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Service Commission

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT COST OF SERVICE

APPENDIX 2 Support for Staff Cost of Capital Recommendations

Staff Exhibit No. 1-App 2
Date 3-21-16 Reporter TW
File No. WR-2015-0301

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

Staff Ex 1
App 2

AN ANALYSIS OF THE COST OF CAPITAL

FOR

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

SCHEDULES

BY

DAVID MURRAY

FINANCIAL ANALYSIS

COMMISSION STAFF DIVISION

MISSOURI PUBLIC SERVICE COMMISSION

DECEMBER 2015

Missouri-American Water Company
Case No. WR-2015-0301

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Missouri-American Water Company
Case No. WR-2015-0301

Federal Reserve Discount Rates Changes and Federal Reserve Funds Rates Changes

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate	Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
01/01/83	8.50%		06/30/99	4.50%	5.00%
12/31/83	8.50%		08/24/99	4.75%	5.25%
04/09/84	9.00%		11/16/99	5.00%	5.50%
11/21/84	8.50%		02/02/00	5.25%	5.75%
12/24/84	8.00%		03/21/00	5.50%	6.00%
05/20/85	7.50%		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		8.00%	08/21/01	3.00%	3.50%
10/29/90		7.75%	09/17/01	2.50%	3.00%
11/13/90		7.50%	10/02/01	2.00%	2.50%
12/07/90		7.25%	11/06/01	1.50%	2.00%
12/18/90		7.00%	12/11/01	1.25%	1.75%
12/19/90	6.50%		11/06/02	0.75%	1.25%
01/09/91		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%	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%	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%	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%	03/22/05	3.75%	2.75%
12/20/91	3.50%	4.00%	05/03/05	4.00%	3.00%
04/09/92		3.75%	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%	09/20/05	4.75%	3.75%
01/01/93			11/01/05	5.00%	4.00%
12/31/93	No Changes	No Changes	12/13/05	5.25%	4.25%
02/04/94		3.25%	01/31/06	5.50%	4.50%
03/22/94		3.50%	03/28/06	5.75%	4.75%
04/18/94		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		5.75%	12/11/07	4.75%	4.25%
12/19/95		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		5.50%	03/16/08	3.25%	
12/12/97	5.00%		03/18/08	2.50%	2.25%
01/09/98	5.00%		04/30/08	2.25%	2.00%
03/06/98	5.00%		10/08/08	1.75%	1.50%
09/29/98		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%

* 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.htm>

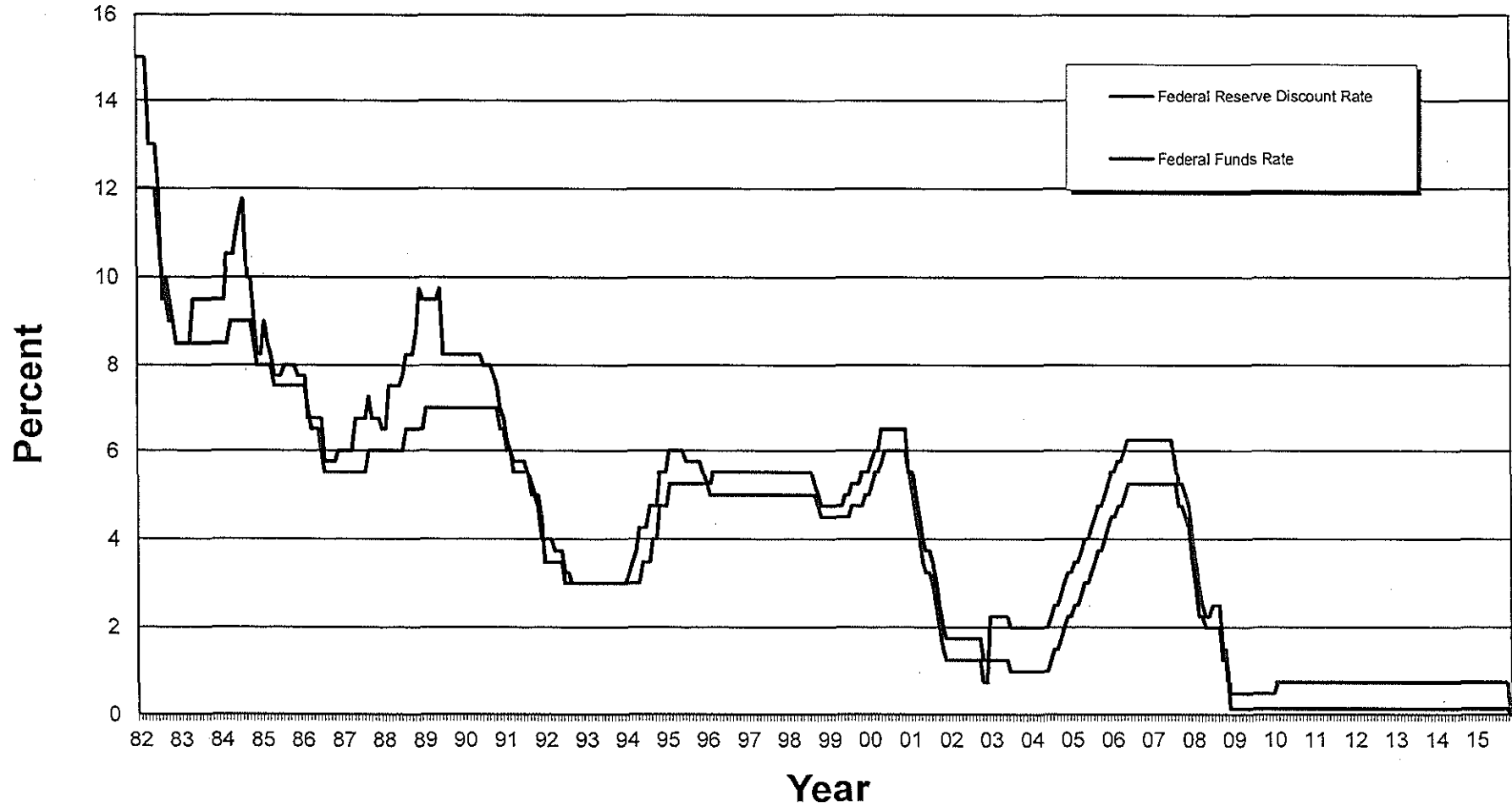
Federal Reserve Funds rate

<http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.htm>

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

MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2015-0301

Federal Reserve Discount Rates and Federal Funds Rates
1982 - 2015



**Missouri-American Water Company
Case No. WR-2015-0301**

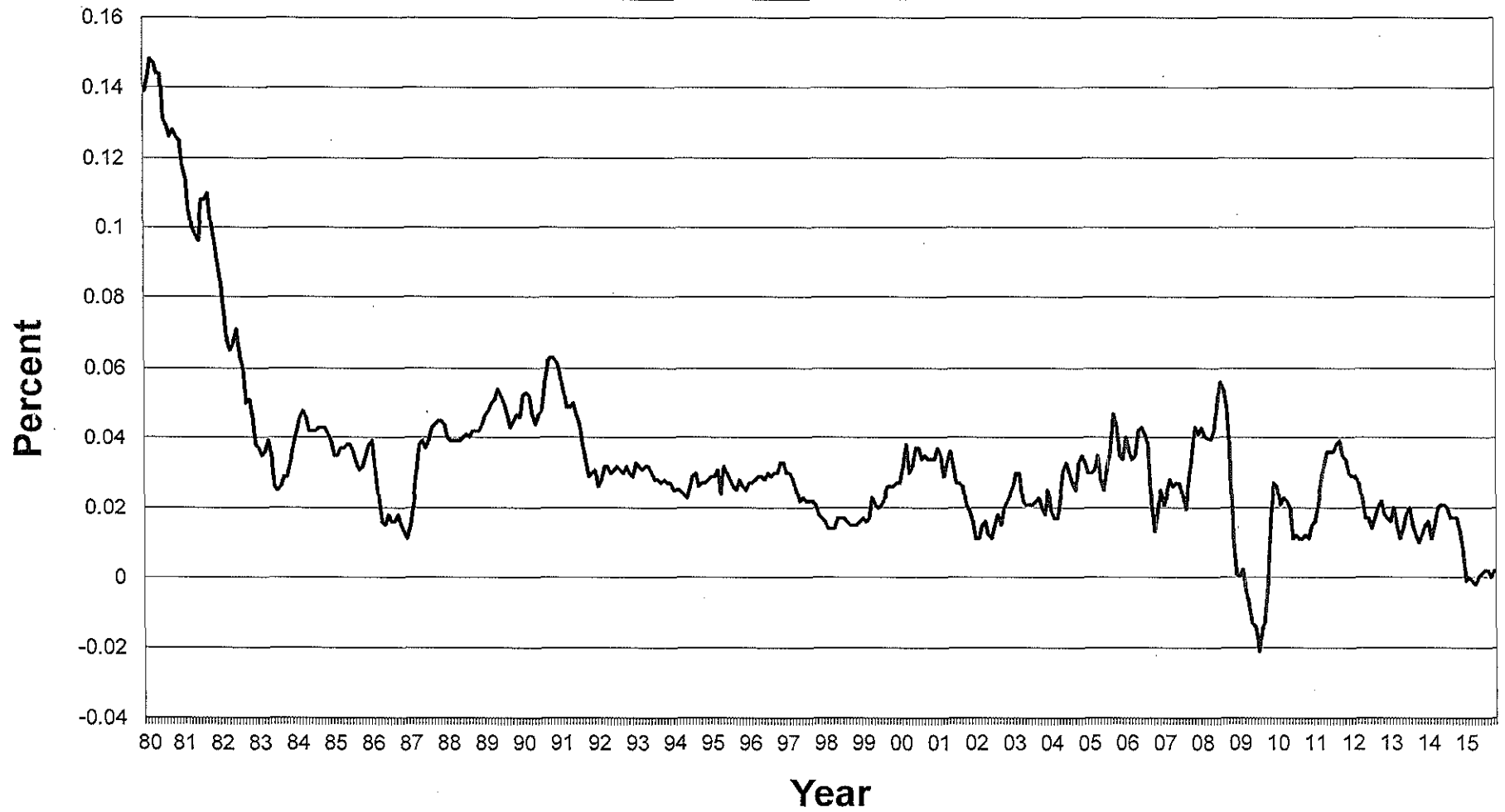
Rate of Inflation

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	2.90	Mar	2.80	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	June	4.30	Jun	1.10
Jul	6.40	Jul	1.60	Jul	4.60	Jul	2.90	Jul	1.70	Jul	1.50	July	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	2.80	Sep	4.40	Sep	3.40	Sep	2.50	Sep	2.60	Sep	2.30	Sep	2.80	Sep	3.90
Oct	2.90	Oct	4.50	Oct	2.90	Oct	2.80	Oct	2.60	Oct	2.00	Oct	3.50	Oct	3.50
Nov	3.30	Nov	4.50	Nov	3.00	Nov	2.60	Nov	2.60	Nov	1.80	Nov	4.30	Nov	3.40
Dec	3.80	Dec	4.40	Dec	3.10	Dec	2.50	Dec	2.70	Dec	1.90	Dec	4.10	Dec	3.00

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-AMEREN WATER COMPANY
CASE NO. WR-2015-0301

Rate of Inflation
1980 - 2015



**MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2015-0301**

Average Yields on Moody'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 (%)	Mo/Year	Rate (%)
Jan 1980	12.12	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	Jan 2012	4.48
Feb	13.48	Feb	13.50	Feb	10.11	Feb	8.77	Feb	7.37	Feb	8.10	Feb	6.17	Feb	6.28	Feb	4.47
Mar	14.33	Mar	14.03	Mar	10.11	Mar	8.84	Mar	7.72	Mar	8.14	Mar	6.01	Mar	6.29	Mar	4.59
Apr	13.50	Apr	14.30	Apr	10.53	Apr	8.79	Apr	7.88	Apr	8.14	Apr	6.38	Apr	6.38	Apr	4.54
May	12.17	May	14.95	May	10.75	May	8.72	May	7.99	May	8.55	May	6.88	May	6.38	May	4.38
Jun	11.87	Jun	15.18	Jun	10.71	Jun	8.64	Jun	8.07	Jun	8.22	Jun	6.53	Jun	6.50	Jun	4.28
Jul	12.12	Jul	14.92	Jul	10.86	Jul	8.46	Jul	8.02	Jul	8.17	Jul	6.34	Jul	6.50	Jul	4.12
Aug	12.82	Aug	14.29	Aug	11.09	Aug	8.34	Aug	7.84	Aug	8.05	Aug	6.18	Aug	6.48	Aug	4.18
Sep	13.29	Sep	14.04	Sep	10.58	Sep	8.32	Sep	8.01	Sep	8.16	Sep	6.01	Sep	6.59	Sep	4.17
Oct	13.53	Oct	13.68	Oct	9.92	Oct	8.44	Oct	7.78	Oct	8.08	Oct	5.95	Oct	7.70	Oct	4.04
Nov	14.07	Nov	13.15	Nov	9.89	Nov	8.53	Nov	7.48	Nov	8.03	Nov	5.97	Nov	7.80	Nov	3.95
Dec	14.48	Dec	12.98	Dec	10.02	Dec	8.36	Dec	7.58	Dec	7.79	Dec	5.93	Dec	6.87	Dec	4.10
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	Jan 2013	4.24
Feb	14.84	Feb	13.00	Feb	10.02	Feb	8.00	Feb	7.68	Feb	7.69	Feb	5.64	Feb	6.72	Feb	4.29
Mar	14.88	Mar	13.68	Mar	10.18	Mar	7.85	Mar	7.92	Mar	7.59	Mar	5.88	Mar	6.85	Mar	4.29
Apr	15.32	Apr	13.42	Apr	10.14	Apr	7.78	Apr	8.08	Apr	7.81	Apr	5.72	Apr	6.90	Apr	4.08
May	15.84	May	12.89	May	9.92	May	7.78	May	7.94	May	7.88	May	5.60	May	6.83	May	4.24
Jun	15.27	Jun	11.91	Jun	9.49	Jun	7.88	Jun	7.77	Jun	7.75	Jun	5.39	June	6.54	Jun	4.63
Jul	15.87	Jul	11.88	Jul	9.34	Jul	7.53	Jul	7.52	Jul	7.71	Jul	5.50	July	6.15	Jul	4.78
Aug	16.33	Aug	11.93	Aug	9.37	Aug	7.21	Aug	7.57	Aug	7.57	Aug	5.51	Aug	5.80	Aug	4.85
Sep	16.89	Sep	11.95	Sep	9.43	Sep	7.01	Sep	7.50	Sep	7.73	Sep	5.54	Sep	5.90	Sep	4.90
Oct	16.76	Oct	11.84	Oct	9.37	Oct	6.99	Oct	7.37	Oct	7.64	Oct	5.79	Oct	5.64	Oct	4.78
Nov	15.50	Nov	11.33	Nov	9.33	Nov	7.30	Nov	7.24	Nov	7.61	Nov	5.88	Nov	5.71	Nov	4.86
Dec	15.77	Dec	10.82	Dec	9.31	Dec	7.33	Dec	7.16	Dec	7.86	Dec	5.83	Dec	5.86	Dec	4.88
Jan 1982	16.73	Jan 1986	10.68	Jan 1990	9.44	Jan 1994	7.31	Jan 1998	7.03	Jan 2002	7.69	Jan 2006	5.77	Jan 2010	5.83	Jan 2014	4.72
Feb	16.72	Feb	10.16	Feb	9.66	Feb	7.44	Feb	7.09	Feb	7.62	Feb	5.83	Feb	5.84	Feb	4.64
Mar	16.07	Mar	9.33	Mar	9.75	Mar	7.83	Mar	7.13	Mar	7.83	Mar	5.98	Mar	5.90	Mar	4.64
Apr	15.82	Apr	9.02	Apr	9.87	Apr	8.20	Apr	7.12	Apr	7.74	Apr	6.28	Apr	5.87	Apr	4.52
May	15.60	May	9.52	May	9.69	May	8.32	May	7.11	May	7.76	May	6.39	May	5.59	May	4.37
Jun	16.18	Jun	9.51	Jun	9.69	Jun	8.31	Jun	6.99	Jun	7.67	June	6.39	June	5.62	Jun	4.42
Jul	16.04	Jul	9.19	Jul	9.66	Jul	8.47	Jul	6.99	Jul	7.54	July	6.37	July	5.41	Jul	4.35
Aug	15.22	Aug	8.15	Aug	9.84	Aug	8.41	Aug	6.98	Aug	7.34	Aug	6.20	Aug	5.10	Aug	4.28
Sep	14.56	Sep	9.42	Sep	10.01	Sep	8.65	Sep	6.88	Sep	7.23	Sep	6.03	Sep	5.10	Sep	4.40
Oct	13.88	Oct	9.39	Oct	9.94	Oct	8.88	Oct	6.88	Oct	7.43	Oct	6.01	Oct	5.20	Oct	4.24
Nov	13.58	Nov	9.15	Nov	9.76	Nov	9.00	Nov	6.96	Nov	7.31	Nov	5.82	Nov	5.45	Nov	4.29
Dec	13.55	Dec	8.98	Dec	9.57	Dec	8.79	Dec	6.84	Dec	7.20	Dec	5.83	Dec	5.64	Dec	4.18
Jan 1983	13.46	Jan 1987	8.77	Jan 1991	9.58	Jan 1995	8.77	Jan 1999	8.87	Jan 2003	7.13	Jan 2007	5.96	Jan 2011	5.64	Jan 2015	3.83
Feb	13.60	Feb	8.81	Feb	9.31	Feb	8.56	Feb	7.00	Feb	6.92	Feb	5.91	Feb	5.73	Feb	3.91
Mar	13.28	Mar	8.75	Mar	9.39	Mar	8.41	Mar	7.18	Mar	6.80	Mar	5.87	Mar	5.62	Mar	3.97
Apr	13.03	Apr	9.30	Apr	9.30	Apr	8.30	Apr	7.16	Apr	6.88	Apr	6.01	Apr	5.62	Apr	3.96
May	13.00	May	9.82	May	9.28	May	7.93	May	7.42	May	6.35	May	6.03	May	5.38	May	4.38
Jun	13.17	Jun	9.87	Jun	9.44	Jun	7.62	Jun	7.70	Jun	6.21	June	6.34	June	5.32	June	4.60
Jul	13.28	Jul	10.01	Jul	9.40	Jul	7.73	Jul	7.66	Jul	6.54	July	6.28	July	5.34	July	4.63
Aug	13.50	Aug	10.33	Aug	9.18	Aug	7.88	Aug	7.86	Aug	6.78	Aug	6.28	Aug	4.78	Aug	4.54
Sep	13.35	Sep	11.00	Sep	9.03	Sep	7.62	Sep	7.87	Sep	6.58	Sep	6.24	Sep	4.61	Sep	4.69
Oct	13.19	Oct	11.32	Oct	8.99	Oct	7.48	Oct	8.02	Oct	6.50	Oct	6.17	Oct	4.66	Oct	4.63
Nov	13.33	Nov	10.82	Nov	8.93	Nov	7.40	Nov	7.85	Nov	6.44	Nov	6.04	Nov	4.37	Nov	4.73
Dec	13.48	Dec	10.99	Dec	8.76	Dec	7.21	Dec	8.04	Dec	6.38	Dec	6.23	Dec	4.47	Dec	

Source:
Mergent Bond Record

**MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2015-0301**

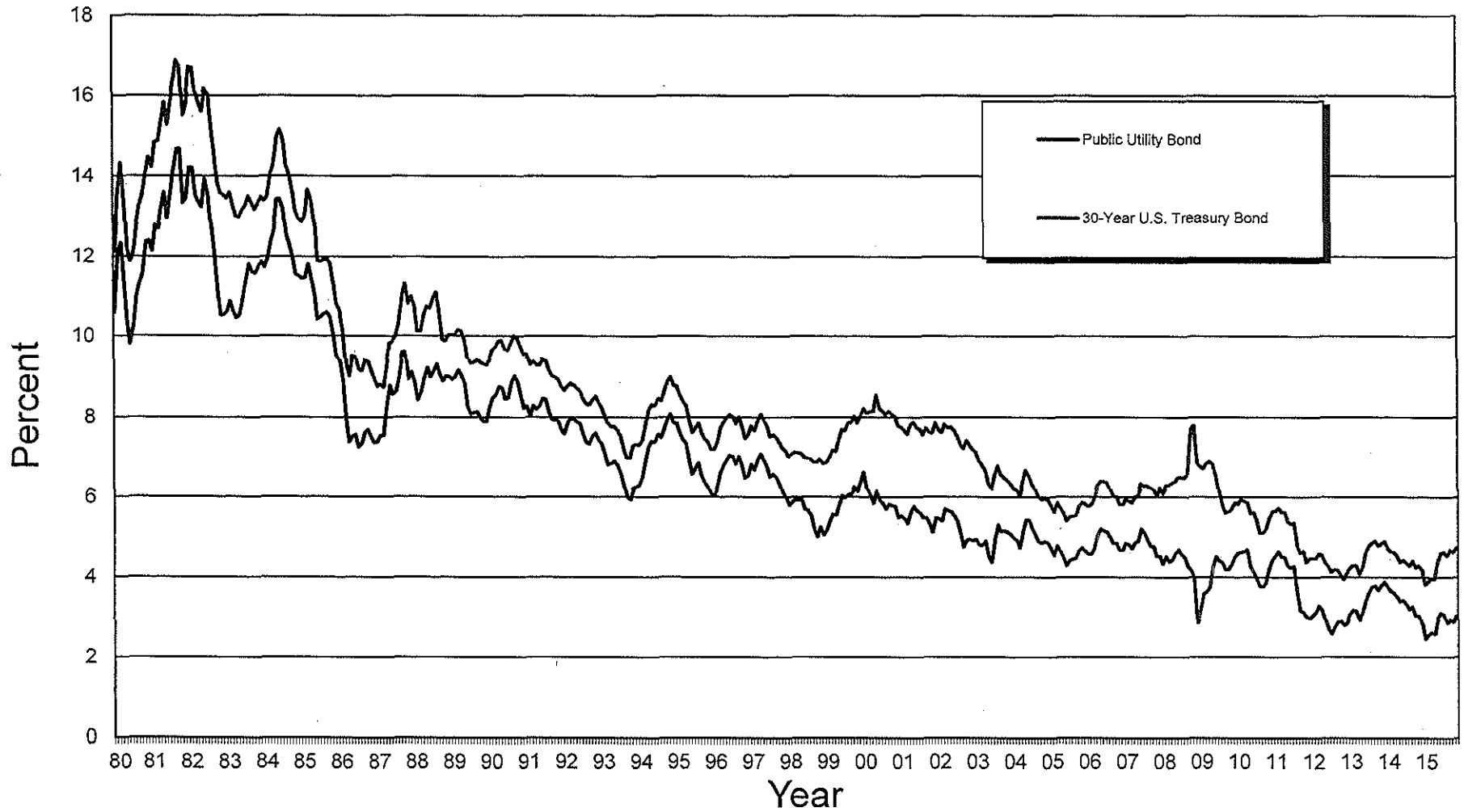
Average Yields on Thirty-Year U.S. Treasury Bonds

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	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	Jan 2012	3.03
Feb	12.13	Feb	11.95	Feb	8.43	Feb	7.85	Feb	6.24	Feb	6.23	Feb	4.93	Feb	4.52	Feb	3.11
Mar	12.34	Mar	12.38	Mar	8.63	Mar	7.97	Mar	6.80	Mar	6.05	Mar	4.74	Mar	4.39	Mar	3.28
Apr	11.40	Apr	12.65	Apr	8.85	Apr	7.96	Apr	6.79	Apr	5.85	Apr	5.14	Apr	4.44	Apr	3.18
May	10.36	May	13.43	May	8.23	May	7.89	May	6.93	May	6.15	May	5.42	May	4.60	May	2.93
Jun	9.81	Jun	13.44	Jun	9.00	Jun	7.84	Jun	7.08	Jun	5.93	Jun	5.41	Jun	4.68	Jun	2.70
Jul	10.24	Jul	13.21	Jul	9.14	Jul	7.60	Jul	7.03	Jul	5.85	Jul	5.22	Jul	4.67	Jul	2.59
Aug	11.00	Aug	12.54	Aug	9.32	Aug	7.39	Aug	6.84	Aug	5.72	Aug	5.06	Aug	4.50	Aug	2.77
Sep	11.34	Sep	12.29	Sep	9.06	Sep	7.34	Sep	7.03	Sep	5.83	Sep	4.90	Sep	4.27	Sep	2.88
Oct	11.59	Oct	11.98	Oct	8.89	Oct	7.53	Oct	6.81	Oct	5.80	Oct	4.88	Oct	4.17	Oct	2.90
Nov	12.37	Nov	11.56	Nov	9.02	Nov	7.61	Nov	6.48	Nov	5.78	Nov	4.89	Nov	4.00	Nov	2.80
Dec	12.40	Dec	11.52	Dec	9.01	Dec	7.44	Dec	6.55	Dec	5.49	Dec	4.85	Dec	2.87	Dec	2.88
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	Jan 2013	3.08
Feb	12.80	Feb	11.47	Feb	9.01	Feb	7.09	Feb	6.69	Feb	5.45	Feb	4.55	Feb	3.59	Feb	3.17
Mar	12.89	Mar	11.81	Mar	9.17	Mar	6.82	Mar	6.93	Mar	5.34	Mar	4.78	Mar	3.84	Mar	3.15
Apr	13.20	Apr	11.47	Apr	9.03	Apr	6.85	Apr	7.09	Apr	4.65	Apr	4.65	Apr	3.76	Apr	2.93
May	13.60	May	11.05	May	8.83	May	6.92	May	6.94	May	5.78	May	4.49	May	4.23	May	3.11
Jun	12.96	Jun	10.44	Jun	8.27	Jun	6.81	Jun	6.77	Jun	5.67	Jun	4.29	June	4.52	Jun	3.40
Jul	13.56	Jul	10.50	Jul	8.08	Jul	6.63	Jul	6.51	Jul	5.81	Jul	4.41	July	4.41	Jul	3.61
Aug	14.17	Aug	10.56	Aug	8.12	Aug	5.32	Aug	6.58	Aug	4.46	Aug	4.46	August	4.37	Aug	3.76
Sep	14.67	Sep	10.81	Sep	8.15	Sep	6.00	Sep	6.50	Sep	5.48	Sep	4.47	Sep1	4.19	Sep	3.79
Oct	14.69	Oct	10.50	Oct	8.00	Oct	5.94	Oct	6.33	Oct	4.67	Oct	4.67	Oct	4.19	Oct	3.69
Nov	13.35	Nov	10.06	Nov	7.90	Nov	6.21	Nov	6.11	Nov	5.12	Nov	4.73	Nov	4.31	Nov	3.80
Dec	13.45	Dec	9.54	Dec	7.90	Dec	6.25	Dec	5.99	Dec	5.48	Dec	4.66	Dec	4.49	Dec	3.89
Jan 1982	14.22	Jan 1986	9.40	Jan 1990	8.28	Jan 1994	6.29	Jan 1998	5.81	Jan 2002	5.44	Jan 2006	4.59	Jan 2010	4.60	Jan 2014	3.77
Feb	14.22	Feb	8.93	Feb	8.50	Feb	6.49	Feb	5.89	Feb	5.39	Feb	4.58	Feb	4.62	Feb	3.66
Mar	13.53	Mar	7.98	Mar	8.56	Mar	6.91	Mar	5.95	Mar	5.71	Mar	4.73	Mar	4.84	Mar	3.62
Apr	13.37	Apr	7.39	Apr	8.76	Apr	7.27	Apr	5.92	Apr	5.87	Apr	5.09	Apr	4.89	Apr	3.52
May	13.24	May	7.52	May	8.73	May	7.41	May	5.93	May	5.64	May	5.20	May	4.29	May	3.39
Jun	13.92	Jun	7.57	Jun	8.46	Jun	7.40	Jun	5.70	Jun	5.52	Jun	5.16	Jun	4.13	Jun	3.42
Jul	13.55	Jul	7.27	Jul	8.50	Jul	7.58	Jul	5.68	Jul	5.38	July	5.13	July	3.99	Jul	3.33
Aug	12.77	Aug	7.33	Aug	8.86	Aug	7.49	Aug	5.54	Aug	5.08	Aug	5.00	Aug	3.80	Aug	3.20
Sep	12.07	Sep	7.82	Sep	9.03	Sep	7.71	Sep	5.20	Sep	4.76	Sep	4.85	Sep	3.77	Sep	3.26
Oct	11.17	Oct	7.70	Oct	8.86	Oct	7.84	Oct	5.01	Oct	4.93	Oct	4.85	Oct	3.87	Oct	3.04
Nov	10.54	Nov	7.52	Nov	8.54	Nov	8.08	Nov	6.25	Nov	4.95	Nov	4.69	Nov	4.18	Nov	3.04
Dec	10.54	Dec	7.37	Dec	8.24	Dec	7.87	Dec	5.06	Dec	4.92	Dec	4.88	Dec	4.42	Dec	2.83
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	Jan 2015	2.46
Feb	10.88	Feb	7.54	Feb	8.03	Feb	7.81	Feb	5.37	Feb	4.81	Feb	4.82	Feb	4.55	Feb	2.57
Mar	10.63	Mar	7.55	Mar	8.29	Mar	7.45	Mar	5.58	Mar	4.80	Mar	4.72	Mar	4.51	Mar	2.63
Apr	10.48	Apr	8.25	Apr	8.21	Apr	7.36	Apr	5.55	Apr	4.90	Apr	4.86	Apr	4.50	Apr	2.59
May	10.53	May	8.78	May	8.27	May	6.95	May	5.81	May	4.53	May	4.90	May	4.29	May	2.96
Jun	10.93	Jun	8.57	Jun	8.47	Jun	6.57	Jun	6.04	Jun	4.37	Jun	5.20	Jun	4.23	Jun	3.11
Jul	11.40	Jul	8.64	Jul	8.45	Jul	6.72	Jul	5.98	Jul	4.93	July	5.11	Jul	4.27	Jul	3.07
Aug	11.82	Aug	8.97	Aug	8.14	Aug	6.86	Aug	6.07	Aug	5.30	Aug	4.93	Aug	3.65	Aug	2.86
Sep	11.83	Sep	9.69	Sep	7.65	Sep	6.55	Sep	6.07	Sep	5.14	Sep	4.79	Sep	3.18	Sep	2.95
Oct	11.58	Oct	9.81	Oct	7.93	Oct	6.37	Oct	6.26	Oct	5.16	Oct	4.77	Oct	3.13	Oct	2.89
Nov	11.75	Nov	8.95	Nov	7.92	Nov	6.26	Nov	6.15	Nov	5.13	Nov	4.52	Nov	3.02	Nov	3.03
Dec	11.88	Dec	9.12	Dec	7.70	Dec	6.05	Dec	6.35	Dec	5.08	Dec	4.53	Dec	2.98	Dec	

Source:
<http://finance.yahoo.com/q/hp?s=^TYX>
<http://research.stlouisfed.org/fred2/data/GS30.txt>

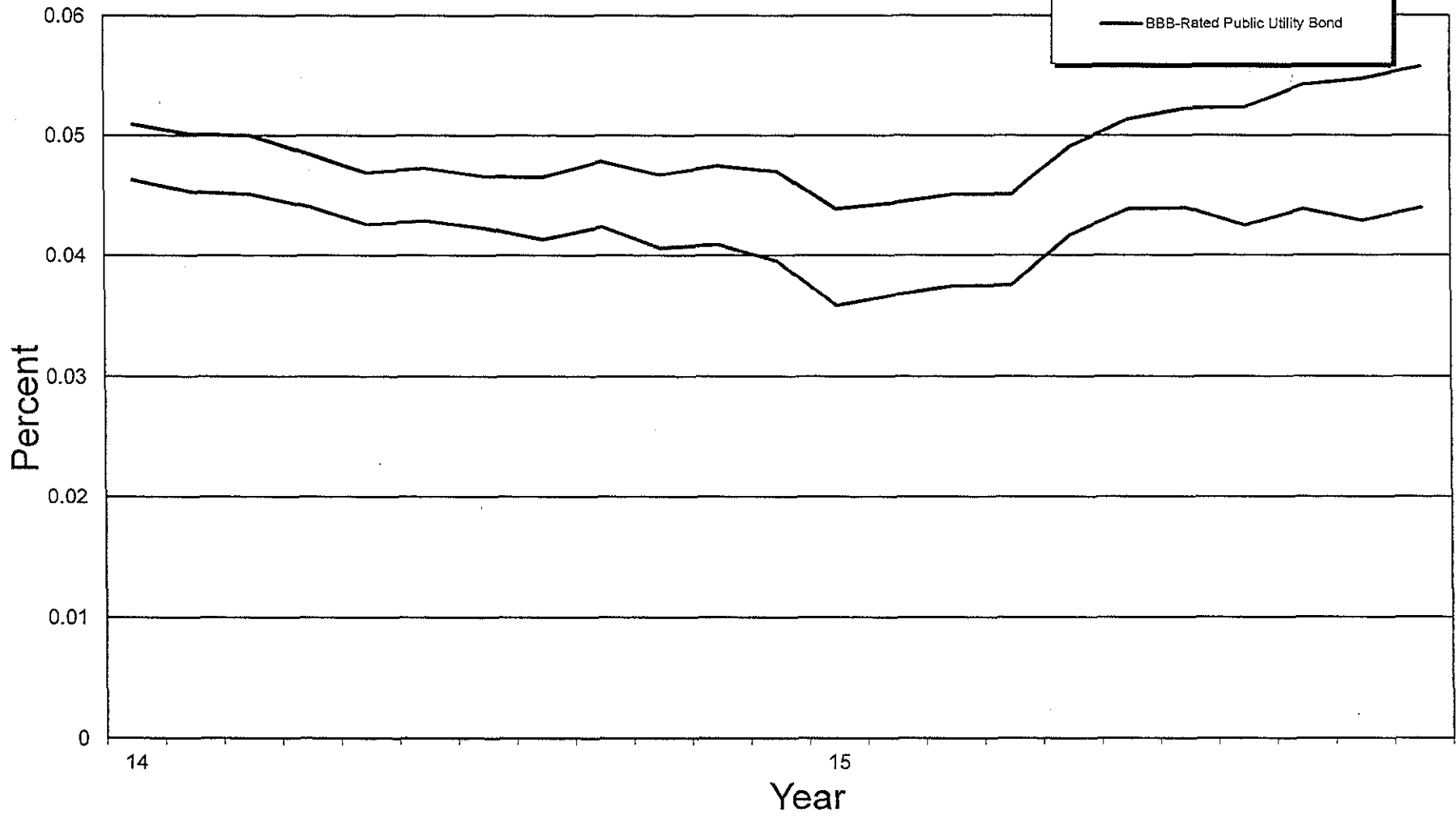
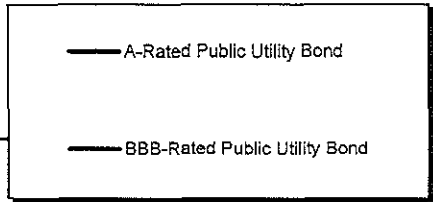
MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2015-0301

Average Yields on Public Utility Bonds and
Thirty-Year U.S. Treasury Bonds (1980 - 2015)



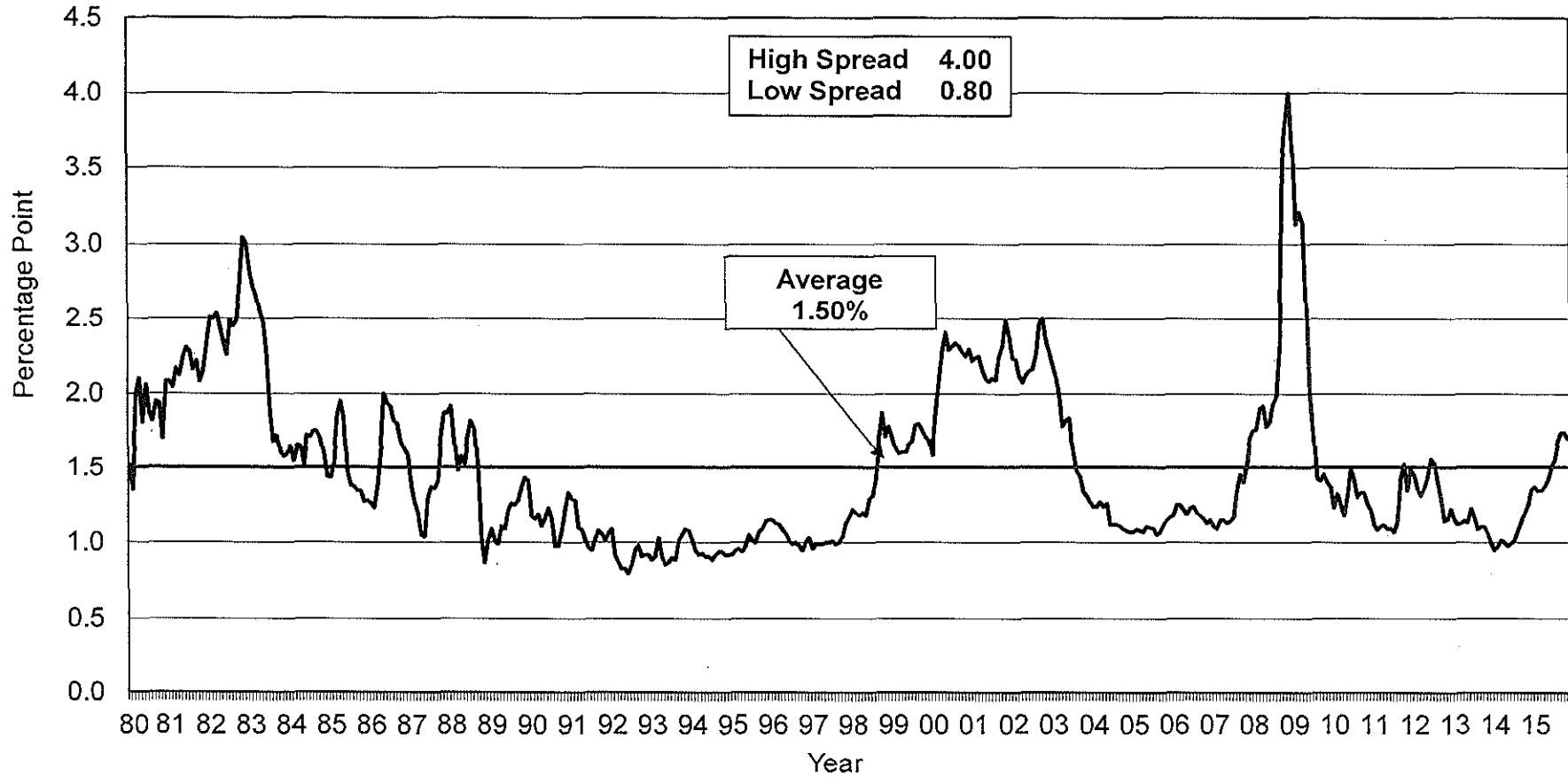
MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2015-0301

Average Yields on A-rated and
Baa-rated Pulic Utility Bonds (2014-present)



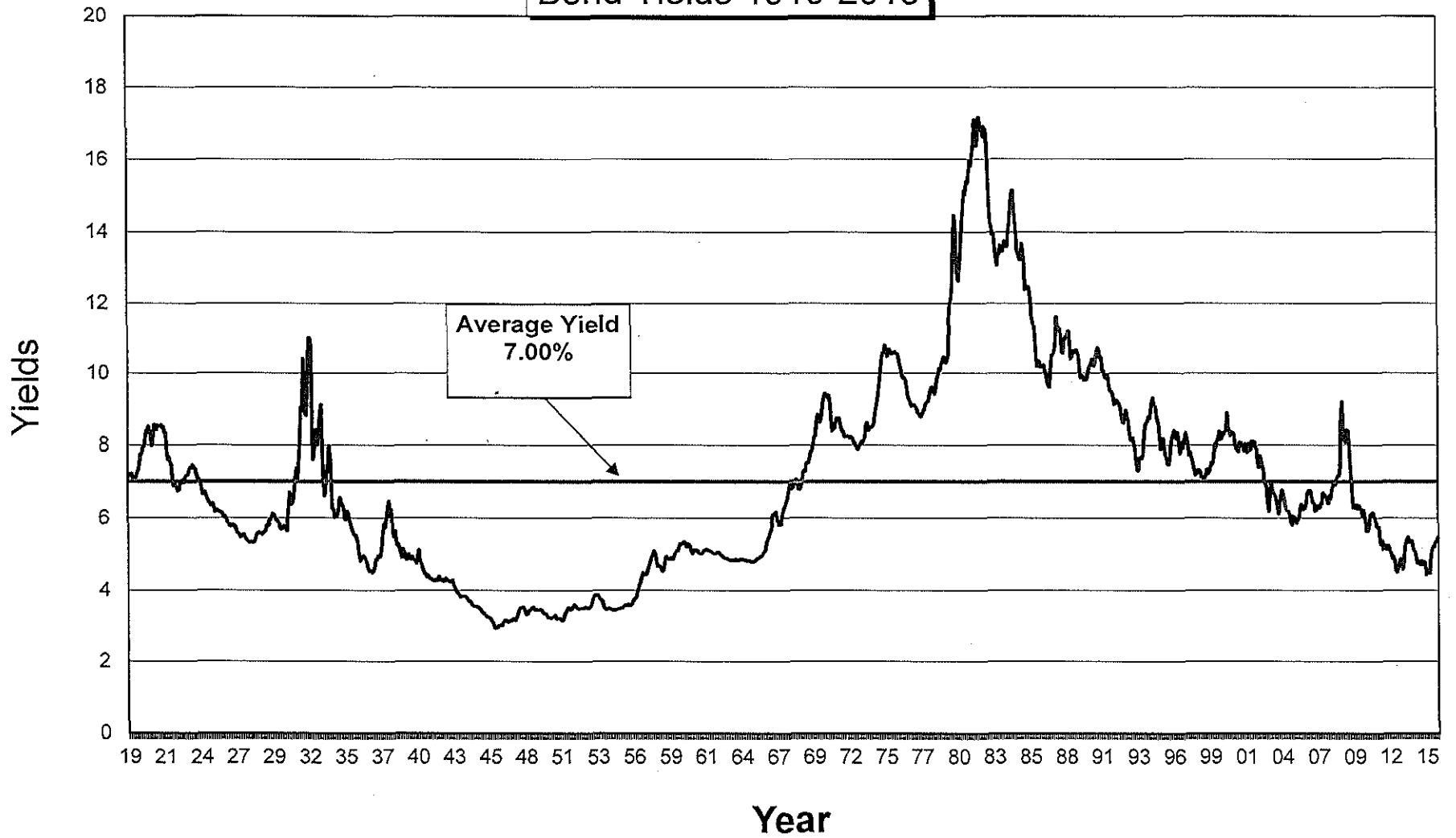
Missouri-American Water Company
Case No. WR-2015-0301

Monthly Spreads Between Yields on Public Utility Bonds and
Thirty-Year U.S. Treasury Bonds (1980 - 2015)



Missouri-American Water Company
Case No. WR-2015-0301

Moody's Baa Corporate
Bond Yields 1919-2015



**Missouri-American Water Company
Case No. WR-2015-0301**

**Historical Consolidated Capital Structures for
American Water
(Dollars in thousands)**

<u>Capital Components</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Common Equity	\$2,609,458.0	\$2,613,696.0	\$4,542,046.0	\$4,102,001.0	\$4,000,859.0
Preferred Stock	1,779,795.0 ^{2,3}	1,779,088.0 ^{2,3}	\$28,864.0 ^{2,3}	28,707.0 ^{2,3}	28,503.0 ^{2,3}
Long-Term Debt	4,366,629.0 ¹	4,352,691.0 ¹	\$4,771,292.0 ¹	4,799,885.0 ¹	5,342,248.0 ¹
	<u>\$8,755,882.0</u>	<u>\$8,745,475.0</u>	<u>\$9,342,202.0</u>	<u>\$8,930,593.0</u>	<u>\$9,371,610.0</u>

<u>Capital Components</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Common Equity	\$4,127,725.0	\$4,235,837.0	\$4,443,268.0	\$4,727,804.0	\$4,915,591.0
Preferred Stock	27,818.0 ^{2,3}	25,684.0 ^{2,3}	20,581.0 ^{2,3}	\$17,177.0 ^{2,3}	15,501.0 ^{2,3}
Long-Term Debt	5,455,031.0 ¹	5,368,805.0 ¹	5,306,428.0 ¹	\$5,227,055.0 ¹	5,493,876.0 ¹
	<u>\$9,610,574.0</u>	<u>\$9,630,326.0</u>	<u>\$9,770,277.0</u>	<u>\$9,972,036.0</u>	<u>\$10,424,968.0</u>

**Historical Consolidated Capital Structures for
Missouri-American Water Company
(Dollars in thousands)**

<u>Capital Components</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Common Equity	\$219,543.0	\$222,961.6	\$298,926.0	\$336,785.0	\$ 377,129.00
Preferred Stock	2,664.0 ³	2,704.0 ³	2,620.0 ³	2,620.0 ³	\$ 2,608.00 ³
Long-Term Debt	284,245.0 ¹	286,901.0 ¹	316,037.0 ¹	385,870.0 ¹	\$ 410,158.00 ¹
Total	<u>\$506,452.0</u>	<u>\$512,566.6</u>	<u>\$617,583.0</u>	<u>\$725,275.0</u>	<u>\$789,893.0</u>

<u>Capital Components</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Common Equity	\$413,150.0	\$435,152.0	\$446,793.0	\$474,431.0	\$485,204.0
Preferred Stock	2,596.0 ³	2,295.0 ³	2,000.0 ³	1,500.0 ³	1,500.0 ³
Long-Term Debt	409,276.0 ¹	433,834.0 ¹	448,494.0 ¹	468,450.0 ¹	468,461.0 ¹
Total	<u>\$825,022.0</u>	<u>\$871,281.0</u>	<u>\$897,287.0</u>	<u>\$944,381.0</u>	<u>\$955,165.0</u>

- Note: 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. 159 and 229, as well as Schedule B-1 in the Appendices to Staff's Cost of Service Report in Case No. WR-2010-0131.

**Missouri-American Water Company
Case No. WR-2015-0301**

**Historical Consolidated Capital Structures for
American Water
(in percentages)**

<u>Capital Components</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Common Equity	29.80%	29.89%	48.62%	45.93%	42.69%
Preferred Stock	20.33% ^{2,3}	20.34% ^{2,3}	0.31% ^{2,3}	0.32% ^{2,3}	0.30% ^{2,3}
Long-Term Debt	49.87% ¹	49.77% ¹	51.07% ¹	53.75% ¹	57.00% ¹
	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

<u>Capital Components</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>Average</u>
Common Equity	42.95%	43.98%	45.48%	47.41%	47.15%	42.39%
Preferred Stock	0.29% ^{2,3}	0.27% ^{2,3}	0.21% ^{2,3}	0.17% ^{2,3}	0.15% ^{2,3}	4.27%
Long-Term Debt	56.76% ¹	55.75% ¹	54.31% ¹	52.42% ¹	52.70% ¹	53.34%
	<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 Water Company
(in percentages)**

<u>Capital Components</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Common Equity	43.35%	43.50%	48.40%	46.44%	47.74%
Preferred Stock	0.53% ³	0.53% ³	0.42% ³	0.36% ³	0.33% ³
Long-Term Debt	56.12% ¹	55.97% ¹	51.17% ¹	53.20% ¹	51.93% ¹
Total	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

<u>Capital Components</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>Average</u>
Common Equity	43.35%	43.50%	48.40%	46.44%	50.80%	46.19%
Preferred Stock	0.53% ³	0.53% ³	0.42% ³	0.36% ³	0.16% ³	0.42%
Long-Term Debt	56.12% ¹	55.97% ¹	51.17% ¹	53.20% ¹	49.05% ¹	53.39%
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>

Note: 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. 159 and 229, as well as Schedule 6-1 in the Appendices to Staff's Cost of Service Report in Case No. WR-2010-0131.

Missouri-American Water Company
Case No. WR-2015-0301

Capital Structure as of December 31, 2014
for American Water

Capital Component	Amount (in thousands)	Percentage of Capital
Common Stock Equity	\$4,915,591 ¹	46.99%
Preferred Stock	17,176 ²	0.16%
Long-Term Debt	5,379,885 ³	51.43%
Short-Term Debt	147,429 ⁴	1.41%
Total Capitalization	<u>\$10,460,080</u>	<u>100.00%</u>

Notes:

1. Based on common equity shown on American Water's December 31, 2014 balance sheet.
2. Net balance based on MAWC's response to Staff DR No. 187
3. Net balance based on MAWC's response to Staff DR No. 187.
4. Based on short-term debt shown in excess of construction work in progress balance as of December 31, 2014.

Source: MAWC's response to Staff Data Request Nos. 186, 187 and 195.

**Missouri-American Water Company
Case No. WR-2015-0301**

**Rate Making Cost of Long-Term Debt as of December 31, 2014
for American Water**

Total Annual Cost:	\$306,070,789	
Total Carrying Value:	\$5,379,884,578	
Embedded Cost = Total Annual Cost/Total Carrying Value		5.69%

Source: Missouri-American Water Company's response to Staff's Data Request No. 0187.

Missouri-American Water Company
Case No. WR-2015-0301

Rate Making Cost of Preferred Stock as of December 31, 2014
for American Water

Total Annual Cost:	\$1,484,658	
Total Carrying Value:	\$17,175,800	
Embedded Cost = Total Annual Cost/Total Carrying Value		8.64%

Source: Missouri-American Water Company's response to Staff's Data Request No. 0187.

Missouri-American Water Company
Case No. WR-2015-0301

Criteria for Selecting Comparable Water Utility Companies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Water Utility Companies(Ticker)	Stock Publicly Traded	Information Provided by Value Line	5-Years of Data Available	At Least Investment Grade Credit Rating	Projected Growth Rate Available from Value Line or Reuters	At least 80% of Income from Regulated Utility Operations	At least 50% of Regulated Income from Water Utility Operations	No Reduced Dividend Since 2012	Comparable Company Met All Criteria
American States Water Company (AWR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
American Water Works Co. Inc. (AWK)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aqua America Inc. (WTR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Artesian Resources Corporation (ARTNA)	Yes	Yes	Yes	NR					
California Water Service Group (CWT)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connecticut Water Service, Inc. (CTWS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Middlesex Water Company (MSEX)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SJW Corporation (SJW)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
York Water Company (YORW)	Yes	Yes	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 September 30, 2015.
- Columns 3, 4, 6 and 9 = The Value Line Investment Survey: Ratings & Reports, October 16, 2015.
- Column 5 = Standard & Poor's RatingsDirect.
- Column 6 = Reuters and The Value Line Investment Survey: Ratings & Reports, October 16, 2015.
- Column 7 and 8 = SEC Form 10-K Filings.

Missouri-American Water Company
Case No. WR-2015-0301

Comparable Water Utility Companies
for Missouri-American Water Company

Number	Ticker Symbol	Company Name
1	AWR	American States Water Company
2	AWK	American Water Works Company
3	WTR	Aqua America
4	CWT	California Water Service Group
5	CTWS	Connecticut Water Service, Inc.
6	MSEX	Middlesex Water Company
7	SJW	SJW Corporation
8	YORW	York Water Company

**Missouri-American Water Company
Case No. WR-2015-0301**

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

Company Name	----- 10-Year Annual Compound Growth Rates -----			Average of 10 Year Annual Compound Growth Rates
	DPS	EPS	BVPS	
American States Water Company	5.50%	11.00%	6.00%	7.50%
American Water Works Company	NA	NA	NA	NA
Aqua America	7.50%	8.50%	7.50%	7.83%
California Water Service Group	1.50%	5.00%	5.50%	4.00%
Connecticut Water Service, Inc.	2.00%	4.00%	6.50%	4.17%
Middlesex Water Company	1.50%	4.00%	4.50%	3.33%
SJW Corporation	4.00%	6.50%	6.00%	5.50%
York Water Company	4.00%	5.50%	6.50%	5.33%
Average	3.71%	6.36%	6.07%	5.38%
Average of Comps from WR-2011-0337:	4.08%	6.75%	6.33%	5.72%
Average of Comps from WR-2010-0131:	4.63%	7.50%	6.38%	6.17%

Source: The Value Line Investment Survey, October 16, 2015.

NA = Not Available

**Missouri-American Water Company
Case No. WR-2015-0301**

**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	8.50%	14.00%	6.50%	9.67%
American Water Works Company	x	NMF	0.50%	0.50%
Aqua America	7.00%	13.00%	6.50%	8.83%
California Water Service Group	2.00%	4.00%	5.00%	3.67%
Connecticut Water Service, Inc.	2.00%	9.00%	9.50%	6.83%
Middlesex Water Company	1.50%	4.50%	3.00%	3.00%
SJW Corporation	3.00%	10.50%	3.50%	5.67%
York Water Company	2.50%	6.00%	4.50%	4.33%
Average	3.79%	8.71%	4.88%	5.31%
Average of Comps from WR-2011-0337:	4.17%	9.42%	5.92%	6.50%
Average of Comps from WR-2010-0131:	5.00%	9.25%	5.63%	6.63%

Source: The Value Line Investment Survey, October 16, 2015.

NMF - Not Meaningful

Missouri-American Water Company
Case No. WR-2015-0301

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

Company Name	----- 5-Year Projected Compound Growth Rates -----			Average of 5 Year Annual Compound Growth Rates
	DPS	EPS	BVPS	
American States Water Company	7.50%	6.00%	3.00%	5.50%
American Water Works Company	8.50%	7.00%	5.50%	7.00%
Aqua America	9.50%	7.50%	5.50%	7.50%
California Water Service Group	7.00%	6.50%	4.50%	6.00%
Connecticut Water Service, Inc.	5.00%	4.50%	4.00%	4.50%
Middlesex Water Company	2.00%	5.00%	3.00%	3.33%
SJW Corporation	6.00%	1.50%	6.00%	4.50%
York Water Company	6.50%	6.50%	3.00%	5.33%
Average	6.50%	5.56%	4.31%	5.46%
Average of Comps from WR-2011-0337:	6.92%	5.42%	4.33%	5.56%
Average of Comps from WR-2010-0131:	7.63%	6.63%	4.00%	6.08%

Source: The Value Line Investment Survey, October 16, 2015.

**Missouri-American Water Company
Case No. WR-2015-0301**

**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	4.00%	6.00%	5.00%
American Water Works Company	7.34%	7.00%	7.17%
Aqua America	5.55%	7.50%	6.53%
California Water Service Group	5.00%	6.50%	5.75%
Connecticut Water Service, Inc.	5.00%	4.50%	4.75%
Middlesex Water Company	NA	5.00%	5.00%
SJW Corporation	NA	1.50%	1.50%
York Water Company	NA	6.50%	6.50%
Average	5.38%	5.56%	5.27%

Sources:

Column 1 = Analyst Estimates Accessed from Reuters on December 1, 2015.

Column 2 = The Value Line Investment Survey, October 16, 2015.

**Missouri-American Water Company
Case No. WR-2015-0301**

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

Company Name	(1) 10-Year Average DPS, EPS & BVPS	(2) 5-Year Average DPS, EPS & BVPS	(3) Projected Growth Rate (DPS, EPS and BVPS)	(4) Projected 5-Year EPS Growth Consensus Estimates (Mean)	(5) Projected 3-5 Year EPS Growth Value Line	(6) Average Projected EPS Growth
American States Water Company	7.50%	9.67%	5.50%	4.00%	6.00%	5.00%
American Water Works Company	NA	0.50%	7.00%	7.34%	7.00%	7.17%
Aqua America	7.83%	8.83%	7.50%	5.55%	7.50%	6.53%
California Water Service Group	4.00%	3.67%	6.00%	5.00%	6.50%	5.75%
Connecticut Water Service, Inc.	4.17%	6.83%	4.50%	5.00%	4.50%	4.75%
Middlesex Water Company	3.33%	3.00%	3.33%	NA	5.00%	5.00%
SJW Corporation	5.50%	5.67%	4.50%	NA	1.50%	1.50%
York Water Company	5.33%	4.33%	5.33%	NA	6.50%	6.50%
Average	<u>5.38%</u>	<u>5.31%</u>	<u>5.46%</u>	<u>5.38%</u>	<u>5.56%</u>	<u>5.27%</u>
Average of Comps from WR-2011-0337:	5.72%	6.50%	5.56%	4.89%	5.42%	5.00%
Average of Comps from WR-2010-0131:	6.17%	6.63%	6.08%	4.85%	6.63%	5.94%

Proposed Range of Growth for Comparables: 4.00%-5.00%

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

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

Sources: Column 1 = Schedule 11-1.

Column 2 = Schedule 11-2

Column 3 = Schedule 11-3.

Column 4 = Schedule 11-4.

**Missouri-American Water Company
Case No. WR-2015-0301**

**Average High / Low Stock Price for September 2015 through November 2015
for the Comparable Water Utility Companies**

Company Name	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	-- September 2015 --		-- October 2015 --		-- November 2015 --		Average High/Low Stock Price (09/15 - 11/15)
	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	High Stock Price	Low Stock Price	
American States Water Company	41.84	36.73	42.40	40.31	42.40	39.67	40.56
American Water Works Company	55.63	50.74	59.20	54.62	58.40	55.13	55.62
Aqua America	26.65	24.45	28.79	26.20	29.70	28.05	27.31
California Water Service Group	22.31	19.55	24.35	21.64	22.83	21.01	21.95
Connecticut Water Service, Inc.	36.58	34.12	38.49	35.97	37.36	34.15	36.11
Middlesex Water Company	24.98	22.17	26.65	23.40	25.97	24.01	24.53
SJW Corporation	31.20	27.66	33.84	30.46	31.76	28.03	30.49
York Water Company	22.36	20.60	23.86	20.93	24.00	22.18	22.32

Notes:

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

Source: Yahoo Finance

Missouri-American Water Company
Case No. WR-2015-0301

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

	(1)	(2)	(3)
Company Name	Expected Annual Dividend	Average High/Low Stock Price	Projected Dividend Yield
American States Water Company	\$0.92	\$40.558	2.26%
American Water Works Company	\$1.44	\$55.620	2.59%
Aqua America	\$0.75	\$27.307	2.76%
California Water Service Group	\$0.70	\$21.948	3.18%
Connecticut Water Service, Inc.	\$1.09	\$36.112	3.01%
Middlesex Water Company	\$0.78	\$24.530	3.18%
SJW Corporation	\$0.81	\$30.492	2.65%
York Water Company	\$0.63	\$22.322	2.81%
Average			<u><u>2.80%</u></u>
Average of Comps from WR-2011-0337:			2.78%
Average of Comps from WR-2010-0131:			2.75%
		Proposed Dividend Yield:	2.80%
		Proposed Range of Growth:	<u>4.00% - 5.00%</u>
		Indicated Cost of Common Equity:	6.80%-7.80%

Notes: Column 1 = Estimated Dividend Declared per share is weighted by 1/12 for 2015 and 11/12 for 2016

Column 3 = (Column 1 / Column 2).

Column 5 = (Column 3 + Column 4).

Sources: Column 1 = The Value Line Investment Survey: Ratings and Reports, October 16, 2015.

Column 2 = Schedule 12.

**Missouri-American Water Company
Case No. WR-2015-0301**

**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)
			Arithmetic Average Market Risk Premium (1926-2014)	Geometric Average Market Risk Premium (1926-2014)	Arithmetic CAPM Cost of Common Equity (1926-2014)	Geometric CAPM Cost of Common Equity (1926-2014)
Company Name	Risk Free Rate	Company's Value Line Beta				
American States Water Company	2.96%	0.70	6.00%	4.40%	7.16%	6.04%
American Water Works Company	2.96%	0.70	6.00%	4.40%	7.16%	6.04%
Aqua America	2.96%	0.75	6.00%	4.40%	7.46%	6.26%
California Water Service Group	2.96%	0.75	6.00%	4.40%	7.46%	6.26%
Connecticut Water Service, Inc.	2.96%	0.65	6.00%	4.40%	6.86%	5.82%
Middlesex Water Company	2.96%	0.75	6.00%	4.40%	7.46%	6.26%
SJW Corporation	2.96%	0.75	6.00%	4.40%	7.46%	6.26%
York Water Company	2.96%	0.75	6.00%	4.40%	7.46%	6.26%
Average		<u>0.73</u>			<u>7.31%</u>	<u>6.15%</u>
Average of Comps from WR-2011-0337:		0.73			7.31%	6.15%
Average of Comps from WR-2010-0131:		0.74			7.39%	6.21%

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for September, October and November 2015 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, October 16, 2015.

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 - 2014 was determined to be 6.00% based on an arithmetic average as calculated in Duff & Phelps' 2015 Valuation Handbook: Guide to Cost of Capital.

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 - 2014 was determined to be 4.4% based on a geometric average as calculated in Duff & Phelps' 2015 Valuation Handbook: Guide to Cost of Capital.

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

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

Missouri-American Water Company
Case No. WR-2015-0301

Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Water Utility Companies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
American States Water Company	\$0.90	5.00%	4.83%	4.67%	4.50%	4.33%	4.17%	4.00%	6.43%
American Water Works Company	\$1.36	7.17%	6.64%	6.11%	5.59%	5.06%	4.53%	4.00%	7.11%
Aqua America	\$0.71	6.53%	6.10%	5.68%	5.26%	4.84%	4.42%	4.00%	7.19%
California Water Service Group	\$0.67	5.75%	5.46%	5.17%	4.88%	4.58%	4.29%	4.00%	7.55%
Connecticut Water Service, Inc.	\$1.07	4.75%	4.63%	4.50%	4.38%	4.25%	4.13%	4.00%	7.23%
Middlesex Water Company	\$0.77	5.00%	4.83%	4.67%	4.50%	4.33%	4.17%	4.00%	7.48%
SJW Corporation	\$0.78	1.50%	1.92%	2.33%	2.75%	3.17%	3.58%	4.00%	6.21%
York Water Company	\$0.60	6.50%	6.08%	5.67%	5.25%	4.83%	4.42%	4.00%	7.27%
								Average:	7.06%
								Average of Comps from WR-2011-0337:	6.98%
								Average of Comps from WR-2010-0131:	7.11%

Sources: Column 1 = The Value Line Investment Survey: Ratings and Reports, October 16, 2015.
Column 2 = Average Projected Growth from Brokers' Estimates and Value Line Estimates.
Column 8 = Low End of Projected GDP Growth Rates Cited in Staff Cost of Service Report.

**Missouri-American Water Company
Case No. WR-2015-0301**

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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
American States Water Company	\$0.90	5.00%	4.92%	4.83%	4.75%	4.67%	4.58%	4.50%	6.86%
American Water Works Company	\$1.36	7.17%	6.73%	6.28%	5.84%	5.39%	4.95%	4.50%	7.53%
Aqua America	\$0.71	6.53%	6.19%	5.85%	5.51%	5.18%	4.84%	4.50%	7.60%
California Water Service Group	\$0.67	5.75%	5.54%	5.33%	5.13%	4.92%	4.71%	4.50%	7.95%
Connecticut Water Service, Inc.	\$1.07	4.75%	4.71%	4.67%	4.63%	4.58%	4.54%	4.50%	7.64%
Middlesex Water Company	\$0.77	5.00%	4.92%	4.83%	4.75%	4.67%	4.58%	4.50%	7.88%
SJW Corporation	\$0.78	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	6.65%
York Water Company	\$0.60	6.50%	6.17%	5.83%	5.50%	5.17%	4.83%	4.50%	7.68%
								Average:	7.47%
								Average of Comps from WR-2011-0337:	7.39%
								Average of Comps from WR-2010-0131:	7.52%

Sources:

Column 1 = The Value Line Investment Survey: Ratings and Reports, October 16, 2015.
Column 2 = Average Projected Growth from Brokers' Estimates and Value Line Estimates.
Column 8 = High End of Projected GDP Growth Rates Cited in Staff Cost of Service Report.

**Missouri-American Water Company
Case No. WR-2015-0301**

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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
American States Water Company	\$0.90	5.00%	4.90%	4.80%	4.70%	4.60%	4.50%	4.40%	6.77%
American Water Works Company	\$1.36	7.17%	6.71%	6.25%	5.79%	5.32%	4.86%	4.40%	7.44%
Aqua America	\$0.71	6.53%	6.17%	5.82%	5.46%	5.11%	4.75%	4.40%	7.51%
California Water Service Group	\$0.67	5.75%	5.53%	5.30%	5.08%	4.85%	4.63%	4.40%	7.87%
Connecticut Water Service, Inc.	\$1.07	4.75%	4.69%	4.63%	4.58%	4.52%	4.46%	4.40%	7.56%
Middlesex Water Company	\$0.77	5.00%	4.90%	4.80%	4.70%	4.60%	4.50%	4.40%	7.80%
SJW Corporation	\$0.78	1.50%	1.98%	2.47%	2.95%	3.43%	3.92%	4.40%	6.56%
York Water Company	\$0.60	6.50%	6.15%	5.80%	5.45%	5.10%	4.75%	4.40%	7.60%
								Average:	7.39%
								Average of Comps from WR-2011-0337:	7.31%
								Average of Comps from WR-2010-0131:	7.44%

Sources:

Column 1 = The Value Line Investment Survey: Ratings and Reports, October 16, 2015.
Column 2 = Average Projected Growth from Brokers' Estimates and Value Line Estimates.
Column 8 = Projected GDP growth rate used in 2014 electric utility rate cases.

**Missouri-American Water Company
Case No. WR-2015-0301**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
Alliant Energy	\$2.20	6.05%	5.54%	5.03%	4.53%	4.02%	3.51%	3.00%	7.71%
Ameren Corp.	\$1.70	6.15%	5.63%	5.10%	4.58%	4.05%	3.53%	3.00%	8.05%
American Electric Power	\$2.24	5.49%	5.08%	4.66%	4.25%	3.83%	3.42%	3.00%	7.83%
CMS Energy Corp.	\$1.16	6.20%	5.67%	5.13%	4.60%	4.07%	3.53%	3.00%	7.20%
DTE Energy Company	\$2.92	5.08%	4.73%	4.39%	4.04%	3.69%	3.35%	3.00%	7.28%
Great Plains Energy	\$1.05	6.33%	5.78%	5.22%	4.67%	4.11%	3.56%	3.00%	8.02%
Pinnacle West Capital	\$2.50	5.23%	4.86%	4.49%	4.12%	3.74%	3.37%	3.00%	7.71%
PNM Resources, Inc.	\$0.80	5.00%	4.67%	4.33%	4.00%	3.67%	3.33%	3.00%	6.41%
Portland General Electric Compar	\$1.20	3.99%	3.83%	3.66%	3.50%	3.33%	3.17%	3.00%	6.62%
Westar Energy, Inc.	\$1.44	3.43%	3.36%	3.29%	3.22%	3.14%	3.07%	3.00%	6.91%
Xcel Energy	\$1.28	4.75%	4.46%	4.17%	3.88%	3.58%	3.29%	3.00%	7.20%
								Average	7.36%

Sources:

Column 1 and 2 = SNL Financial

Column 8 = Appendix 2, Schedules 12-1 to Staff Revenue Requirement Report in Case No. ER-2014-0258

Missouri-America Water Company
Case No. WR-2015-0301

Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
Alliant Energy	\$2.20	6.05%	5.63%	5.20%	4.78%	4.35%	3.93%	3.50%	8.09%
Ameren Corp.	\$1.70	6.15%	5.71%	5.27%	4.83%	4.38%	3.94%	3.50%	8.42%
American Electric Power	\$2.24	5.49%	5.16%	4.83%	4.50%	4.16%	3.83%	3.50%	8.20%
CMS Energy Corp.	\$1.16	6.20%	5.75%	5.30%	4.85%	4.40%	3.95%	3.50%	7.59%
DTE Energy Company	\$2.92	5.08%	4.82%	4.55%	4.29%	4.03%	3.76%	3.50%	7.67%
Great Plains Energy	\$1.05	6.33%	5.86%	5.39%	4.92%	4.44%	3.97%	3.50%	8.39%
Pinnacle West Capital	\$2.50	5.23%	4.94%	4.65%	4.37%	4.08%	3.79%	3.50%	8.08%
PNM Resources, Inc.	\$0.80	5.00%	4.75%	4.50%	4.25%	4.00%	3.75%	3.50%	6.81%
Portland General Electric Compar	\$1.20	3.99%	3.91%	3.83%	3.75%	3.66%	3.58%	3.50%	7.02%
Westar Energy, Inc.	\$1.44	3.43%	3.44%	3.45%	3.47%	3.48%	3.49%	3.50%	7.31%
Xcel Energy	\$1.28	4.75%	4.54%	4.33%	4.13%	3.92%	3.71%	3.50%	7.59%
								Average	7.74%

Sources:

Column 1 and 2 = SNL Financial

Column 8 = Appendix 2, Schedules 12-2 to Staff Revenue Requirement Report in Case No. ER-2014-0258

**MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2015-0301**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
Alliant Energy	\$2.20	6.05%	5.71%	5.37%	5.03%	4.68%	4.34%	4.00%	8.47%
Ameren Corp.	\$1.70	6.15%	5.79%	5.43%	5.08%	4.72%	4.36%	4.00%	8.79%
American Electric Power	\$2.24	5.49%	5.24%	4.99%	4.75%	4.50%	4.25%	4.00%	8.58%
CMS Energy Corp.	\$1.16	6.20%	5.83%	5.47%	5.10%	4.73%	4.37%	4.00%	7.98%
DTE Energy Company	\$2.92	5.08%	4.90%	4.72%	4.54%	4.36%	4.18%	4.00%	8.06%
Great Plains Energy	\$1.05	6.33%	5.94%	5.55%	5.17%	4.78%	4.39%	4.00%	8.76%
Pinnacle West Capital	\$2.50	5.23%	5.03%	4.82%	4.62%	4.41%	4.21%	4.00%	8.46%
PNM Resources, Inc.	\$0.80	5.00%	4.83%	4.67%	4.50%	4.33%	4.17%	4.00%	7.22%
Portland General Electric Compar	\$1.20	3.99%	3.99%	3.99%	4.00%	4.00%	4.00%	4.00%	7.43%
Westar Energy, Inc.	\$1.44	3.43%	3.53%	3.62%	3.72%	3.81%	3.91%	4.00%	7.70%
Xcel Energy	\$1.28	4.75%	4.63%	4.50%	4.38%	4.25%	4.13%	4.00%	7.98%
								Average	8.13%

Sources:

Column 1 and 2 = SNL Financial

Column 8 = Appendix 2, Schedule 12-3 to Staff Revenue Requirement Report in Case No. ER-2014-0258.

**Missouri-American Water Company
Case No. WR-2015-0301**

**Multiple-Stage Discounted Cash Flow (DCF) Estimated Costs of Common Equity
for the Comparable Electric Utility Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Company Name	Annualized Quarterly Dividend	Growth Years 1-5	6	7	Growth Years 8	9	10	Growth in Perpetuity	Cost of Equity
Alliant Energy	\$2.20	6.05%	5.78%	5.50%	5.23%	4.95%	4.68%	4.40%	8.78%
Ameren Corp.	\$1.70	6.15%	5.86%	5.57%	5.28%	4.98%	4.69%	4.40%	9.09%
American Electric Power	\$2.24	5.49%	5.31%	5.13%	4.95%	4.76%	4.58%	4.40%	8.89%
CMS Energy Corp.	\$1.16	6.20%	5.90%	5.60%	5.30%	5.00%	4.70%	4.40%	8.29%
DTE Energy Company	\$2.92	5.08%	4.97%	4.85%	4.74%	4.63%	4.51%	4.40%	8.37%
Great Plains Energy	\$1.05	6.33%	6.01%	5.69%	5.37%	5.04%	4.72%	4.40%	9.06%
Pinnacle West Capital	\$2.50	5.23%	5.09%	4.95%	4.82%	4.68%	4.54%	4.40%	8.77%
PNM Resources, Inc.	\$0.80	5.00%	4.90%	4.80%	4.70%	4.60%	4.50%	4.40%	7.55%
Portland General Electric Compar	\$1.20	3.99%	4.06%	4.13%	4.20%	4.26%	4.33%	4.40%	7.75%
Westar Energy, Inc.	\$1.44	3.43%	3.59%	3.75%	3.92%	4.08%	4.24%	4.40%	8.02%
Xcel Energy	\$1.28	4.75%	4.69%	4.63%	4.58%	4.52%	4.46%	4.40%	8.29%
								Average	8.44%

Sources:

Column 1 = SNL Financial

Column 8 = Compounding the expected GDP price deflator of 2% with the long term real GDP growth of 2.35%.

Missouri-American Water Company
Case No. WR-2015-0301

Recommended Allowed Rate of Return as of December 31, 2014
for Missouri-American Water Company

Capital Component	Percentage of Capital	Embedded Cost	Allowed Rate of Return Common Equity Return of:		
			8.50%	9.25%	9.50%
Common Stock Equity	46.99%	---	3.99%	4.35%	4.46%
Preferred Stock	0.16%	8.64%	0.01%	0.01%	0.01%
Long-Term Debt	51.43%	5.69%	2.93%	2.93%	2.93%
Short-Term Debt	1.41%	0.31%	0.00%	0.00%	0.00%
Total	100.00%		6.94%	7.29%	7.41%

Sources:

See Schedule 6 for the Capital Structure Ratios.