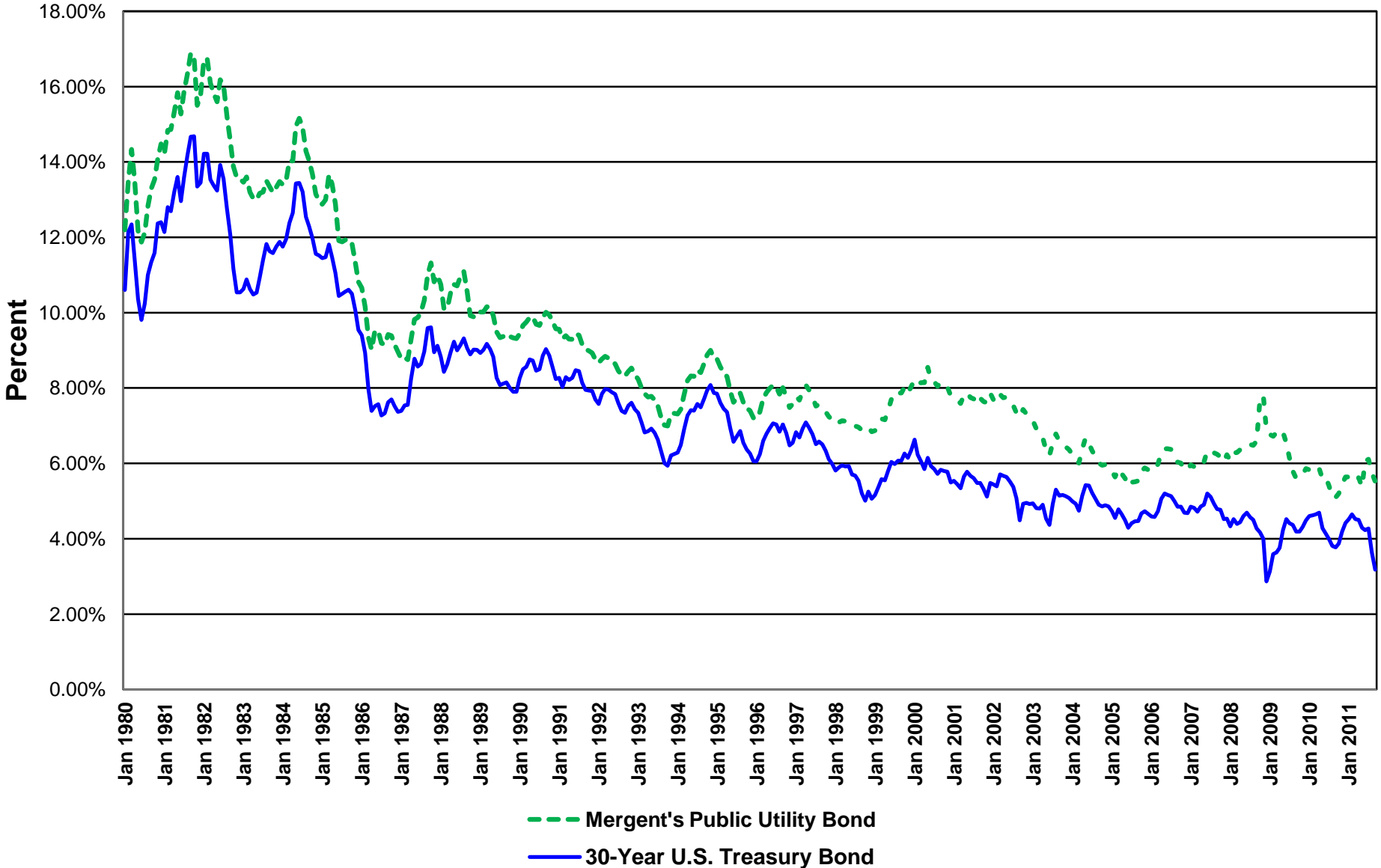
Sources:

<http://finance.yahoo.com/q/hp?s=^TYX>

<http://research.stlouisfed.org/fred2/data/GS30.txt>

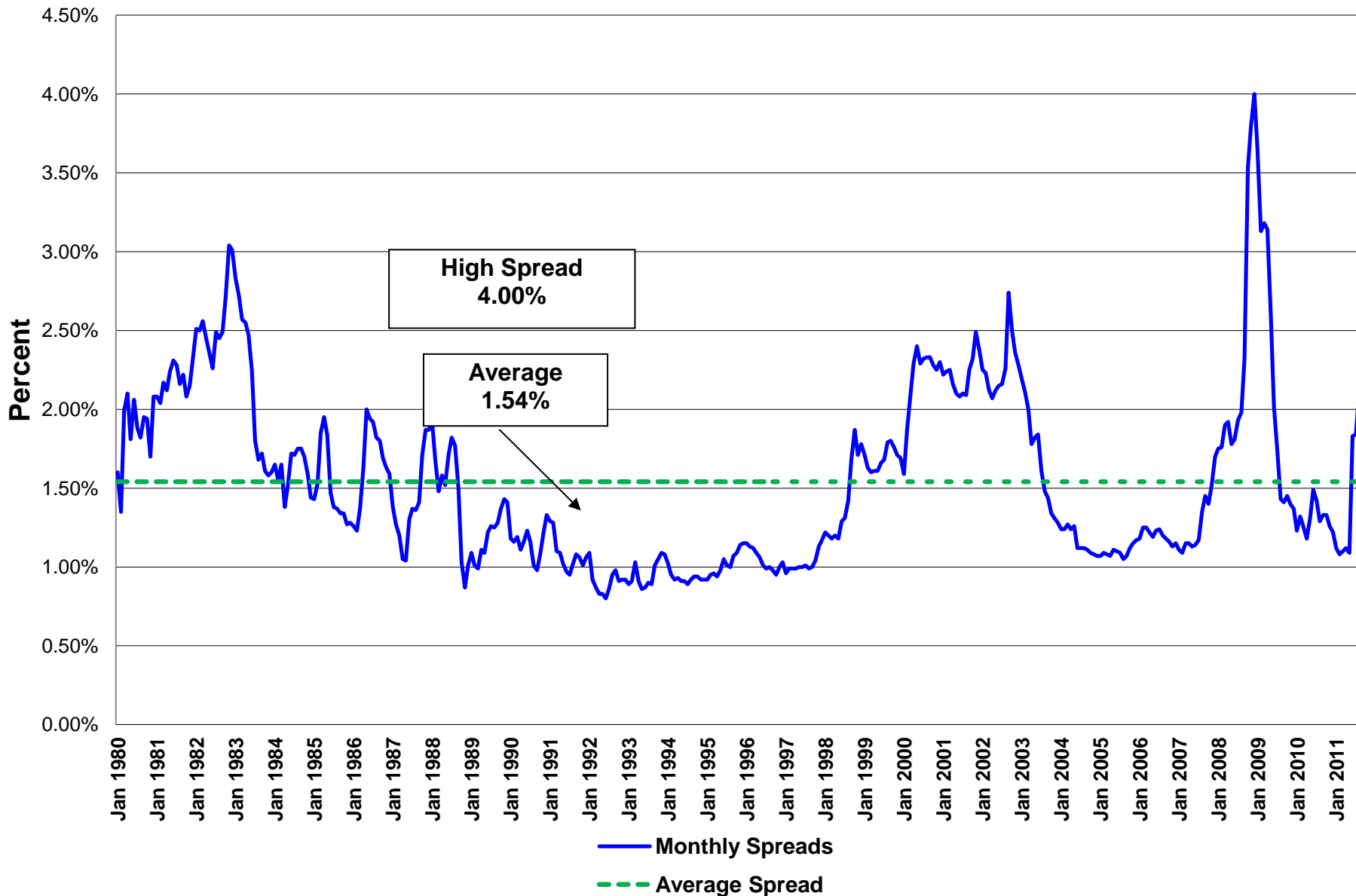
Missouri-American Water Company
Case No. WR-2011-0337

Average Yields on Mergent's Public Utility Bonds and Thirty-Year U.S. Treasury Bonds (1980-2011)



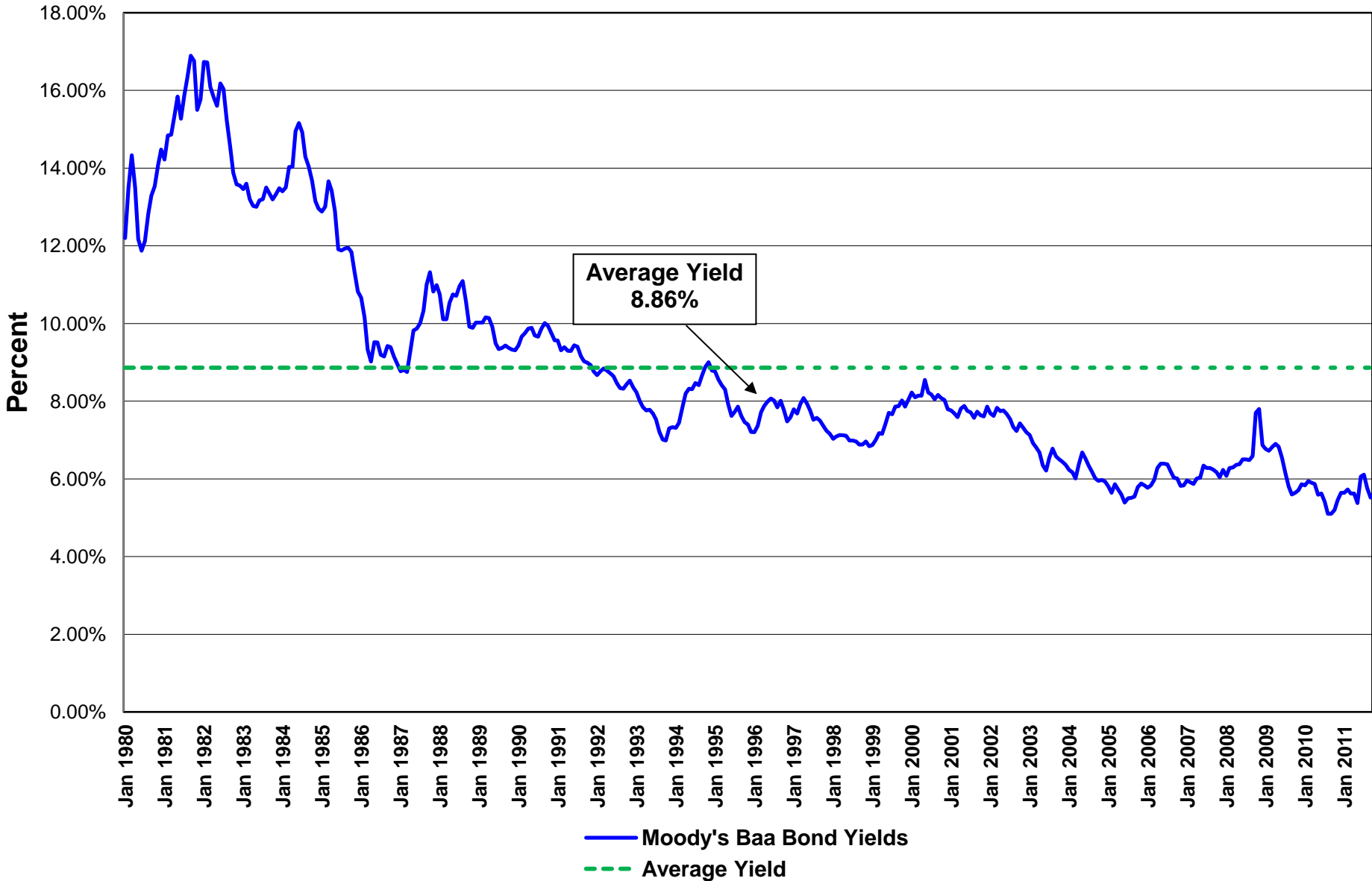
Missouri-American Water Company
Case No. WR-2011-0337

**Monthly Spreads Between Yields on Mergent's Public Utility Bonds and
Thirty-Year U.S. Treasury Bonds (1980 - 2011)**



Missouri-American Water Company
Case No. WR-2011-0337

**Moody's Baa Corporate
Bond Yields 1980-2011**



SCHEDULE (i)

Source: Mergent Bond Record and www.bondsonline.com

**Missouri-American Water Company
Case No. WR-2011-0337**

Economic Estimates and Projections, 2011-2013

Source	Inflation Rate			Real GDP			Unemployment			3-Mo. T-Bill Rate			Long-Term T-Bond Rate		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
Value Line Investment Survey -- Selection & Opinion (08-26-11, page 2047)	3.10%	1.80%	2.00%	2.20%	1.30%	1.50%	9.10%	9.10%	8.50%	0.10%	0.10%	0.50%	4.50%	4.90%	5.00%
The Budget and Economic Outlook FY2011-2021 (August 24, 2011)	2.20%	1.40%	1.30%	2.40%	2.60%	1.70%	8.90%	8.70%	8.70%	0.10%	0.10%	0.20%	N/A	N/A	N/A
Current rate	3.80%			1.30%			9.10%			0.02%			3.02%		

Notes: N.A. = Not Available.

Sources of Current Rates:

- Inflation: The Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers, unadjusted 12-Month Period Ending, August 31, 2011 (see first paragraph).
http://www.bls.gov/schedule/archives/cpi_nr.htm
- GDP: U.S. Department of Commerce, Bureau of Economic Analysis. Percentage change for the Second Quarter 2011 (see first paragraph).
<http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm>
- Unemployment: The Bureau of Labor Statistics, Economy Situation Summary - Unemployment Rate, September 2011.
<http://www.bls.gov/news.release/empst.nr0.htm>
- 3-Month Treasury: St. Louis Federal Reserve website for September 30, 2011 (Weekly).
<http://research.stlouisfed.org/fred2/series/TB3MS/22>
- 30-Yr. T-Bond: St. Louis Federal Reserve website for September 30, 2011 (Weekly).
<http://research.stlouisfed.org/fred2/series/WGS30YR>
- Other Sources: ValueLine Investment Survey Selection & Opinion, August 26, 2011, page 2047.
The Congressional Budget Office, The Budget and Economic Outlook: Fiscal Years 2011-2021, August 24, 2011.
<http://www.cbo.gov/publications/bysubject.cfm?cat=0>

Missouri-American Water Company
Case No. WR-2011-0337

**Historical Consolidated Capital Structures for
American Water**

(Dollars in thousands)

Capital Components	2001	2002	2003	2004	2005
Common Equity	\$ 1,758,018.00	\$ 1,801,921.00	\$ 3,009,396.00	\$ 2,888,896.00	\$ 2,609,458.00
Preferred Stock	\$ 49,415.00 ^{2,3}	\$ 33,858.00 ^{2,3}	\$ 1,782,610.00 ^{2,3}	\$ 1,779,875.00 ^{2,3}	\$ 1,779,795.00 ^{2,3}
Long-Term Debt	\$ 2,716,106.00 ¹	\$ 3,668,589.00 ¹	\$ 3,822,885.00 ¹	\$ 3,952,172.00 ¹	\$ 4,366,629.00 ¹
	<u>\$ 4,523,539.00</u>	<u>\$ 5,504,368.00</u>	<u>\$ 8,614,891.00</u>	<u>\$ 8,620,943.00</u>	<u>\$ 8,755,882.00</u>
Capital Components	2006	2007	2008	2009	2010
Common Equity	\$ 2,613,696.00	\$ 4,542,046.00	\$ 4,102,001.00	\$ 4,000,859.00	\$ 4,127,725.00
Preferred Stock	\$ 1,779,088.00 ^{2,3}	\$ 28,864.00 ^{2,3}	\$ 28,707.00 ^{2,3}	\$ 28,503.00 ^{2,3}	\$ 27,818.00 ^{2,3}
Long-Term Debt	\$ 4,352,691.00 ¹	\$ 4,771,292.00 ¹	\$ 4,799,885.00 ¹	\$ 5,342,248.00 ¹	\$ 5,455,031.00 ¹
	<u>\$ 8,745,475.00</u>	<u>\$ 9,342,202.00</u>	<u>\$ 8,930,593.00</u>	<u>\$ 9,371,610.00</u>	<u>\$ 9,610,574.00</u>

**Historical Consolidated Capital Structures for
Missouri-American**

(Dollars in thousands)

Capital Components	2001	2002	2003	2004	2005
Common Equity	\$ 196,249.29	\$ 210,515.00	\$ 215,245.00	\$ 214,999.00	\$ 219,543.00
Preferred Stock	\$ 2,704.00	\$ 2,692.00	\$ 2,680.00	\$ 2,668.00	\$ 2,664.00
Long-Term Debt	\$ 234,146.40 ¹	\$ 290,130.00 ¹	\$ 290,005.00 ¹	\$ 289,985.00 ¹	\$ 284,245.00 ¹
Total	<u>\$ 433,099.69</u>	<u>\$ 503,337.00</u>	<u>\$ 507,930.00</u>	<u>\$ 507,652.00</u>	<u>\$ 506,452.00</u>
Capital Components	2006	2007	2008	2009	2010
Common Equity	\$ 222,961.63	\$ 298,926.00	\$ 336,785.00	\$ 377,129.00	\$ 413,149.89
Preferred Stock	\$ 2,704.00	\$ 2,620.00	\$ 2,620.00	\$ 2,608.00	\$ -
Long-Term Debt	\$ 286,901.00 ¹	\$ 316,037.00 ¹	\$ 385,870.00 ¹	\$ 410,156.00 ¹	\$ 411,610.00 ¹
Total	<u>\$ 512,566.63</u>	<u>\$ 617,583.00</u>	<u>\$ 725,275.00</u>	<u>\$ 789,893.00</u>	<u>\$ 824,759.89</u>

Notes:

¹ Includes current maturities on long-term debt.

² Includes redeemable preferred stock.

³ Includes current maturities on preferred stock.

Sources: Missouri-American Water Company's response to Staff Data Request Nos. 139.

Schedule 7-1 attached to Staff witness David Murray's direct testimony in Case No. WR-2007-0216.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Historical Consolidated Capital Structures for
American Water**

(Dollars in thousands)

Capital Components	2001	2002	2003	2004	2005
Common Equity	38.86%	32.74%	34.93%	33.51%	29.80%
Preferred Stock	1.09% ^{2,3}	0.62% ^{2,3}	20.69% ^{2,3}	20.65% ^{2,3}	20.33% ^{2,3}
Long-Term Debt	60.04% ¹	66.65% ¹	44.38% ¹	45.84% ¹	49.87% ¹
	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Capital Components	2006	2007	2008	2009	2010	Average
Common Equity	29.89%	48.62%	45.93%	42.69%	42.95%	37.99%
Preferred Stock	20.34% ^{2,3}	0.31% ^{2,3}	0.32% ^{2,3}	0.30% ^{2,3}	0.29% ^{2,3}	8.49%
Long-Term Debt	49.77% ¹	51.07% ¹	53.75% ¹	57.00% ¹	56.76% ¹	53.51%
	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

**Historical Consolidated Capital Structures for
Missouri-American**

(Dollars in thousands)

Capital Components	2001	2002	2003	2004	2005
Common Equity	45.31%	41.82%	42.38%	42.35%	43.35%
Preferred Stock	0.62%	0.53%	0.53%	0.53%	0.53%
Long-Term Debt	54.06% ¹	57.64% ¹	57.10% ¹	57.12% ¹	56.12% ¹
Total	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Capital Components	2006	2007	2008	2009	2010	Average
Common Equity	43.50%	48.40%	46.44%	47.74%	50.09%	45.14%
Preferred Stock	0.53%	0.42%	0.36%	0.33%	0.00%	0.44%
Long-Term Debt	55.97% ¹	51.17% ¹	53.20% ¹	51.93% ¹	49.91% ¹	54.42%
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>

Notes:

¹ Includes current maturities on long-term debt.

² Includes redeemable preferred stock.

³ Includes current maturities on preferred stock.

Sources: Missouri-American Water Company's response to Staff Data Request Nos. 139.

Schedule 1 attached to Staff witness David Murray's surrebuttal testimony in Case No. WR-2003-0500.

Missouri-American Water Company
Case No. WR-2011-0337

Capital Structure as of December 31, 2010
for American Water

<u>Capital Component</u>	<u>Amount</u> <u>(in thousands)</u>	<u>Percentage</u> <u>of Capital</u>
Common Stock Equity	\$ 4,127,725 ¹	42.95%
Preferred Stock	\$ 27,818 ²	0.29%
Long-Term Debt	\$ 5,455,031 ³	56.76%
Short-Term Debt	\$ - ⁴	0.00%
Total Capitalization	\$ 9,610,574	100.00%

Notes:

¹ Based on common equity shown on American Water's December 31, 2010 balance sheet.

² Based on total preferred stock shown on American Water's December 31, 2010 balance sheet less unamortized preferred stock expenses.

³ Based on total long-term debt shown on American Water's December 31, 2010 balance sheet less unamortized long-term debt expenses.

⁴ Staff did not include short-term debt because as of December 31, 2010 construction-work-in-progress exceeded short-term debt by \$85,865,000.

Source:

MAWC's response to Staff Data Request Nos. 0139.

**Missouri American Water Company
Case No. WR-2011-0337**

**Embedded Cost of Long-Term Debt as of December 31, 2010
for American Water
(Excluding Debt Held at American Water's Subsidiaries Besides MAWC)**

Total Annual Cost:	\$	304,870,538	
Total Carrying Value:		\$4,923,810,017	
Embedded Cost = Total Annual Cost/Total Carrying Value			6.19%

Entity	Total Annual Cost	Carrying Value
AWCC	\$ 210,350,023	\$ 3,412,098,000
AWK	\$ 69,479,234	\$ 1,110,317,122
MO	\$ 25,041,281	\$ 401,394,895
Total	<u>\$ 304,870,538</u>	<u>\$ 4,923,810,017</u>

Source: Missouri-American Water Company's response to Staff's Data Request No. 0141.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Embedded Cost of Preferred Stock as of December 31, 2010
for American Water
(Excluding Preferred Stock Held at American Water's Subsidiaries Besides MAWC)**

Total Annual Cost:	\$236,443	
Total Carrying Value:	\$2,567,336	
Embedded Cost = Total Annual Cost/Total Carrying Value		9.21%

Sources: Missouri-American Water Company's response to Staff's Data Request No. 0141.

**Missouri-American Water Company
Case No. WR-2011-0337**

Criteria for Selecting Comparable Water Utility Companies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Water Utility Companies(Ticker)	Stock Publicly Traded	Information Printed in Value Line	5-Years of Data Available	At Least An Investment Grade Credit Rating from S&P	Projected Growth Rate Available from Value Line or Reuters	>75% of Revenues from Water Operations	Comparable Company Met All Criteria
American States Water Company (AWR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
American Water Works Company (AWK)	Yes	Yes	No				
Aqua America Inc. (WTR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Artesian Resources Corporation (ARTNA)	Yes	Yes	Yes	N.R.			
California Water Service Group (CWT)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connecticut Water Service, Inc. (CTWS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Middlesex Water Company (MSEX)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pennichuck Corporation (PNNW)	Yes	Yes	Yes	N.R.			
SJW Corporation (SJW)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
York Water Company (YORW)	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sources:

- Columns 1 and 2 = Edward Jones Water Utility Industry Summary Quarterly Financial and Common Stock Information for June 30, 2011.
- Columns 3, 4 and 6 = The Value Line Investment Survey: Ratings & Reports, July 22, 2011.
- Column 5 = Standard & Poor's RatingsDirect.
- Column 6 = Reuters and The Value Line Investment Survey: Ratings & Reports, July 22, 2011.
- Column 7 = AUS Utility Reports, September 2011.

Notes: N.R.=Not Rated by Standard and Poor's

**Missouri-American Water Company
Case No. WR-2011-0337**

**Comparable Water Utility Companies
for Missouri-American Water Company**

Number	Ticker Symbol	Company Name
1	AWR	American States Water Company
2	WTR	Aqua America Inc.
3	CWT	California Water Service Group
4	CTWS	Connecticut Water Services Inc.
5	SJW	SJW Corporation
6	YORW	York Water Company

Note: Staff notes that Middlesex Water Company has been excluded from the comparable water utility companies as there is not a long-term projected growth rate from Value Line and the long-term projected growth rate from Reuters is a -5.00 percent rated by one analyst. Staff did not include a negative growth rate as Staff has not been able to contact the analyst from Reuters whom rates Middlesex Water Company to discover the reason for a negative growth rate.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Ten-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates
for the Comparable Water Utility Companies**

	10-Year Annual Compound Growth Rates			
Company Name	DPS	EPS	BVPS	Average of 10-Year Annual Compound Growth Rates
American States Water Company	2.00%	4.50%	5.00%	3.83%
Aqua America Inc.	7.50%	6.50%	9.00%	7.67%
California Water Service Group	1.00%	3.00%	4.50%	2.83%
Connecticut Water Services Inc.	NA	NA	NA	NA
SJW Corporation	5.00%	2.00%	6.00%	4.33%
York Water Company	NA	NA	NA	NA
Average	3.88%	4.00%	6.13%	4.67%
Standard Deviation	2.56%	1.70%	1.75%	2.65%

Source: The Value Line Investment Survey, July 22, 2011.

NA = Not Available

**Missouri-American Water Company
Case No. WR-2011-0337**

**Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates
for the Comparable Water Utility Companies**

Company Name	----- 5-Year Annual Compound Growth Rates -----			Average of 5-Year Annual Compound Growth Rates
	DPS	EPS	BVPS	
American States Water Company	2.50%	11.50%	5.00%	6.33%
Aqua America Inc.	8.00%	4.50%	7.00%	6.50%
California Water Service Group	1.00%	6.50%	5.50%	4.33%
Connecticut Water Service Inc.	1.50%	1.50%	3.00%	2.00%
SJW Corporation	5.50%	-1.50%	6.50%	3.50%
York Water Company	5.00%	5.00%	8.50%	6.17%
Average	<u>3.92%</u>	<u>4.58%</u>	<u>5.92%</u>	<u>4.81%</u>
Standard Deviation	2.47%	4.05%	1.72%	1.68%

Source: The Value Line Investment Survey, July 22, 2011.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Average of Ten and Five-Year Dividends Per Share, Earnings Per Share &
Book Value Per Share Growth Rates for the Comparable Water Utility Companies**

<u>Company Name</u>	10-Year Average DPS, EPS & BVPS	5-Year Average DPS, EPS & BVPS	Average of 5-Year & 10-Year Averages
American States Water Company	3.83%	6.33%	5.08%
Aqua America Inc.	7.67%	6.50%	7.08%
California Water Service Group	2.83%	4.33%	3.58%
Connecticut Water Service Inc.	NA	2.00%	2.00%
SJW Corporation	4.33%	3.50%	3.92%
York Water Company	NA	6.17%	6.17%
Average	<u>4.67%</u>	<u>4.81%</u>	<u>4.64%</u>

NA = Not Available

**Missouri-American Water Company
Case No. WR-2011-0337**

**Five-Year Projected Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates
for the Comparable Water Utility Companies**

	5-Year Projected Compound Growth Rates			
Company Name	DPS	EPS	BVPS	Average of 5-Year Annual Compound Growth Rates
American States Water Company	4.00%	5.50%	2.00%	3.83%
Aqua America Inc.	5.50%	10.50%	6.00%	7.33%
California Water Service Group	3.00%	6.00%	3.50%	4.17%
Connecticut Water Service Inc.	NA	NA	NA	NA
SJW Corporation	3.50%	5.50%	5.50%	4.83%
York Water Company	NA	NA	NA	NA
Average	4.00%	6.88%	4.25%	5.04%
Standard Deviation	0.94%	2.10%	1.60%	2.63%

NA=Not Available

Source: The Value Line Investment Survey, July 22, 2011.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Projected EPS Growth Rates
for the Comparable Water Utility Companies**

Company Name	(1) Projected 5-Year EPS Growth Reuters (Mean)	(2) Projected 3-5 Year EPS Growth Value Line	(3) Average Projected EPS Growth
American States Water Company	7.15%	5.50%	6.33%
Aqua America Inc.	7.25%	10.50%	8.88%
California Water Service Group	6.00%	6.00%	6.00%
Connecticut Water Service Inc.	8.00%	NA	8.00%
SJW Corporation	14.00%	5.50%	9.75%
York Water Company	6.00%	NA	6.00%
Average	<u>8.07%</u>	<u>6.88%</u>	<u>7.49%</u>
Standard Deviation	2.75%	2.10%	1.48%

NA=Not Available

Sources:

Column 1 = Analyst Estimates Accessed from Reuters on October 12, 2011.

Column 2 = The Value Line Investment Survey, July 22, 2011.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Historical and Projected Growth Rates
for the Comparable Water Utility Companies**

	(1)	(2)	(3)	(4)	(5)
	Historical Growth Rate (DPS, EPS and BVPS)	Projected 5-Year EPS Growth Consensus Estimates (Mean)	Projected 3-5 Year EPS Growth Value Line	Average Projected EPS Growth	Average of Historical & Projected Growth
Company Name					
American States Water Company	5.08%	7.15%	5.50%	6.33%	5.70%
Aqua America Inc.	7.08%	7.25%	10.50%	8.88%	7.98%
California Water Service Group	3.58%	6.00%	6.00%	6.00%	4.79%
Connecticut Water Service Inc.	2.00%	8.00%	NA	8.00%	5.00%
SJW Corporation	3.92%	14.00%	5.50%	9.75%	6.83%
York Water Company	6.17%	6.00%	NA	6.00%	6.08%
Average	4.64%	8.07%	6.88%	7.49%	6.07%

Proposed Range of Growth for Comparables: 5.60%-6.60%

Column 4 = [(Column 2 + Column 3) / 2]

Column 5 = [(Column 1 + Column 4) / 2]

Sources:

Column 1 = Average of 10-Year and 5-Year Annual Compound Growth Rates from Schedule 12-3.

Column 2 = <http://www.reuters.com/finance/stocks/estimates>

Column 3 = The Value Line Investment Survey, July 22, 2011.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Average High / Low Stock Price for July 2011 through September 2011
for the Comparable Water Utility Companies**

Company Name	(1)		(2)		(3)		(4)		(5)		(6)		(7)
	-- July 2011 --		-- August 2011 --		-- September 2011 --								Average High/Low Stock Price (07/11 - 09/11)
	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	
American States Water Company	\$ 35.75	\$ 33.50	\$ 35.50	\$ 30.53	\$ 35.50	\$ 32.20	\$ 35.50	\$ 32.20	\$ 35.50	\$ 32.20	\$ 35.50	\$ 32.20	\$ 33.83
Aqua America Inc.	\$ 22.74	\$ 20.87	\$ 22.48	\$ 19.28	\$ 22.35	\$ 20.41	\$ 22.35	\$ 20.41	\$ 22.35	\$ 20.41	\$ 22.35	\$ 20.41	\$ 21.36
California Water Service Group	\$ 19.37	\$ 18.18	\$ 18.92	\$ 16.65	\$ 18.99	\$ 16.81	\$ 18.99	\$ 16.81	\$ 18.99	\$ 16.81	\$ 18.99	\$ 16.81	\$ 18.15
Connecticut Water Service Inc.	\$ 26.55	\$ 25.07	\$ 28.15	\$ 25.11	\$ 26.87	\$ 24.77	\$ 26.87	\$ 24.77	\$ 26.87	\$ 24.77	\$ 26.87	\$ 24.77	\$ 26.09
SJW Corporation	\$ 24.91	\$ 22.76	\$ 24.16	\$ 20.89	\$ 23.60	\$ 20.87	\$ 23.60	\$ 20.87	\$ 23.60	\$ 20.87	\$ 23.60	\$ 20.87	\$ 22.87
York Water Company	\$ 17.94	\$ 16.45	\$ 18.14	\$ 16.02	\$ 17.89	\$ 16.00	\$ 17.89	\$ 16.00	\$ 17.89	\$ 16.00	\$ 17.89	\$ 16.00	\$ 17.07

Notes:

Column 7 = [(Column 1 + Column 2 + Column 3 + Column 4 + Column 5 + Column 6 / 6].

Source: <http://finance.yahoo.com>

**Missouri-American Water Company
Case No. WR-2011-0337**

**Constant-Growth Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Water Utility Companies**

	(1)	(2)	(3)	(4)	(5)
Company Name	Expected Annual Dividend	Average High/Low Stock Price	Projected Dividend Yield	Average of Historical & Projected Growth	Estimated Cost of Common Equity
American States Water Company	\$1.18	\$33.830	3.49%	5.70%	9.19%
Aqua America Inc.	\$0.69	\$21.355	3.22%	7.98%	11.19%
California Water Service Group	\$0.65	\$18.153	3.60%	4.79%	8.39%
Connecticut Water Service Inc.	\$0.93 ¹	\$26.087	3.57%	5.00%	8.57%
SJW Corporation	\$0.75	\$22.865	3.28%	6.83%	10.11%
York Water Company	\$0.52 ²	\$17.073	3.05%	6.08%	9.13%
Average			<u><u>3.37%</u></u>	<u><u>6.07%</u></u>	<u><u>9.43%</u></u>

Proposed Dividend Yield: 3.37%

Proposed Range of Growth: 5.60% - 6.60%

Indicated Cost of Common Equity: 8.97% - 9.97%

Notes:

Column 1 = Average of 2011 through 2016 Estimated Dividends Declared per from Value Line.

Column 3 = (Column 1 / Column 2).

Column 5 = (Column 3 + Column 4).

Sources:

Column 1 = The Value Line Investment Survey: Ratings and Reports, July 22, 2011.

Column 2 = Schedule 16.

Column 4 = Schedule 15.

¹ Connecticut Water Service was calculated by taking the 2011 first quarter dividend times four.

² York Water Company was calculated by taking the 2011 first quarter dividend times four.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Capital Asset Pricing Model (CAPM) Costs of Common Equity Estimates
Based on Historical Return Differences Between Common Stocks and Long-Term U.S. Treasuries
for the Comparable Water Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)
Company Name	Risk Free Rate	Company's Value Line Beta	Arithmetic Average Market Risk Premium (1926-2010)	Geometric Average Market Risk Premium (1926-2010)	Arithmetic CAPM Cost of Common Equity (1926-2010)	Geometric CAPM Cost of Common Equity (1926-2010)
American States Water Company	3.04%	0.75	6.00%	4.40%	7.54%	6.34%
Aqua America Inc.	3.04%	0.65	6.00%	4.40%	6.94%	5.90%
California Water Service Group	3.04%	0.70	6.00%	4.40%	7.24%	6.12%
Connecticut Water Service Inc.	3.04%	0.80	6.00%	4.40%	7.84%	6.56%
SJW Corporation	3.04%	0.90	6.00%	4.40%	8.44%	7.00%
York Water Company	3.04%	0.70	6.00%	4.40%	7.24%	6.12%
Average		0.75			7.54%	6.34%

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for September 2011 which was obtained from the St. Louis Federal Reserve website at <http://research.stlouisfed.org/fred2/series/GS30/22>.

Column 2 = Beta is a measure of the movement and relative risk of an individual stock to the market as a whole as reported by the Value Line Investment Survey: Ratings & Reports, July 22, 2011.

Column 3 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2010 was determined to be 6.60% based on an arithmetic average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2010 Yearbook.

Column 4 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium for the period 1926 - 2010 was determined to be 4.40% based on a geometric average as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2010 Yearbook.

Column 5 = (Column 1 + (Column 2 * Column 3)).

Column 6 = (Column 1 + (Column 2 * Column 4)).

Missouri-American Water Company
Case No. WR-2011-0337

Selected Financial Ratios for the Comparable Water Utility Companies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Company Name	2011 Estimated Common Equity Ratio	2011 Estimated Long-Term Debt Ratio	Funds From Operations Interest Coverage	Funds From Operations to Total Debt	Market- to-Book Value	2011 Estimated Return on Common Equity	2012 Estimated Return on Common Equity	S&P Corporate Credit Rating
American States Water Company	55.00%	45.00%	5.50 x ¹	29.00% ¹	1.60 x	10.00%	10.50%	A+
Aqua America Inc.	47.00%	53.00%	3.60 x ²	20.40% ²	2.39 x	11.50%	11.50%	A+
California Water Service Group	49.50%	50.50%	3.30 x ⁴	15.00% ⁴	1.68 x	10.00%	10.00%	A+
Connecticut Water Service Inc.	51.00% ⁵	49.00% ⁵	4.60 x	14.70%	2.02 x	NA	NA	A
SJW Corporation	44.00%	56.00%	3.60 ⁶	15.00% ⁶	1.57 x	6.50%	7.00%	A
York Water Company	52.00% ³	48.00% ³	4.20 x	18.00% ⁷	2.31 x	NA	NA	A-
Average	49.75%	50.25%	4.13 x	18.68%	1.93 x	9.50%	9.75%	A

Sources:

The Value Line Investment Survey Ratings & Reports, July 22, 2011 for columns (1), (2), (6) and (7).

Standard & Poor's RatingsDirect for columns (3), (4) and (8).

AUS Utility Reports, September 2011 for column (5).

Notes:

¹ As of July 26, 2011.

² As of September 30, 2011.

³ Based on York Water Company's SEC Form 10-Q Filing for June 30, 2011.

⁴ As of June 30, 2011.

⁵ Based on Connecticut Water Service Inc.'s SEC Form 10Q Filing for June 30, 2011.

⁶ As of June 6, 2011.

⁷ As of April 29, 2011.

**Missouri-American Water Company
Case No. WR-2011-0337**

**Public Utility Revenue Requirement
or
Cost of Service**

The formula for the revenue requirement of a public utility may be stated as follows :

Equation 1 : **Revenue Requirement = Cost of Service**

or

Equation 2 : **$R R = O + (V - D) R$**

The symbols in the second equation are represented by the following factors :

$R R$	=	Revenue Requirement
O	=	Prudent Operating Costs, including Depreciation and Taxes
V	=	Gross Valuation of the Property Serving the Public
D	=	Accumulated Depreciation
$(V - D)$	=	Rate Base (Net Valuation)
$(V - D) R$	=	Return Amount (\$\$) or Earnings Allowed on Rate Base
R	=	$i L + d P + k E$ or Overall Rate of Return (%)
i	=	Embedded Cost of Debt
L	=	Proportion of Debt in the Capital Structure
d	=	Embedded Cost of Preferred Stock
P	=	Proportion of Preferred Stock in the Capital Structure
k	=	Required Return on Common Equity (ROE)
E	=	Proportion of Common Equity in the Capital Structure

**Missouri-American Water Company
Case No. WR-2011-0337**

**Weighted Cost of Capital as of December 31, 2010
for Missouri-American Water Company**

Capital Component	Percentage of Capital	Embedded Cost	Weighted Cost of Capital Using Common Equity Return of:		
			9.40%	9.90%	10.40%
Common Stock Equity	42.95%	-----	4.04%	4.25%	4.47%
Preferred Stock	0.29%	9.21%	0.03%	0.03%	0.03%
Long-Term Debt	56.76%	6.19%	3.51%	3.51%	3.51%
Short-Term Debt	0.00%		0.00%	0.00%	0.00%
Total	<u>100.00%</u>		<u>7.58%</u>	<u>7.79%</u>	<u>8.01%</u>

Sources:

See Schedule 7 for the Capital Structure Ratios.