

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren**

1. CC – Reference: Rungren Testimony (page 10; beginning at line 14). With respect to Exhibit SWR-1 and Schedules J-1 – J-4, please provide:
 - a. All data, work papers, and copies of source documents used in the development of the capitalization amounts (13 Month Average Amounts, and adjustments as reflected in the Add (1) column), and
 - b. An electronic version (Microsoft Excel) of Exhibit SWRMAM-3, and Schedules J-1 – J-4 to Exhibit 37 and work papers used to determine the 13-month capitalization amounts, with all data and equations left intact.

Response:

- a. Please see the Company's response to Item 3 of the Commission Staff's First Request for Information to Kentucky American Water Company. The requested file can be found on the CD referenced in that response. Specifically, please see the folder entitled "Capital Structure," which contains the file named "Capital Structure 2012.xls." The file structure is as follows:

2012 Excel:

Exhibits\Capital Structure\[Capital Structure 2012.xls]

The tab named "Sch J" contains the Schedules J-1 to J-4 of Exhibit 37. The other tabs in that spreadsheet contain the data that support Schedules J-1 to J-4.

- b. Please see the attached for the electronic version of Exhibit SWR-3. Please see the response to (a) above for the electronic version of Schedules J-1 to J-4 and the supporting workpapers. In addition, the "Capital Structure" folder referenced in (a) above contains other versions of "Capital Structure 2012.xls" that were print-formatted solely to produce the required workpapers.

Kentucky - American Water Company
Case No. 2012-00520
Short-Term Interest Rate Projection

Exhibit SWR-3

<u>Projected Date</u>	<u>1 Month LIBOR</u>	<u>Spread To LIBOR</u>	<u>Estimated AWCC Short-Term Interest Rate</u>
12/31/2012	0.5380%	0.2500%	0.7880%
3/31/2013	0.5280%	0.2500%	0.7780%
6/30/2013	0.5390%	0.2500%	0.7890%
9/30/2013	0.5760%	0.2500%	0.8260%
<u>12/31/2013</u>	0.6230%	0.2500%	<u>0.8730%</u>
Average			0.8108%

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Witness: **Scott W. Rungren**

2. CC – Reference: Rungren Testimony. With respect to Exhibits SWR-2 and 3, please provide:
- a. All data, work papers, assumptions, and calculations used to determine the costs and interest rates for pro forma financings, and other data used to determine the cost rates for short-term debt, long-term debt, and preferred stock, and
 - b. An electronic version (Microsoft Excel) of Exhibits SWR 2 and 3 and work papers used to determine the senior capital costs, with all data and equations left intact.

Response:

- a. Please see the attachment for the data used to calculate the projected costs of short-term and long-term debt. Long-term debt interest rate projections were based on the forward yield curve for 30-year Treasuries, to which a 2.00% credit spread was added. The 2.00% credit spread is an estimate, based on the rate at which AWCC issues debt in the market relative to the rate on 30-year Treasuries at the time of issuance. Short-term debt interest rate projections were tied to the 1-month LIBOR rate, to which a 25 basis point spread was added. The 25 basis point spread is based on the actual spread between the Company's short-term debt rate and the 1-month LIBOR rate at the time the projection was made. The Company is not planning to issue preferred stock and, thus, has no projected cost for that capital component. The Company has one existing issuance of preferred stock, which has a fixed interest rate.
- b. The Excel version of the workpapers for Exhibits SWR-2 is included in the response to part (a) above. The Excel version of Exhibit SWR-3 was provided in response to Item 1 of this same data request.

The interest rates for the 30-year Treasuries are taken from Bloomberg's forward curve (see screen shot of Bloomberg online page below)

	11/1/2012	3/31/2013	6/30/2013	9/30/2013	12/31/2013	Year 2013	3/31/2014	6/30/2014	9/30/2014	12/31/2014	Year 2014
30-year Treasuries	3.1	3.1	3.1	3.2	3.2		3.2	3.3	3.3	3.3	
Estimated Spread to Treasury	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Estimated AWCC 30-year Interest Rate	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.3	5.3	5.3	5.3

Assumptions:

- (1) AWCC credit spread remains constant at 2.00%
- (2) US Treasury forward curve is a good predictor of future spot rates



	Actual rates as of today		Forward Rates					2013 Average
		5/2/2012	12/31/2012	3/31/2013	6/30/2013	9/30/2013	12/31/2013	
LIB								
30 year Treasuries		3.15%	3.221%	3.262%	3.302%	3.344%	3.382%	
Spread to Treasury		1.90%						
AWCC 30 Year Debt Estimate		5.05%	5.121%	5.162%	5.202%	5.244%	5.282%	5.20%
STD								
1 Month LIBOR	0.24%		0.538%	0.528%	0.539%	0.576%	0.623%	
Spread to LIBOR	0.25%							
AWCC STD Estimate	0.49%		0.788%	0.778%	0.789%	0.826%	0.873%	0.81%

Kentucky-American Water Company
Case No. 2012-00520
Long-Term Interest Rate Projection

Exhibit SWR-2

Projected Date	30-Year U.S. Treasury	Estimated Spread to Treasury	Estimated AWCC 30-Year Interest Rate
3/31/2013	3.106%	2.00%	5.106%
6/30/2013	3.136%	2.00%	5.136%
9/30/2013	3.166%	2.00%	5.166%
12/31/2013	3.195%	2.00%	5.195%
<u>2013 Average</u>			<u>5.151%</u>
3/31/2014	3.224%	2.00%	5.224%
6/30/2014	3.252%	2.00%	5.252%
<u>2014 Average</u>			<u>5.238%</u>
Six-Quarter Average			<u><u>5.18%</u></u>

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: **James H. Vander Weide**

3. CC – Reference: Vander Weide Testimony. Please provide a copy of Dr. James H. Vander Weide's pre-filed direct testimony and Appendices in Microsoft Word.

Response:

This will be provided under separate cover to the parties.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: James H. Vander Weide

4. CC – Reference: Vander Weide Testimony. Please provide:
- a. Copies of all source documents, articles, cited documents listed in footnotes, regulatory decisions, work papers, and other sources used in the development and preparation of the testimony and appendices of Dr. James H. Vander Weide; and
 - b. An index with files names and/or page or tab numbers associated with the materials provided in response to part (a), above.

Response:

- a. Please see attached.
- b.

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ARTESIAN RES. CORP. NDQ-ARTNA		RECENT PRICE	23.28	TRADING P/E RATIO	21.8	RELATIVE P/E RATIO	1.33	DIVID YLD	3.4%	VALUE LINE
RANKS		20.04 15.18	22.62 17.20	22.33 17.30	20.67 18.26	19.31 13.00	18.73 12.81	19.88 16.43	19.99 15.16	24.43 18.20
PERFORMANCE	3 Average	LEGENDS: 12-Mon Mov Avg, Real Price Strength, 3-Mo-2 wtd 7:05, 3-Mo-2 wtd 7:06, Shaded area indicates volatility								
Technical	3 Average									
SAFETY	2 Above Average									
BETA	.55 (1.00 = Market)									
Financial Strength	B+									
Price Stability	100									
Price Growth Persistence	60									
Earnings Predictability	90									
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SALES PER SH	6.67	7.52	7.77	7.20	7.59	8.11	8.48	7.56	-	-
CASH FLOW PER SH	1.42	1.56	1.75	1.57	1.65	1.84	1.92	1.64	-	-
EARNINGS PER SH	.72	.81	.97	.90	.86	.97	1.00	.83	1.10 A	1.10 C/WA
DIVDS DECL'D PER SH	.55	.58	.61	.66	.71	.72	.75	.76	-	-
CAPL SPENDING PER SH	4.82	3.35	5.08	3.66	6.09	2.32	2.57	1.83	-	-
BOOK VALUE PER SH	9.26	9.60	10.15	11.66	11.86	12.15	12.44	13.12	-	-
COMMON SHS OUTST'G (MILL)	5.93	6.02	6.09	7.30	7.40	7.51	7.65	8.61	-	-
AVG ANNUAL P/E RATIO	25.4	24.2	20.3	21.5	20.1	16.4	18.2	22.5	20.1	19.6 WA
RELATIVE P/E RATIO	1.34	1.28	1.10	1.14	1.21	1.09	1.16	1.41	-	-
AVG ANNUAL DIVD YIELD	3.0%	2.9%	3.1%	3.4%	4.1%	4.5%	4.1%	4.1%	-	-
SALES (\$MILL)	39.6	45.3	47.3	52.5	56.2	60.9	64.9	65.1	-	Bold figures are continuous earnings estimates and, using the reverse price, P/E ratios.
OPERATING MARGIN	-	100.0%	45.6%	45.6%	45.1%	46.9%	46.5%	45.9%	-	-
DEPRECIATION (\$MILL)	4.0	4.4	4.6	5.2	5.8	6.6	7.0	7.4	-	-
NET PROFIT (\$MILL)	4.4	5.0	6.1	6.3	6.4	7.3	7.6	6.7	-	-
INCOME TAX RATE	39.6%	39.9%	39.0%	39.6%	40.8%	40.1%	40.0%	40.8%	-	-
NET PROFIT MARGIN	11.1%	11.1%	12.8%	11.9%	11.4%	11.9%	11.7%	10.4%	-	-
WORKING CAPL (\$MILL)	98.7	91.8	98.8	2.5	200.9	223.3	227.9	211.4	-	-
LONG-TERM DEBT (\$MILL)	82.4	92.4	92.1	91.8	107.6	106.0	105.1	106.5	-	-
SHR. EQUITY (\$MILL)	54.9	57.8	61.8	85.1	87.8	91.2	95.1	113.0	-	-
RETURN ON TOTAL CAPL	5.1%	5.3%	5.8%	5.3%	4.7%	5.2%	5.6%	4.6%	-	-
RETURN ON SHR. EQUITY	8.0%	8.7%	9.8%	7.4%	7.3%	8.0%	8.0%	6.0%	-	-
RETAINED TO COM EQ	2.1%	2.7%	3.8%	2.1%	1.4%	2.1%	2.0%	.5%	-	-
ALL DIVD'S TO NET PROF	74%	69%	61%	71%	81%	74%	75%	92%	-	-
*All of analysts changing price and in last 5 days; 0 sig. 0 down, continuous 5-year earnings growth not available. **Based upon 4 analysts' estimates. ***Based upon 4 analysts' estimates.										
ANNUAL RATES		of change (per share)		5 Yr.	1 Yr.	INDUSTRY: Water Utility				
Sales	2.0%	-11.0%	Assets (\$mill)		2010	2011	6/30/12	BUSINESS: Artesian Resources Corporation, through its subsidiaries, provides water, wastewater, and engineering services on the Delmarva Peninsula. It distributes and sells water to residential, commercial, industrial, municipal, and utility customers in Delaware, Maryland, and Pennsylvania. The company also offers water for public and private fire protection to customers in its service territories. In addition, it provides contract water and wastewater services, water and sewer service line protection plans, and wastewater management services, as well as design, construction, and engineering services. As of December 31, 2011, the company served approximately 78,600 metered water customers through 1,148 miles of transmission and distribution mains. Artesian Water Company, the principal subsidiary, is the oldest and largest investor-owned public water utility on the Delmarva Peninsula, and has been providing water service since 1905. Has 226 employees. Chairman, C.E.O. & President: Dian C. Taylor Address: 664 Churchmans Rd., Newark, DE 19702. Tel: (302) 453-6900. Internet: http://www.artesianwater.com .		
"Cash Flow"	2.5%	-10.0%	Cash Assets	2	3	4				
Earnings	2.5%	-17.0%	Receivables	5.1	8.6	7.6				
Dividends	5.0%	1.5%	Inventory	1.2	1.5	1.4				
Book Value	5.5%	5.5%	Other	7.5	2.9	1.5				
			Current Assets	14.0	13.3	10.9				
Fiscal Year	QUARTERLY SALES (\$mill)	Full Year	Property, Plant & Equip. at cost				414.6	435.0	--	
	1Q	2Q	3Q	4Q		Accum Depreciation	69.2	77.4	--	
12/31/10	15.0	16.0	18.0	15.9	64.9	Net Property	345.4	357.6	363.2	
12/31/11	14.8	16.5	17.7	16.1	65.1	Other	12.1	7.8	8.0	
12/31/12	16.7	17.9				Total Assets	371.5	378.7	382.1	
12/31/13						LIABILITIES (\$mill)				
Fiscal Year	EARNINGS PER SHARE	Full Year	Accs Payable				3.4	2.8	2.9	
	1Q	2Q	3Q	4Q		Debt Due	30.6	13.8	11.8	
12/31/09	.22	.27	.28	.20	.97	Other	7.9	8.1	8.3	
12/31/10	.22	.24	.38	.16	1.00	Current Liab	41.9	24.7	23.0	
12/31/11	.14	.23	.26	.20	.83	LONG-TERM DEBT AND EQUITY				
12/31/12	.29	.32	.38	.21		as of 6/30/12				
12/31/13	.28					Total Debt \$117.9 mill. Due in 5 Yrs. NA				
Calendar	QUARTERLY DIVIDENDS PAID	Full Year	LT Debt \$106.0 mill. Including Cap. Leases NA				(48% of Capl)			
	1Q	2Q	3Q	4Q		Leases, Unamortized Annual rentals NA				
2009	.178	.178	.178	.187	.72	Pension Liability \$5 mill. in '11 vs. \$5 mill. in '10				
2010	.167	.188	.188	.189	.75	P/E Book None P/E Div's Paid None				
2011	.19	.19	.19	.193	.76	Common Stock 8,559,593 shares (52% of Capl)				
2012	.193	.198	.198	.203						
INSTITUTIONAL DECISIONS		4Q'11		1Q'12		2Q'12				
to Buy	38	24	38							
to Sell	16	20	21							
Hold(00)	2691	2733	2843							
TOTAL SHAREHOLDER RETURN Dividends plus appreciation as of 6/30/2012										
3 Mos.		6 Mos.		1 Yr.		3 Yrs.		5 Yrs.		
8.81%		26.05%		38.08%		55.14%		50.41%		
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AMERICAN WATER NYSE:AMW				RECENT PRICE	36.75	PE RATIO	16.7 (Trailing 12M)	RELATIVE PE RATIO	1.10	DIVID YLD	2.7%	VALUE LINE
TIMELINESS 2 (Lowest 10/5/07)	SAFETY 3 (Low 10/5/08)	TECHNICAL 3 (Low 10/10/10)	BETA 0.7 (Low - Market)	High: 39.7	Low: 28.5	29.0	28.2	28.4	28.1	28.4	28.1	Target Price Range 2016: 2017
2015-17 PROJECTIONS Price Gain Return High 55 (+50%) 7.7% Low 38 (-23%) -1%												
INCIDENTAL DECISIONS Buy 0 Sell 0 Hold 0 Buy 0 Sell 0 Hold 0 Buy 0 Sell 0 Hold 0												
INSTITUTIONAL DECISIONS Buy 181 Sell 194 Hold 179 Buy 138 Sell 163 Hold 162 Buy 138/163 Sell 141/160 Hold 142/162				Percent of shares traded: 21, 14, 7								
				1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013								
				REVENUES PER SH 18.10 "CASH FLOW" PER SH 4.70 EARNINGS PER SH 2.80 DIVID PER SH 1.25 Cap'l Spending per sh 3.00 Book Value per sh 28.70 Common Stk Oublg 100.00 Avn'g Asset P/E Ratio 18.0 Relative P/E Ratio 1.20 Avn'g Ann'd Div'd Yld 2.8% Revenue (\$mil) 3400 Net Profit (\$mil) 480 Income Tax Rate 38.0% AFUDC % to Net Profit 16.0% Long-Term Debt Ratio 64.0% Common Equity Ratio 40.0% Total Capital (\$mil) 11100 Net Plant (\$mil) 13700 Return on Total Cap'l 8.0% Return on Str. Equity 8.0% Return on Com Equity 8.0% Return to Com Eq 4.0% All Div's to Net Prof 80%								
CAPITAL STRUCTURE as of 03/31/12 Total Debt \$5625.4 mil. Due In 6 Yrs \$407.6 mil. LT Debt \$5203.1 mil. LT Interest \$292.0 mil. (Total Interest coverage: 3.5x) (54% of Cap'l)				Leases, Unamortized: Annual rentals \$21.5 mil. Pension Assets-12/31/11 \$381.1 mil. Olig. \$1402.0 mil. Pfd Stock \$19.3 mil. Pfd Div's \$7 mil. Common Stock 176,430,023 shd. as of 7/26/12								
MARKET CAP: \$8.6 billion (Large Cap) CURRENT POSITION 2010 2011 03/31/12 Cash Assets 13.1 14.2 12.9 Other 521.2 1383.5 593.5 Current Assets 534.3 1397.7 606.4 Acc'ts Payable 199.2 243.7 183.9 Debt Due 44.2 643.9 482.3 Other 530.5 701.5 357.8 Current Liab. 774.5 1489.1 1018.0 Fin. Chg. Cov. 237% 256% 300%				BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in over 30 states and Canada. Its nonregulated business assets municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 88.8% of 2011 revenues. New Jersey is its biggest market accounting for 20.3% of revenues. Has roughly 7,000 employees. Depreciation rate, 2.5% in '11. StockRock, Inc. owns 7.4% of the common stock outstanding. Off. & div. own less than 1% (3/12 Proxy). President & CEO: Jeffrey Sterba, Chairman, George Macdonald. Address: 1025 Laurel Oak Road, Voorhees, NJ 08043. Telephone: 856-346-6200. Internet: www.amwater.com.								
ANNUAL RATES of change (per cent) Revenue 3.6% "Cash Flow" 6.6% Earnings 8.0% Dividends 6.6% Book Value 2.6%				AMERICAN WATER WORKS posted record earnings in the second quarter. The nation's largest publicly traded water utility recorded profits of \$0.66 a share, 57% better than the year before. Revenue growth of 12% trounced expectations, thanks to favorable weather and strong pumpage, while costs remained relatively steady. The earlier portfolio optimization helped, removing less profitable businesses from the mix, but maybe more impressive was that management was able to keep maintenance costs under control. We have raised our full-year share-net estimate by \$0.20, but only tweaked our second-half call slightly upward. Our overall decision was largely a result of the aforementioned success. Although we believe that the top line will continue to benefit from favorable regulatory rulings, it is hard to imagine the cost base not rising going forward. Indeed, the company is slated to make a number of infrastructure upgrades as a result of aging systems. Thus, we look for costs to begin to mount, thereby cutting into margins, despite efforts to keep expenses in check. This stock ought to interest momentum accounts. AWK is ranked 2 (Above Average) for Timeliness based on the recent earnings strength. Growth is likely to remain solid over the next six to 12 months, too, benefiting from a supportive regulatory body and more-streamlined operations. The company will probably not have to seek much outside financing in the near term, either, as the proceeds from divestitures ease capital burdens a bit. That said, we are a bit more skeptical about growth prospects further out. Specifically, we worry about the American's financial situation and the capital-intensive nature of this business. The company is slated to spend over \$900 million on its infrastructure this year, and we do not envision that figure trending much lower in the years ahead. This endeavor will easily eat up any cash reserves and cash flow being generated by operations. Management will have to float more debt and stock in order to meet these obligations, but such actions will temper investor gains. The dividend is better than that of the average issue covered in our Survey, but not of the average utility provider. Andre J. Costanza October 19, 2012								
QUARTERLY REVENUE (\$ mil.) Cap. ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2009 550.2 612.7 680.0 697.8 2440.7 2010 588.1 671.2 796.9 864.5 2710.7 2011 596.7 668.8 760.9 839.8 2666.2 2012 618.6 745.6 825.8 715 2905 2013 640 740 800 725 2805				QUARTERLY EARNINGS PER SHARE Cap. ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2009 .19 .32 .52 .21 1.25 2010 .16 .42 .71 .23 1.53 2011 .23 .42 .75 .34 1.72 2012 .28 .56 .81 .40 2.15 2013 .30 .65 .80 .42 2.20								
QUARTERLY DIVIDENDS PND % Cap. ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2009 -- -- .20 .20 .40 2010 .20 .20 .21 .21 .82 2011 .21 .21 .22 .22 .86 2012 .22 .23 .23 .23 .91 2013 .23 .23 .25				Next earnings report due early Nov. Quarterly earnings may not sum due to rounding. (A) In millions. (B) Includes Intangibles. In 2011: \$1.135 billion, \$9.80/share. (C) Dividends paid in March, June, September, and December. * Div. reinvestment available.								
(A) Diluted earnings. Excludes nonrecurring losses: '09, \$4.52; '09, \$2.63; '11, \$0.07. Discontinued operations: '08, 14¢; '11, 3¢; '12, 16¢. * 2012 Value Line Publishing LLC. All rights reserved. Factual material is obtained from sources believed to be reliable, and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is solely for subscriber's use, non-commercial, internal use. No part of it may be reproduced, stored, saved or transmitted in any format, electronic or other form, or used for spreading or disseminating any printed or electronic publication, service or product.				Company's Financial Strength B Stock's Risk Stability 35 Price Growth Persistence 95 Earnings Profitability 15 To subscribe call 1-800-833-0046								

AMER. STATES WATER NYSE:AWR			RECENT PRICE	PE RATIO	Trailing 12 Months	RELATIVE PE RATIO	DIVID YLD	VALUE LINE														
			44.03	18.2	(17.5)	1.20	3.2%															
TIMELINESS 3	Lowest 10/10	High Low	38.4	39.0	39.0	38.8	34.6	43.8	46.1	42.0	38.8	38.9	36.4	45.4			Target Price Range					
SAFETY 2	Lowest 10/10	LEADERS	19.0	20.3	21.8	22.8	24.3	30.3	33.8	27.0	29.8	31.2	30.5	34.1			2016 2018 2017					
TECHNICAL 3	Lowest 10/10	U.S. & Dividends % of																				
BEAT 70	(Low) - (Market)	U.S. & Dividends % of																				
			2015-17 PROJECTIONS Ann'l Total Price Gain Return High 99 (+35%) 177% Low 45 (N/A) 4% Dividend Decisions M D J F M A M J J A S O N D to pay 0 0 0 0 0 0 0 0 0 0 0 0 to bid 0 0 0 0 0 0 0 0 0 0 0 0 to bid 0 0 0 0 0 0 0 0 0 0 0 0 Institutional Decisions to bid 0 0 0 0 0 0 0 0 0 0 0 0 to bid 0 0 0 0 0 0 0 0 0 0 0 0 to bid 0 0 0 0 0 0 0 0 0 0 0 0 Percent always tracked 12 4 4																			
			1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	VALUE LINE PUB. LLC	15-17
			11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.51	14.06	15.76	17.49	18.42	19.43	21.41	22.34	32.40	32.48	Revenue per sh	27.80
			1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.08	2.23	2.64	2.89	3.31	3.37	3.40	4.23	4.26	4.80	5.89	"Cash Flow" per sh	6.50
			1.13	1.04	1.08	1.19	1.28	1.35	1.34	1.76	1.85	1.32	1.33	1.62	1.55	1.52	2.22	2.23	2.48	3.00	Earnings per sh A	3.80
			2.48	2.58	3.11	3.36	3.03	3.18	2.66	3.76	5.03	4.34	3.91	2.89	4.45	4.15	4.34	4.26	4.30	4.40	Divid Dec'n per sh	1.60
			11.51	11.24	11.80	11.52	12.74	13.22	14.05	13.97	15.01	15.72	16.64	17.53	17.95	19.39	20.26	21.68	22.80	23.16	Cap'l Spending per sh	3.10
			13.33	13.44	13.44	13.44	15.12	15.18	15.21	16.75	16.80	17.95	17.23	17.30	18.53	18.85	19.00	19.20	19.20	19.20	Book Value per sh	23.60
			12.5	14.5	15.5	17.1	15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.5	21.2	15.7	15.7	16.8	16.8	Cap'l Expend' P/E Ratio	18.0
			7.9	8.4	8.1	8.7	1.83	8.5	1.80	1.82	1.23	1.17	1.50	1.27	1.35	1.41	1.00	1.01	1.00	1.01	Relative P/E Ratio	1.28
			5.0%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.9%	2.9%	3.0%	3.0%	3.0%	3.0%	3.0%	Avg Ann'l Divd Yld	2.8%
			CAPITAL STRUCTURE as of 8/30/12 Total Debt \$241.7 mil. Due in 6 Yrs \$280.0 mil. LT Debt \$241.5 mil. LT Interest \$24.0 mil. (LT Interest earned: 5.3% total interest coverage: 3.2x) (44% of Cap'l) Leases, Unamortized: Annual rental \$3.3 mil. Pension Assets-10/11 \$92.9 mil. Pfd Stock None. Common Stock 18,533,668 shs. as of 8/3/12 MARKET CAP: \$625 million (Small Cap)																			
			209.2	212.7	208.0	236.2	265.5	301.4	318.7	361.0	399.9	419.3	448	480	448	480	448	480	448	480	Revenue (mil)	540
			20.3	11.9	16.5	22.5	23.1	28.0	28.8	28.8	28.5	41.4	42.1	45.8	46.8	46.8	46.8	46.8	46.8	46.8	Net Profit (mil)	60.0
			38.9%	43.5%	37.4%	47.0%	48.5%	42.6%	37.6%	38.9%	43.2%	41.7%	42.3%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	Income Tax Rate	48.0%
			52.0%	52.0%	47.7%	50.4%	43.6%	46.9%	46.2%	45.9%	44.3%	45.4%	43.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	WFCG % to Net Profit	6.0%
			48.0%	48.0%	52.3%	49.6%	51.4%	53.1%	53.9%	54.1%	55.7%	54.6%	57.0%	57.0%	57.0%	57.0%	57.0%	57.0%	57.0%	57.0%	Long-Term Debt Ratio	42.0%
			444.4	442.3	480.4	530.5	551.6	589.4	577.0	665.0	677.4	749.1	790	790	790	790	790	790	790	790	Total Capital (mil)	800
			563.3	602.3	664.2	713.2	750.5	776.4	825.3	866.4	893.0	995.5	836	888	888	888	888	888	888	888	Ret of Total Cap'l	7.0%
			6.5%	4.8%	5.2%	5.4%	6.0%	5.7%	5.4%	5.9%	7.6%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	Return on Str. Equity	12.0%
			9.5%	5.6%	6.6%	6.5%	6.1%	6.1%	6.2%	6.2%	11.0%	10.3%	10.3%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	Return on Com Equity	12.0%
			3.3%	N/A	1.0%	2.0%	2.7%	3.9%	3.1%	3.2%	5.8%	5.2%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	Related to Com Eq	0.0%
			55%	113%	94%	67%	67%	56%	54%	61%	47%	49%	80%	88%	88%	88%	88%	88%	88%	88%	All Div's to Net Profit	87%
			BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to more than 280,000 customers in 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to nearly 23,280 customers in the city of Big Bear Lake and in areas of San Bernardino County, San Diego and San Diego County. The company has 703 employees. Officers & directors own 2.9% of common stock (4/12 Proxy). Chairman: Lloyd Ross, President & CEO: Robert J. Sprules, Inc. CA. Addr: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.																			
			American States Water's bottom-line momentum will likely carry into the back half of the year. Indeed, share earnings in the first half of 2012 increased 17%, driven by the Golden State Water unit and an increase in Contracted Services activity. Construction activity and favorable changes in cost estimates at the Fort Bragg military base also contributed to the improved results. Going forward, we expect the company to remain focused on expanding the Contracted Services business, as it provides more favorable growth prospects compared to its Water and Electric businesses. In fact, we believe AWR's 50-year contract with Fort Bragg through its American States Utility Services subsidiary could provide a nice opportunity. We expect this longer-term relationship with the U.S. government to bolster the company's chances in booking more water and electric projects on other military bases.																			
			Recent rate cases will provide some clarity for the coming years. In June, the Golden State Water case (which deals with general rates in 2013-2015) reached a proposed settlement between Golden State Water Company and two consumer advocacy groups. The agreement pending the approval of California Public Utilities Commission (CPUC) and nearly resolves all issues in the case. The decision would generate close to \$9 million in additional annual revenue starting in 2013, compared to 2012 adopted revenues. Proposed rates are set to increase \$8.0 million and \$6.0 million in 2014 and 2015, respectively.																			
			The ASUS operations have helped boost the quarterly dividend. The dividend has been increased to \$0.36 from \$0.28 due to ASUS' board of directors approval to help fund a portion of AWR's upcoming dividend. We anticipate that the subsidiary will continue to partially fund the company's dividend.																			
			The Timeliness rank of this issue is 3 (Average). Income investors might find the stock of interest, as the dividend yield offers above-average return when compared to the Value Line median. However, we advise longer-term investors to look elsewhere, due to the below-average capital appreciation potential.																			
			Michael Collins October 18, 2012																			
			Company's Financial Strength A- Stock's Price Stability 90 Price Growth Persistence 65 Earnings Predictability 50																			
			To subscribe call 1-800-833-0046																			
			(A) Primary earnings. Excludes nonrecurring gains/losses: '04, '04, '05, '05; '06, '06, '06; '07, '07, '07; '08, '08, '08; '09, '09, '09; '10, '10, '10; '11, '11, '11; '12, '12, '12; '13, '13, '13; '14, '14, '14; '15, '15, '15; '16, '16, '16; '17, '17, '17; '18, '18, '18; '19, '19, '19; '20, '20, '20; '21, '21, '21; '22, '22, '22; '23, '23, '23; '24, '24, '24; '25, '25, '25; '26, '26, '26; '27, '27, '27; '28, '28, '28; '29, '29, '29; '30, '30, '30; '31, '31, '31; '32, '32, '32; '33, '33, '33; '34, '34, '34; '35, '35, '35; '36, '36, '36; '37, '37, '37; '38, '38, '38; '39, '39, '39; '40, '40, '40; '41, '41, '41; '42, '42, '42; '43, '43, '43; '44, '44, '44; '45, '45, '45; '46, '46, '46; '47, '47, '47; '48, '48, '48; '49, '49, '49; '50, '50, '50; '51, '51, '51; '52, '52, '52; '53, '53, '53; '54, '54, '54; '55, '55, '55; '56, '56, '56; '57, '57, '57; '58, '58, '58; '59, '59, '59; '60, '60, '60; '61, '61, '61; '62, '62, '62; '63, '63, '63; '64, '64, '64; '65, '65, '65; '66, '66, '66; '67, '67, '67; '68, '68, '68; 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MIDDLESEX WATER NDQ-MSEX		RECENT PRICE	19.24	PE RATIO	20.5 (Trading 24.7 Median 22.0)	RELATIVE PE RATIO	1.35	DIVID YLD	3.8%	VALUE LINE										
TIMELINESS 3	Initial 10/1/12	High	18.7	20.0	21.2	21.6	23.5	20.5	20.2	18.6	17.9	18.0	18.4	18.5	18.0			Target Price Range	2016	2017
SAFETY 2	Low 10/1/12	Low	14.7	13.7	15.6	16.7	17.1	16.5	16.0	12.0	11.8	14.7	16.5	18.0				2016	2017	
TECHNICAL 3	Initial 10/1/12	LEGENDS (L) = Dividends as % of current price (blue) (C) = Dividends as % of current price (green) (D) = Dividends as % of current price (red) (E) = Dividends as % of current price (purple) (F) = Dividends as % of current price (orange) (G) = Dividends as % of current price (brown) (H) = Dividends as % of current price (pink) (I) = Dividends as % of current price (grey)																		
2015-17 PROJECTIONS		2015-17 PROJECTIONS Price Gain Return High 25 (+30%) 10% Low 18 (-6%) 3%																		
Institutional Developments		Institutional Developments 4Q11 10Q11 3Q12 to buy 23 29 30 to sell 23 21 20 net buy 0 8 10 net sell 0 0 0 total 1 1 0 1 0 1 0 1																		
MARKET CAP: \$508 million (2012)		MARKET CAP: \$508 million (2012) 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013																		
CURRENT POSITION		CURRENT POSITION 2010 2011 2012 Cash Assets 2.5 3.1 2.7 Other 20.3 19.8 20.7 Current Assets 22.8 22.9 23.4 Accrs Payable 5.4 5.7 4.8 Debt Due 4.4 4.6 5.0 Other 28.9 26.4 28.7 Current Liab. 40.7 46.7 48.5 Fr. Chg. Cov. 402% 380% 300%																		
ANNUAL RATES of change (per cent)		ANNUAL RATES of change (per cent) 1996-11 1996-11 Revenue 3.2% 1.5% 4.0% "Cash Flow" 3.5% 3.5% 7.0% Earnings 2.5% 4.5% 7.0% Dividends 2.0% 1.5% 1.5% Book Value 4.5% 5.5% 3.5%																		
QUARTERLY REVENUE (\$ mil.)		QUARTERLY REVENUE (\$ mil.) 2009 20.6 23.1 25.5 22.0 91.2 2010 21.6 26.5 23.6 25.0 102.7 2011 24.0 26.1 28.7 23.3 102.1 2012 23.5 27.4 30.0 24.1 105 2013 28.0 28.0 32.0 27.0 115																		
QUARTERLY EARNINGS PER SHARE		QUARTERLY EARNINGS PER SHARE 2009 .10 .21 .29 .12 .72 2010 .11 .21 .37 .17 .96 2011 .17 .23 .32 .12 .84 2012 .11 .23 .30 .10 .85 2013 .20 .26 .35 .20 1.00																		
QUARTERLY DIVIDENDS PER SHARE		QUARTERLY DIVIDENDS PER SHARE 2009 .175 .175 .175 .175 .70 2010 .178 .178 .178 .180 .71 2011 .180 .180 .180 .183 .72 2012 .183 .183 .183 .185 .73 2013 .185 .185 .185 .185 .73																		
MARKET CAP: \$508 million (2012)		MARKET CAP: \$508 million (2012) 1.3% 106% 9% .8% 1.3% 1.5% 2.0% .1% 2.1% 1.1% 1.8% 2.8% 87% 106% 90% 94% 94% 79% 73% 99% 79% 88% 88% 78%																		
Business Description		Business Description Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 50,000 retail customers, primarily in Middlesex County, New Jersey, in services business.																		
Capital Investment		Capital Investment Capital investment will likely help longer-term growth. The company has invested half of the \$22 million it has projected on storage tanks, water mains, and service lines. Additionally, capex outlays are expected to exceed \$34 million over the next two years. The vast majority of these investments are targeted toward its Distribution systems. We believe the focus on water distribution infrastructure is crucial to help offset the weakening demand on the company's commercial and industrial customers. The residential market in New Jersey will probably continue to struggle, as an elevated unemployment rate and a slumping housing market hurt consumer demand.																		
Rate Increases		Rate Increases Rate increases should help stem rising costs. Over the summer, the company's Tidewater business in Delaware was approved for a \$3.9 million increase in its base water rates. Additionally, the New Jersey Board of Public Utilities approved an \$8.1 million increase for its New Jersey customers in its Middlesex System. (The company had requested a rate increase of \$11.3 million per year.) Tidewater Environmental Services (TESI) also received a partial rate increase for its wastewater																		
Financial Strength		Financial Strength Company's Financial Strength 9- Stock's Price Stability 35 Price Growth Persistence 35 Earnings Profitability 55																		
Disclaimer		Disclaimer (A) Divided earnings. Next earnings report due late October. (B) Dividends historically paid in mid-Feb., May, Aug., and November. Dividends reinvested. (C) In millions, adjusted for splits. (D) Intangible assets in 2011: \$8.2 million, \$0.55 a share. © 2012, Value Line Publishing LLC. All rights reserved. Factbook material is obtained from sources believed to be reliable, and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is solely for subscribers' use, not commercial, internal use, for part of a copy or reproduction, stock, bond or securities in any period, electronic or other form, or used for spreading or marketing any product or disclosure publication, service or product.																		

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SJW CORP. NYSE: SJW				RECENT PRICE	24.55	PE RATIO	23.4 (Trading 21.7, Median 23.0)	RELATIVE PE RATIO	1.54	DIVID YLD	2.9%	VALUE LINE				
TIMELINESS 3 (Total 00/10)	SAFETY 3 (Low 00/10)	TECHNICAL 3 (Lowest 00/10)	BETA .86 (1.01-Market)	High 17.6	15.1	15.0	19.6	27.8	45.3	43.0	35.1	30.4	28.2	26.9	25.9	Target Price Range 2016 2018 2017
2015-17 PROJECTIONS Price Gain Return High 40 +45% 75% Low 30 +20% 7%																
INCIDENTAL DEVELOPMENTS to Buy 24 34 34 to Sell 22 22 21 HOLDERS 5947 5012 5953				PERCENT CHANGE 1995-1997 1998-1999 2000-2001 2002-2003 2004-2005 2006-2007 2008-2009 2010-2011 2012-2013												
CAPITAL STRUCTURE as of 09/30/12 Total Debt \$344.2 mil. Due in 6 Yrs \$8.3 mil. LT Debt \$335.3 mil. LT Interest \$19.6 mil. (Total Interest coverage: 2.9x)				REVENUES per sh 13.70 CASH FLOW per sh 2.66 EARNINGS per sh 1.28 DIVID per sh .37												
LESSONS, UNQUALIFIED: Annual rental \$4.5 mil. Pension Assets-10/11 \$62.5 mil. Oppq \$123.9 mil. Pre Stock Acct. Common Stock 16,636,796 shs. as of 10/01/12 MARKET CAP \$468 million (Small Cap)				REVENUES (Bill) 278 Net Profit (Bill) 21.0 Income Tax Rate 40.0% WFCG % to Net Profit 6.0% Long-Term Debt Ratio 33.0% Common Equity Ratio 40.0% Total Equity (Bill) 625 Net Plant (Bill) 1000 Return on Total Cap'l 8.0% Return on Str. Equity 7.8% Return on Com Equity 7.6% Related to Com Eq 3.6% All Div's to Net Profit 30%												
CURRENT POSITION 2010 2011 09/30/12 (Bill) Cash Assets 1.7 26.2 9.3 Other 36.3 42.2 43.0 Current Assets 38.0 68.3 58.3 Accts Payable 5.5 7.4 14.3 Debt Due 18.5 20.1 23.2 Other 18.5 20.1 23.2 Current Liab. 28.2 28.3 28.3 Fix. Chg. Cov. 252% 276% 260%				ANNUAL RATES Paid 08-'11 vs '10-'11 Revenue 8.2% 4.5% 2.0% "Cash Flow" 5.0% 2.5% 3.6% Earnings 2.5% -3.0% 0.6% Dividends 5.0% 5.0% 3.6% Stock Value 5.5% 4.5% 3.5%												
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AGL RESOURCES NYSE:GAS			RECENT PRICE	39.44	PE RATIO	13.5 (Trading: 22.3, Market: 13.0)	RELATIVE P/E RATIO	0.91	DIVID YLD	4.7%	VALUE LINE																								
TIMELINESS	3	Initial 1/1/11	High	34.5	25.0	20.5	33.7	33.3	40.1	44.7	38.1	37.5	46.1	42.7	42.9		Target Price	2016	2016	2017															
SAFETY	1	Initial 1/1/11	Low	19.0	17.5	21.9	26.5	32.0	34.4	35.2	24.0	24.0	34.2	34.1	35.8		2016	2016	2017																
TECHNICAL	3	Initial 1/1/11																																	
BEA	75	(LBI)-Market																																	
2015-17 PROJECTIONS			Price	65	70	75	80	85	90	95	100	105	110	115	120																				
Tranche Decisions			Gain	+80%	+80%	+80%	+80%	+80%	+80%	+80%	+80%	+80%	+80%	+80%	+80%																				
Institutional Decisions			Return	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%																					
MARKET CAP: \$4.8 billion (Mid Cap)			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026															
CURRENT POSITION (\$ MIL)			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026															
ANNUAL RATES			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026															
QUARTERLY REVENUES (\$ MIL)			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026															
EARNINGS PER SHARE			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026															
QUARTERLY DIVIDENDS PND (%)			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026															
AGL Resources' earnings perked up in the second period.			<p>The bottom line rose by over 20% from the same period last year, a trend likely to continue over the next few quarters. That said, erratic weather patterns, along with challenges facing AGL's nonregulated segments, have caused us to lower our 2012 per-share estimate by \$0.15, to \$2.65 for the year.</p> <p>Growth should be steady over the next few years, despite various obstacles in the company's path. Major concerns are that the slow economic recovery is hindering customer growth, and this, along with a lack of new rate filings, will likely be a headwind. Also, the Midstream segment which is likely to suffer from low natural gas prices (The supply glut caused storage pricing for the Jefferson Island facility to drop from \$0.19 to \$0.14) might present some problems. That said, the benefits gained from the Nicor merger (which made AGL Resources the largest gas distribution company in the country considerably increasing its volume production and geographic reach), should more than offset the pressure from the factors above.</p> <p>The company is seeking to begin a major investment venture. The Accelerated Infrastructure Replacement (AIR) plan would enable AGL Resources to spend up to \$135 million over the next five years, starting at the end of 2012. The venture would come on the heels of the ending of the Utility Infrastructure Enhancement (UIE) program, which is set to expire at the end of October. Much of the AIR venture would deal with pipeline maintenance, replacing over 150 miles of pipes, in turn enhancing customer service and paving the way for rate increases.</p> <p>Despite obstacles, the long term looks steady. Previous favorable rate rulings are set to boost the top and bottom lines for the 3- to 5-year period. Furthermore, as stated above, the Nicor merger should help alleviate most of the pressure from a lackluster economic environment. That said, concerns remain regarding several segments that could be hurt by low gas prices.</p> <p>Income investors will be most interested in this neutrally ranked equity, with its strong yield and high likelihood of future payout hikes.</p> <p><i>Sahara Zutshi</i> September 7, 2012</p>																																
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(A) Fiscal year ends December 31st. Ended September 30th prior to 2012.
 (B) Diluted earnings per share. Excl. nonrecurring gains (losses): '09, \$0.33; '10, \$0.13; '11, \$0.12.
 (C) Dividends historically paid early March, June, Sept., and Dec. = 5%/yr. reinvest. plan available. (D) Includes intangibles. In 2011: \$1918 million, \$15.40/share.
 (E) In millions. (F) Excluding special dividends from the Nicor merger.
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Company's Financial Strength: A
 Stock's Price Stability: (10)
 Price Growth Persistence: (5)
 Earnings Predictability: (7)
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ATMOS ENERGY CORP. NYSE:ATO		RECENT PRICE	35.21	PE RATIO	13.7 (Trading: 15.9; Median: 14.0)	RELATIVE PE RATIO	0.93	DIVID YLD	4.0%	VALUE LINE									
TIMELINESS 2	Rated A(1/2)	High	35.8	34.8	35.8	27.8	30.0	35.1	35.8	26.3	30.2	32.0	35.8	37.2		Target Price Range	2016	2018	2017
SAFETY 2	Rated (1/2)B	Low	32.6	27.6	20.8	22.4	25.0	25.8	23.9	19.7	20.1	25.9	28.5	30.4					
TECHNICAL 3	Rated A(3/2)	LEVERAGE (L) & (D) Debt to eq. ratio (E) Earnings after strength (C) Cash flow strength (S) Status after balance sheet																	
2015-17 PROJECTIONS		2015-17 PROJECTIONS Ann'l Total High 40 (+16%) 7% Low 30 (-16%) 1%																	
Institutional Decisions		Institutional Decisions Buy 110 152 127 Hold 118 102 117 Sell 51 52 52																	
MARKET CAP: \$5.2 billion (Mid Cap)		MARKET CAP: \$5.2 billion (Mid Cap)																	
CURRENT POSITION: 2018 2011 2001/2 (BILL)		CURRENT POSITION: 2018 2011 2001/2 (BILL) Cash Assets 131.0 131.4 77.7 Other 743.2 875.6 728.0 Current Assets 875.2 1011.0 775.7 Accts Payable 256.2 291.2 178.2 Distl Due 486.3 308.8 463.6 Other 413.7 367.6 458.4 Current Liab. 7155.7 867.8 1110.2 Fix. Chg. Cov. 440% 432% 430%																	
ANNUAL RATES		ANNUAL RATES Pwd. of change (per) 1% to '16-'17 Revenues 5.5% -3.5% 3.7% "Cash Flow" 4.5% 4.5% 3.6% Earnings 7.0% 4.0% 4.0% Dividends 1.5% 1.5% 1.7% Book Value 5.5% 4.5% 4.0%																	
QUARTERLY REVENUES (\$ mil) A		QUARTERLY REVENUES (\$ mil) A Full Fiscal Year 2009 716.3 1021.4 766.9 655.5 4969.1 2010 732.9 1040.3 770.2 706.3 4769.7 2011 133.2 1581.5 843.5 769.2 4347.5 2012 101.2 1243.4 585.8 749.8 3889 2013 190 1415 625 700 4200																	
EARNINGS PER SHARE A #		EARNINGS PER SHARE A # Full Fiscal Year 2009 .83 1.25 .80 0.17 1.91 2010 1.00 1.17 0.83 .82 2.16 2011 .81 1.40 .84 .81 2.26 2012 .72 1.95 .33 .64 2.95 2013 .62 2.38 .42 .69 2.25																	
QUARTERLY DIVIDENDS PWD %		QUARTERLY DIVIDENDS PWD % Full Fiscal Year 2009 .325 .325 .325 .33 1.31 2010 .33 .33 .33 .33 1.33 2011 .34 .34 .34 .34 1.35 2012 .345 .345 .345																	
FINANCIAL STRENGTH		FINANCIAL STRENGTH S- Stock's Price Stability A- Price Growth Persistence B- Earnings Predictability																	
BUZINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to over three million customers via six regulated natural gas utility operations: Louisiana Division, West Texas Division, Mid-Texas Division, Mississippi Division, Colorado-Kansas Division, and Kentucky/Mid-States Division. Combined 2011 gas volumes: 291.5 MMcf. Breakdown: 57% residential; 32% commercial; 7% industrial; and 4% other. 2011 appreciation rate 3.3%. Has around 4,750 employees. Officers and directors own 1.5% of common stock (12/11 Proxy). President and Chief Executive Officer: Kim R. Cocklin, Inc., Texas. Address: Three Lincoln Centre, Suite 1800, 5430 US Highway, Dallas, Texas 75244. Telephone: 972-938-5227. Internet: www.atmosenergy.com.		From an earnings standpoint, it appears that Atmos Energy will have an unexciting fiscal 2012 (ends September 30th), compared to last year. Through the first nine months, the natural gas distribution division, accounting for the bulk of net income, was hurt partially by a 9% decline in throughput, as warmer weather conditions held back consumption. Moreover, revenue-related taxes here were lower because of decreased revenues on which the tax is calculated. But this segment benefited from rate hikes, particularly in the Texas, Louisiana, Mississippi, and Kentucky service areas. Meanwhile, results for the regulated transmission and storage segment (the second-biggest unit) were boosted nicely by rate design adjustments approved in the Atmos Pipeline—Texas case that became effective in May, 2011. Even so, we believe that the bottom line for fiscal 2012 will be about flat, at \$2.25 a share. But assuming some improvement in the operating performance of the natural gas distribution segment, share net might well advance to \$2.35 next year.																	
Non-strategic units are being divested. Atmos recently completed the sale of the natural gas distribution business in Missouri, Iowa, and Illinois (serving around 84,000 customers) to an affiliate of Algonquin Power & Utilities Corp. for \$129 million. Furthermore, there was an announcement to sell the natural gas distribution segment in Georgia, representing roughly 64,000 customers, to an affiliate of Algonquin Power & Utilities Corp. for about \$141 million. Pending regulatory approvals, the transaction is expected to close sometime during fiscal 2013. Management intends to use the proceeds from these deals to support growth initiatives in such key states as Texas and Louisiana.		The primary attraction here is the dividend yield which is higher than the average of all gas utility stocks tracked by Value Line. Also, our 2015-2017 projections indicate that further, though modest, hikes in the well-covered payout are likely to occur. Other good attributes include a 2 (Above Average) rank for both Safety and Timeliness, plus an excellent score for Price Stability.																	
Frederick L. Harris, III September 7, 2012		Frederick L. Harris, III September 7, 2012																	
FINANCIAL STRENGTH		FINANCIAL STRENGTH S- Stock's Price Stability A- Price Growth Persistence B- Earnings Predictability																	
TO SUBSCRIBE		TO SUBSCRIBE call 1-800-833-0046.																	

NEW JERSEY RES. NYSE: NJR										RECENT PRICE	PE RATIO	Yield: 15.2 (Trailing 15.2) 15.3 (Market 15.3)	RELATIVE PE RATIO	DIVD YLD	3.3%	VALUE LINE			
TIMELINESS 4 (Lowest 0/1/1)	High	21.7	22.4	26.4	29.7	32.9	35.4	37.6	41.1	42.4	44.1	50.5	50.9			Target Price Range			
SAFETY 1 (Lowest 0/1/1)	Low	16.6	16.2	20.0	24.1	27.1	27.7	30.3	24.6	30.0	33.6	39.9	41.1			2016 2017			
TECHNICAL 3 (Lowest 0/1/1)																			
BEA (LBI-Mark)																			
2015-17 PROJECTIONS																			
Price	Gain	Return																	
55	(+25%)	8%																	
45	(-18%)	3%																	
Analyst Decisions																			
Buy	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
Hold	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0			
Sell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Institutional Decisions																			
Buy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Hold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Sell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
PERFORMANCE																			
1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	WILLIE LUXE PUB LLC	15-17
13.41	17.31	17.73	22.65	29.42	31.22	44.11	62.29	69.89	76.19	79.53	72.62	30.74	62.34	94.10	72.50	90.00	90.00	Revenues per sh	\$7.20
1.48	1.63	1.74	1.98	1.99	2.12	2.14	2.38	2.50	2.62	(2.7)	(2.84)	3.52	3.15	3.26	3.40	3.88	4.19	"Cash Flow" per sh	4.90
.52	.39	1.04	1.11	1.20	1.30	1.39	1.59	1.70	1.77	1.87	1.95	2.70	2.40	2.46	2.58	3.88	3.16	Earnings per sh	3.40
.69	.71	.73	.73	.73	.73	.60	.53	.67	.51	.56	1.01	1.01	1.24	1.36	1.44	1.52	1.52	Divs Decl'd per sh	1.00
1.19	1.15	1.07	1.21	1.23	1.10	1.02	1.14	1.45	1.28	1.28	1.46	1.72	1.81	3.10	3.25	3.00	3.00	Cap'l Spending per sh	2.00
6.73	6.52	7.26	7.57	8.28	8.60	8.71	10.26	11.25	10.60	15.00	15.50	17.23	16.53	17.62	16.73	16.28	16.28	Book Value per sh	24.00
40.65	40.23	40.07	39.52	39.59	40.00	41.50	40.85	41.61	41.32	41.44	41.51	42.06	41.59	41.17	41.45	40.00	40.00	Common Sh Outlyg	48.00
13.8	13.5	15.3	15.2	14.7	14.2	14.7	14.0	15.3	16.8	16.1	21.5	12.3	14.9	15.0	16.2	16.2	16.2	Agg Ret'l P/E Ratio	14.0
.55	.37	.60	.67	.66	.73	.60	.60	.61	.60	.67	1.15	.74	.99	.95	1.05	1.05	1.05	Relative P/E Ratio	.80
5.6%	5.3%	4.5%	4.5%	4.4%	4.2%	3.9%	3.7%	3.3%	3.1%	3.2%	3.0%	3.3%	3.5%	3.7%	3.3%	3.3%	3.3%	Agg Ret'l Divd Yld	2.8%
CAPITAL STRUCTURE as of 8/30/12																			
Total Debt \$736.1 mil. Due in 6 Yrs \$129.1 mil.	1930.0	2544.4	2533.6	3146.3	3299.9	3021.8	3816.2	2592.5	2639.3	3009.2	2200	3200	3200	3200	3200	3200	3200	Revenues (\$mil)	3400
LT Debt \$425.1 mil. LT Interest \$19.6 mil.	56.3	65.4	71.5	74.4	76.5	85.3	113.8	101.0	101.0	101.0	101.0	101.0	101.0	101.0	101.0	101.0	101.0	Net Profit (\$mil)	140
Inc. \$69.9 mil. capitalized leases.	36.7%	39.4%	38.1%	38.1%	38.9%	38.9%	37.6%	37.1%	41.4%	33.2%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%	Income Tax Rate	38.0%
(LT Interest earned: 7.5x total interest coverage: 7.5x)	3.1%	2.6%	2.6%	2.4%	2.4%	2.2%	3.0%	5.9%	1.9%	1.5%	4.8%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	Net Profit Margin	4.0%
Perman Assets \$111 \$155.7 mil.	30.6%	38.1%	40.3%	42.0%	34.8%	37.3%	33.9%	39.9%	37.2%	35.9%	48.3%	38.3%	38.3%	38.3%	38.3%	38.3%	38.3%	Long-Term Debt Ratio	33.0%
PD Stock None	48.4%	61.9%	59.7%	58.0%	65.2%	62.7%	61.5%	60.2%	62.8%	64.5%	68.0%	68.0%	68.0%	68.0%	68.0%	68.0%	68.0%	Common Sh Outlyg	48.0%
Common Stock 41,588,540 shs. as of 8/30/12	732.4	676.6	763.6	755.3	854.0	1028.0	1182.1	1144.3	1154.4	1203.1	1230	1230	1230	1230	1230	1230	1230	Total Capital (\$mil)	1400
MARKET CAP: \$1.9 billion (Mid Cap)	756.4	852.6	880.4	905.1	934.3	970.3	1017.3	1064.3	1135.7	1295.5	1320	1350	1350	1350	1350	1350	1350	Return on Total Cap'l	10.0%
	8.7%	10.7%	10.1%	11.2%	9.6%	7.7%	10.7%	9.7%	5.7%	9.7%	19.8%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	Return on Str. Equity	14.0%
	15.7%	15.6%	15.3%	17.0%	12.6%	10.1%	15.7%	14.6%	14.0%	13.7%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	Return on Com Equity	14.0%
	15.7%	15.6%	15.3%	17.0%	12.6%	10.1%	15.7%	14.6%	14.0%	13.7%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	Return to Govt	7.5%
	5.9%	7.7%	7.8%	8.5%	6.3%	3.6%	9.5%	7.2%	6.7%	6.2%	7.3%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	Return to Net Prof	40%
	5.6%	5.1%	4.9%	5.0%	5.0%	5.6%	4.0%	5.0%	5.2%	5.0%	4.3%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%		
BUSINESS: New Jersey Resources Corp. is a holding company providing retail/wholesale energy svcs. to customers in New Jersey, and in states from the Gulf Coast to New England, and Canada. New Jersey Natural Gas had about 434,364 customers at 3/30/11 in Monmouth and Ocean Counties, and other N.J. Counties. Fiscal 2011 volume: 173 bil. cu. ft. (5% interchangeable, 35% residential and commercial and electric utility, 60% incentive program). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas, and related energy svcs. 2011 esp. rate: 2.2%. Has 891 emp. Off. div. own about 1.1% of common (12/11 Proxy). Officer, CEO & Pres.: Laurence M. Downes, Inc. NJ Addr.: 1415 Wyckoff Road, Wall, NJ 07719. Tel.: 732-935-1480. Web: www.njresources.com.																			
ANNUAL RATES																			
of change per sh	10 Yrs	5 Yrs	1 Yr	10 Yrs	5 Yrs	1 Yr	10 Yrs	5 Yrs	1 Yr	10 Yrs	5 Yrs	1 Yr	10 Yrs	5 Yrs	1 Yr	10 Yrs	5 Yrs	1 Yr	10 Yrs
Revenues	7.0%	-1.5%	4.6%	5.0%	4.5%	5.6%	7.5%	7.0%	6.6%	6.2%	7.3%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%
"Cash Flow"	5.0%	4.5%	5.6%	5.0%	4.5%	5.6%	6.9%	6.0%	5.9%	4.6%	4.6%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%
Earnings	7.5%	7.0%	6.6%	7.5%	7.0%	6.6%	8.7%	8.0%	7.5%	6.6%	6.6%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%
Dividends	6.9%	6.0%	4.6%	6.9%	6.0%	4.6%	8.7%	8.0%	7.5%	6.6%	6.6%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%
Book value	8.5%	7.5%	6.6%	8.5%	7.5%	6.6%	10.7%	10.1%	9.6%	7.7%	10.7%	9.7%	5.7%	9.7%	19.8%	11.0%	11.0%	11.0%	11.0%
QUARTERLY REVENUE (\$ mil.)																			
Fiscal Year Ends	Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year														
2009	801.3	927.5	441.1	412.5	2582.5														
2010	809.6	918.4	479.0	521.5	2539.3														
2011	713.2	977.0	545.1	670.9	3006.2														
2012	642.4	612.9	425.1	518.6	2200														
2013	690	685	675	770	3280														
EARNINGS PER SHARE \$																			
Fiscal Year Ends	Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year														
2009	.77	1.71	.35	4.12	2.40														
2010	.66	1.55	.25	4.03	2.46														
2011	.71	1.62	.23	2.08	2.08														
2012	1.09	1.75	.10	4.73	2.85														
2013	1.75	1.67	.28	3.15	3.15														
QUARTERLY DIVIDENDS \$																			
Calendar Year	Mar.31	Jun.30	Sep.30	Dec.31	Full Year														
2008	.257	.28	.28	.28	1.11														
2009	.31	.31	.31	.31	1.24														
2010	.34	.34	.34	.34	1.36														
2011	.36	.36	.36	.36	1.44														
2012	.38	.38	.38	.38	1.52														
Company's Financial Strength																			
Stock's Price Stability	A																		
Price Growth Persistence	SS																		
Earnings Predictability	SI																		
September 7, 2012																			
We look for the company to post an earnings increase of 10.5% for fiscal 2012 (ends September 30th). This ought to be largely supported by a rise in the number of customer accounts at the New Jersey Natural Gas regulated utility division. That unit makes up the lion's share of NJR's business mix and is expected to add 12,000 to 14,000 new customers this year and next, combined. At the same time, multiple capital projects for alternative energy investments augur well for prospects at the NJR Clean Energy Ventures segment. That division should continue to ramp up as more businesses opt to install solar power systems. Meanwhile, we expect continued softness from NJR Energy services as historically low natural gas prices and reduced volatility weigh on the wholesale market place.																			
The overall financial position is solid. Although the cash reserves declined about 5% so far this year, that cushion still sits at roughly \$7.0 million. Meanwhile, total debt increased about 24% over this time frame. However, a large portion of that increase stems from a rise in short-term notes outstanding, which will be expiring later this year. Too, management repurchased a little more than 200,000 shares of common stock this year. At this point, the board is authorized to buy back another 1.2 million shares. Further repurchases would surely bolster share net.																			
New Jersey Resources stock has advanced about 8% in price since our June review. At this time, it is trading inside our Target Price Range, and offers below-average total return potential compared to other gas utilities, for the pull to 2015-2017.																			
Bryan J. Fong																			
To subscribe call 1-800-833-0046																			

N.W. NAT'L GAS NYSE:RWN		RECENT PRICE	PE RATIO	YIELD	RELATIVE P/E RATIO	DIVID YLD	VALUE LINE																																																																																																																																					
TIMELINESS 4 (lowest 1/31/11) SAFETY 1 (lowest 1/31/11) TECHNICAL 3 (lowest 1/31/11) BETA 1.01 (1.01-Market)		49.66	19.2	3.6%	1.30	3.6%																																																																																																																																						
2015-17 PROJECTIONS Price Gain Return High 50 (+30%) 10% Low 50 (0%) 4%																																																																																																																																												
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ANNUAL RATES Change per share Revenue 4.5% Cash Flow 3.0% Earnings 4.5% Dividends 3.0% Book Value 4.0%		Northwest Natural Gas' bottom line is set to advance marginally in 2012, with a projected 2.5% rise from 2011 year-end. The slow incline can be attributed mainly to increased operational expenses that have been plaguing the company since the beginning of the year. Therefore, we have lowered our 2012 and 2013 share-price estimates by a nickel each, to \$2.45 and \$2.65, respectively.																																																																																																																																										
QUARTERLY REVENUES (\$ MIL)		Customer growth might be relatively flat for the year, as a result of the slow economic recovery. The main segment impacted by this weak rebound is the construction segment, where new customer additions were under 1% from the previous quarter. We do not foresee a sudden reversal of this trend, and growth is likely to remain weak for the next few quarters. Oregon remains a major focus at this time. The company has reached a partial settlement with the Oregon Public Utilities Commission (OPUC) on various miscellaneous items. However, several key issues, including ROE, recovery of pension expenses, and Northwest's environmental cost recovery proposal, remain on the table. The case might encounter several																																																																																																																																										
QUARTERLY EARNINGS PER SHARE		obstacles over the remainder of the year, as both the OPUC and the company have filed rebuttal and surrebuttal testimonies for various items on the agenda. A decision is scheduled for the end of the third quarter. A favorable outcome would provide a moderate boost to the top and bottom lines (an increase of \$35 million annually), as well as strengthen Northwest Natural Gas' position in the state (as many of the proposed changes would benefit customers as well). Finally, management is keeping an eye on Oregon Governor Kitzhaber's 10-year energy plan for the state, which would provide various opportunities for new natural gas facilities over the next decade.																																																																																																																																										
QUARTERLY DIVIDENDS (CASH)		The long-term outlook is modestly upbeat at this juncture. Indeed, several major projects are set to moderately boost the top and bottom lines over the 3- to 5-year period. Eventually, too, the regional economy should pick up and boost growth. Performance-minded investors should give this untimely equity a pass. For a utility, the shares are an average selection for income and total return potential.																																																																																																																																										
FINANCIAL STRENGTH		Sahana Zutshi September 7, 2012																																																																																																																																										
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PIEDMONT NAT'L. GAS NYSE:PNY		RECENT PRICE	31.45	PE RATIO	18.7 (Trading 21.0, Market: 18.0)	RELATIVE P/E RATIO	1.26	DIVID YLD	3.8%	VALUE LINE																						
TIMELINESS 3	Initial 02/17	High	19.0	19.0	22.0	24.3	25.8	28.0	30.3	32.0	36.1	34.7	34.9		Target Price Range	2016	2017															
SAFETY 2	Low 10/90	Low	14.6	13.7	19.6	19.2	21.3	23.0	21.7	20.7	23.9	25.0	28.9		2016	2017																
TECHNICAL 3	Initial 02/17																															
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<table border="1"> <tr> <th>Price</th> <th>Gain</th> <th>Return</th> </tr> <tr> <td>High 40</td> <td>(+25%)</td> <td>10%</td> </tr> <tr> <td>Low 30</td> <td>(-6%)</td> <td>3%</td> </tr> </table>																	Price	Gain	Return	High 40	(+25%)	10%	Low 30	(-6%)	3%							
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Buy	Over	Hold	Under	Sell																												
0	0	0	0	0																												
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100	100	100	5																													
1996-2012 Financial Summary																																
1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	WILLIE LANE PUB LLC	15-17													
11.59	12.84	12.45	10.67	13.01	17.06	12.67	16.14	19.95	22.96	25.80	23.37	26.52	22.36	21.48	19.83	19.88	22.00	22.00	Revenue per sh A	26.70												
1.49	1.62	1.72	1.73	1.77	1.81	1.81	2.04	2.21	2.43	2.51	2.64	2.77	3.01	2.91	2.88	2.88	3.28	3.28	"Cash Flow" per sh	3.40												
34	33	36	33	1.01	1.01	35	1.11	1.27	1.32	1.26	1.40	1.49	1.67	1.55	1.57	1.50	1.70	1.70	Earnings per sh NP	1.65												
57	51	54	58	72	73	60	62	65	51	35	35	103	107	111	115	116	123	123	Divs Decl'd per sh	1.30												
1.64	1.52	1.48	1.58	1.65	1.29	1.21	1.16	1.65	2.50	2.74	1.85	2.47	1.76	3.75	3.37	3.37	3.79	3.79	Cap'l Spending per sh	3.70												
6.53	6.95	7.45	7.86	8.26	8.63	8.51	8.36	11.15	11.53	11.83	11.89	12.11	12.67	13.35	13.70	13.88	13.88	13.88	Book Value per sh	14.66												
99.10	60.39	61.44	62.59	63.83	64.93	66.18	67.31	76.67	76.70	74.61	73.23	73.26	73.27	72.38	72.32	71.00	70.00	70.00	Common Sh Outstg A	48.00												
133	133	163	177	143	167	184	167	163	179	182	187	182	154	171	193	193	193	193	Agg Ret'l P/E Ratio	18.0												
57	37	45	1.01	53	55	1.01	35	88	95	1.04	39	1.10	1.03	-1.09	-1.19				Relative P/E Ratio	1.20												
4.5%	4.5%	4.5%	4.1%	5.0%	4.5%	4.5%	4.4%	4.1%	3.8%	3.9%	3.8%	4.1%	4.2%	4.1%	4.2%	4.1%	4.2%	4.1%	Agg Ret'l Divd Yld	2.8%												
CAPITAL STRUCTURE as of 4/30/12																																
Total Debt \$1155.0 mil. Due in 6 Yrs \$175.0 mil.																																
LT Debt \$775.0 mil. LT Interest \$46.1 mil.																																
(LT Interest earned: 4.1% total interest coverage: 3.4x)																																
Percent Assets-10/11 \$259.5 mil.																																
Pfd Stock None. Oblg. \$236.6 mil.																																
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MARKET CAP: \$2.3 billion (Mid Cap)																																
CURRENT POSITION 2010 2011 4Q9/12 (\$ MIL)																																
Cash Assets 5.6 5.8 10.4																																
Other 222.2 279.2 265.1																																
Current Assets 227.8 285.0 275.5																																
Accts Payable 115.7 129.7 103.4																																
Debt Due 302.0 331.0 80.0																																
Other 80.3 72.9 95.0																																
Current Liab. 497.7 534.1 273.4																																
Fl. Chg. Cov. 123% 123% 125%																																
ANNUAL RATES																																
Change per sh 0 Yrs. 1 Yrs. 3 Yrs. 5 Yrs. 10 Yrs.																																
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QUARTERLY REVENUES (\$ MIL) A																																
Fiscal Year Ends	Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year																											
2009	179.6	455.4	180.3	202.6	1638.1																											
2010	173.7	472.9	211.6	194.1	1552.3																											
2011	162.0	392.6	197.3	192.0	1433.9																											
2012	471.6	308.4	225	244.8	1250																											
2013	505	480	290	295	1890																											
QUARTERLY EARNINGS PER SHARE A & B																																
Fiscal Year Ends	Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year																											
2009	1.10	.73	0.70	0.36	1.57																											
2010	1.14	.65	0.13	0.13	1.55																											
2011	1.16	.66	0.12	0.13	1.57																											
2012	1.05	.70	0.70	0.70	1.55																											
2013	1.70	.70	0.69	0.69	1.70																											
QUARTERLY DIVIDENDS (P/D) C																																
Cap. Yield	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																											
2009	.25	.26	.26	.26	1.03																											
2010	.26	.27	.27	.27	1.07																											
2011	.27	.28	.28	.28	1.11																											
2012	.28	.29	.29	.29	1.15																											
2013	.29	.30	.30	.30																												

(A) Fiscal year ends October 31st. (B) Div'd reinvest, also available, 2% discount. (C) Div'd reinvest, also available, 2% discount. (D) Includes deferred charges. In 2011-\$52.5 million, \$7.25/share. (E) In millions, adjusted for stock split. Company's Financial Strength B++ Stock's Price Stability 110 Price Growth Persistence 55 Earnings Predictability 55 To subscribe call 1-800-833-0046

SOUTH JERSEY INDS. NYSE-SJ				RECENT PRICE	51.23	PE RATIO	16.0	(Trading 17.1 Median 13.7)	RELATIVE PE RATIO	1.08	DIVID YLD	3.3%	VALUE LINE																
TIMELINESS 2	Initial 07/01	High	17.0	18.5	20.5	26.5	32.4	34.3	41.3	40.8	54.2	58.0	58.0	Target Price	2016	2017													
SAFETY 2	Lowest 04/01	Low	13.6	14.1	13.2	19.7	24.9	25.6	31.2	25.3	37.2	42.8	48.5	2016	2017														
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BEA 5	(LBI)-Market																												
2015-17 PROJECTIONS																													
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UGI CORP. NYSE:UGI			RECENT PRICE	PE RATIO	YIELD	RELATIVE P/E RATIO	DIVID YLD	VALUE LINE	
TIMELINESS 3 Total 38/10 SAFETY 2 Total 37/104 TECHNICAL 3 (Lowest 9/11) BETA 1.0 (Low-Mark)			30.56	13.0 (Trading 11.1, Median 13.0)	3.5%	0.88	3.5%		
2015-17 PROJECTIONS Price Gain Return High 40 (+30%) 10% Low 30 (0%) 3%			High Low 10.0 7.5 13.0 9.0 17.0 12.5 20.7 14.9 30.0 19.2 29.0 20.2 29.6 22.8 28.0 19.7 27.4 21.1 32.5 23.8 33.5 24.1 31.5 26.0					Target Price Range 2016 2017	
Technical Decisions: Buy 0 0 1 0 0 0 0 1 0 Hold 0 1 1 0 0 0 0 1 0 Sell 0 2 1 0 1 0 0 1 1			% TOT. RETURN YTD 1 yr 5.5 -1.0 3 yr 20.5 20.3 5 yr 30.3 24.0						
Institutional Decisions: Buy 115 136 119 Hold 517 504 521 Sell 829 822 817			1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013					2014 2015 2016 2017	
MARKET CAP \$3.4 bil (Mkt Cap)			15.67 15.66 14.46 15.91 21.75 30.14 26.54 35.44 36.95 46.55 49.51 51.36 61.90 52.87 51.00 54.47 58.30 64.80					62.40	
CURRENT POSITION 2010 2011 2012 2013			1.21 1.38 1.25 1.62 1.74 1.99 2.03 2.38 2.44 3.13 3.03 3.39 3.72 4.23 4.30 4.12 4.90 5.56					6.86	
Business: UGI Corp. operates all business segments: AmeriGas Propane (accounted for 17.1% of net income in 2011), International Propane (17.6%), Gas Utility (42.5%), Electric Utility (2.5%), Midstream & Marketing (22.5%), and Corp. & Other (2.3%). UGI Utilities distributes natural gas and electricity to around 575,000 customers mainly in Pennsylvania; 28% owned AmeriGas Partners is the largest U.S. propane marketer, serving about 1.3 million users in 30 states. Acquired remaining 50% interest in Antargaz (30% Energy Transfer Partners (1/12), Wellington Management Co. holds 7.9% of stock; officers/directors, 3.0% (12/11 proxy). CEO: Lon Greenberg, Inc.; PA, Address: 460 N. Gulch Rd., King of Prussia, PA 19406. Telephone: 610-337-1000. Internet: www.ugicorp.com.			35 43 41 45 53 70 50 1.15 1.22 1.72 1.69 1.77 1.99 2.36 2.05 3.00 3.00					3.00	
FINANCIAL STATEMENTS (MIL)			47 48 48 48 51 53 54 57 60 65 68 72 76 79 90 1.02 1.06 1.56					1.52	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			53 70 59 66 88 96 1.14 1.18 1.31 1.51 1.82 2.05 2.16 2.78 3.17 3.23 3.40 3.48					3.50	
QUARTERLY REVENUES (\$ MIL)			3.50 3.62 3.69 3.05 3.05 3.12 3.62 5.67 8.14 5.52 10.43 12.48 13.20 14.66 15.65 17.50 21.38 22.28					23.70	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			39.41 39.59 39.60 31.81 30.36 31.99 33.11 35.40 102.42 104.30 105.45 106.55 107.40 105.52 109.59 111.94 112.00 118.00					125.00	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			21.9 15.2 21.7 15.9 13.5 12.1 11.4 12.5 13.4 13.8 14.0 15.1 13.3 10.3 11.0 13.0 14.0 15.0					12.0	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			1.32 33 1.13 31 88 62 62 72 71 73 76 80 80 69 69 69 94					80	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			6.4% 6.0% 5.9% 6.3% 6.9% 6.2% 5.3% 3.9% 3.7% 2.7% 3.6% 2.7% 2.9% 3.2% 3.5% 3.3%					2.8%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2213.7 3026.1 3784.7 4688.7 5221.0 5476.9 6642.2 5737.8 5991.4 6091.3 6700 7000					7000	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			77.1 100.1 117.5 162.0 176.2 191.8 215.5 258.5 261.0 232.3 265 296					270	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			37.8% 37.7% 36.5% 35.5% 35.5% 33.8% 33.6% 32.6% 29.4% 32.0% 29.9% 30.0% 30.0% 30.0% 30.0% 30.0% 30.0%					30.0%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			3.5% 3.3% 3.1% 3.7% 3.4% 3.4% 3.5% 3.2% 4.5% 4.7% 3.9% 3.9%					3.9%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			77.0% 67.0% 65.0% 55.3% 64.1% 60.7% 58.4% 56.2% 44.0% 51.6% 50.0% 57.0%					53.0%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			21.7% 33.0% 35.0% 41.7% 35.9% 39.3% 41.6% 43.9% 56.0% 48.4% 41.0% 47.0%					47.0%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			1464.3 1728.3 2381.4 2390.1 3054.6 3360.7 3405.0 3630.0 3256.7 4588.0 5000 5000					6200	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			1291.5 1336.8 1781.9 1602.7 2214.7 2397.4 2448.5 2903.5 3053.2 3284.5 3325 3400					2670	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			8.2% 8.3% 6.9% 5.8% 5.8% 7.9% 7.4% 7.9% 8.9% 10.1% 7.4% 8.0% 8.0%					7.8%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			22.9% 17.6% 14.9% 13.2% 16.0% 14.5% 15.2% 16.2% 14.3% 11.9% 8.3% 71.0%					12.0%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			23.8% 17.6% 14.9% 16.2% 16.0% 14.5% 15.2% 16.2% 14.3% 11.9% 8.0% 11.0%					12.0%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			5.7% 5.2% 7.3% 11.5% 9.4% 8.7% 9.5% 10.9% 5.9% 6.0% 3.3% 4.6%					7.3%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			50% 49% 49% 37% 41% 40% 38% 33% 38% 49% 29% 44%					47%	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2009 1775.5 2137 3622 5283 5737.8					5737.8	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2010 1618 2120 3615 2954 5591.4					5591.4	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2011 1765 2161 1105 1039 6291.3					6291.3	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2012 1688 2427 1277 1390 6700					6700	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2013 1875 2875 1625 1225 7590					7590	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2009 1.05 1.45 0.03 0.10 2.36					2.36	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2010 .90 1.43 .03 .02 2.38					2.38	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2011 1.01 1.32 0.06 0.25 2.05					2.05	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2012 .77 1.16 0.06 0.09 1.80					1.80	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2013 1.10 1.40 .10 0.10 2.50					2.50	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2009 .105 .105 .153 .153 .76					.76	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2010 .193 .193 .20 .20 .79					.79	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2011 .20 .20 .25 .25 .90					.90	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2012 .25 .25 .25 .25 1.02					1.02	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			2013 .25 .25 .27					.27	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			Quarterly earnings may not sum due to rounding or change in share count. Next earnings report due late October. (C) Dividends historically paid in early Jan., April, July, and Oct. * Div.					Company's Financial Strength B++ Stock's Price Stability 110 Price Growth Persistence 75 Earnings Per Share 55	
ANNUAL RATES Paid 08-'11 09-'11 10-'11 11-'11 12-'11 13-'11			(A) Fiscal year ends Sept. 30. (B) Divided earnings. Excludes nonrecurr. items: '96, '24, '97, '46, '98, '01, '95, '13, '01, '01, '01, '03, '22, '94, '04, '05, '04, '06, '06, '07, '12.					To subscribe call 1-800-833-0046	

THE RELATIONSHIP BETWEEN RETURN AND MARKET VALUE OF COMMON STOCKS*

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This study examines the empirical relationship between the return and the total market value of NYSE common stocks. It is found that smaller firms have had higher risk adjusted returns, on average, than larger firms. This 'size effect' has been in existence for at least forty years and is evidence that the capital asset pricing model is misspecified. The size effect is not linear in the market value; the main effect occurs for very small firms while there is little difference in return between average sized and large firms. It is not known whether size *per se* is responsible for the effect or whether size is just a proxy for one or more true unknown factors correlated with size.

1. Introduction

The single-period capital asset pricing model (henceforth CAPM) postulates a simple linear relationship between the expected return and the market risk of a security. While the results of direct tests have been inconclusive, recent evidence suggests the existence of additional factors which are relevant for asset pricing. Litzenberger and Ramaswamy (1979) show a significant positive relationship between dividend yield and return of common stocks for the 1936-1977 period. Basu (1977) finds that price-earnings ratios and risk adjusted returns are related. He chooses to interpret his findings as evidence of market inefficiency but as Ball (1978) points out, market efficiency tests are often joint tests of the efficient market hypothesis and a particular equilibrium relationship. Thus, some of the anomalies that have been attributed to a lack of market efficiency might well be the result of a misspecification of the pricing model.

This study contributes another piece to the emerging puzzle. It examines the relationship between the total market value of the common stock of a firm and its return. The results show that, in the 1936-1975 period, the common stock of small firms had, on average, higher risk-adjusted returns

*This study is based on part of my dissertation and was completed while I was at the University of Chicago. I am grateful to my committee, Myron Scholes (chairman), John Gould, Roger Ibbotson, Jonathan Ingersoll, and especially Eugene Fama and Merton Miller, for their advice and comments. I wish to acknowledge the valuable comments of Bill Schwert on earlier drafts of this paper.

than the common stock of large firms. This result will henceforth be referred to as the 'size effect'. Since the results of the study are not based on a particular theoretical equilibrium model, it is not possible to determine conclusively whether market value *per se* matters or whether it is only a proxy for unknown true additional factors correlated with market value. The last section of this paper will address this question in greater detail.

The various methods currently available for the type of empirical research presented in this study are discussed in section 2. Since there is a considerable amount of confusion about their relative merit, more than one technique is used. Section 3 discusses the data. The empirical results are presented in section 4. A discussion of the relationship between the size effect and other factors, as well as some speculative comments on possible explanations of the results, constitute section 5.

2. Methodologies

The empirical tests are based on a generalized asset pricing model which allows the expected return of a common stock to be a function of risk β and an additional factor ϕ , the market value of the equity.¹ A simple linear relationship of the form

$$E(R_i) = \gamma_0 + \gamma_1 \beta_i + \gamma_2 [(\phi_i - \phi_m) / \phi_m], \quad (1)$$

is assumed, where

- $E(R_i)$ = expected return on security i ,
- γ_0 = expected return on a zero-beta portfolio,
- γ_1 = expected market risk premium,
- ϕ_i = market value of security i ,
- ϕ_m = average market value, and
- γ_2 = constant measuring the contribution of ϕ_i to the expected return of a security.

If there is no relationship between ϕ_i and the expected return, i.e., $\gamma_2 = 0$, (1) reduces to the Black (1972) version of the CAPM.

Since expectations are not observable, the parameters in (1) must be estimated from historical data. Several methods are available for this purpose. They all involve the use of pooled cross-sectional and time series regressions to estimate γ_0 , γ_1 , and γ_2 . They differ primarily in (a) the assumption concerning the residual variance of the stock returns (homoscedastic or heteroscedastic in the cross-sectional), and (b) the treatment of the

¹In the empirical tests, ϕ_i and ϕ_m are defined as the market proportion of security i and average market proportion, respectively. The two specifications are, of course, equivalent.

errors-in-variables problem introduced by the use of estimated betas in (1). All methods use a constrained optimization procedure, described in Fama (1976, ch. 9), to generate minimum variance (m.v.) portfolios with mean returns γ_i , $i=0, \dots, 2$. This imposes certain constraints on the portfolio weights, since from (1)

$$E(R_p) \equiv \gamma_i = \gamma_0 \sum_j w_j + \gamma_1 \sum_j w_j \beta_j + \gamma_2 \left[\left(\sum_j w_j \phi_j - \phi_m \sum_j w_j \right) / \phi_m \right], \quad i=0, \dots, 2, \quad (2)$$

where the w_j are the portfolio proportions of each asset j , $j=1, \dots, N$. An examination of (2) shows that $\hat{\gamma}_0$ is the mean return of a standard m.v. portfolio ($\sum w_j = 1$) with zero beta and $\phi_p \equiv \sum w_j \phi_j = \phi_m$ [to make the second and third terms of the right-hand side of (2) vanish]. Similarly, $\hat{\gamma}_1$ is the mean return on a zero-investment m.v. portfolio with beta of one and $\phi_p = 0$, and $\hat{\gamma}_2$ is the mean return on a m.v. zero-investment, zero-beta portfolio with $\phi_p = \phi_m$. As shown by Fama (1976, ch. 9), this constrained optimization can be performed by running a cross-sectional regression of the form

$$R_{it} = \gamma_{0t} + \gamma_{1t} \beta_{it} + \gamma_{2t} [(\phi_{it} - \phi_{mt}) / \phi_{mt}] + \epsilon_{it}, \quad i=1, \dots, N, \quad (3)$$

on a period-by-period basis, using estimated betas β_{it} and allowing for either homoscedastic or heteroscedastic error terms. Invoking the usual stationarity arguments the final estimates of the gammas are calculated as the averages of the T estimates.

One basic approach involves grouping individual securities into portfolios on the basis of market value and security beta, reestimating the relevant parameters (beta, residual variance) of the portfolios in a subsequent period, and finally performing either an ordinary least squares (OLS) regression [Fama and MacBeth (1973)] which assumes homoscedastic errors, or a generalized least squares (GLS) regression [Black and Scholes (1974)] which allows for heteroscedastic errors, on the portfolios in each time period.² Grouping reduces the errors-in-variables problem, but is not very efficient because it does not make use of all information. The errors-in-variables problem should not be a factor as long as the portfolios contain a reasonable number of securities.³

Litzenberger and Ramaswamy (1979) have suggested an alternative method which avoids grouping. They allow for heteroscedastic errors in the cross-section and use the estimates of the standard errors of the security

²Black and Scholes (1974) do not take account of heteroscedasticity, even though their method was designed to do so.

³Black, Jensen and Scholes (1972, p. 116).

betas as estimates of the measurement errors. As Theil (1971, p. 610) has pointed out, this method leads to unbiased maximum likelihood estimators for the gammas as long as the error in the standard error of beta is small and the standard assumptions of the simple errors-in-variables model are met. Thus, it is very important that the diagonal model is the correct specification of the return-generating process, since the residual variance assumes a critical position in this procedure. The Litzenberger-Ramaswamy method is superior from a theoretical viewpoint; however, preliminary work has shown that it leads to serious problems when applied to the model of this study and is not pursued any further.⁴

Instead of estimating equation (3) with data for all securities, it is also possible to construct arbitrage portfolios containing stocks of very large and very small firms, by combining long positions in small firms with short positions in large firms. A simple time series regression is run to determine the difference in risk-adjusted returns between small and large firms. This approach, long familiar in the efficient markets and option pricing literature, has the advantage that no assumptions about the exact functional relationships between market value and expected return need to be made, and it will therefore be used in this study.

3. Data

The sample includes all common stocks quoted on the NYSE for at least five years between 1926 and 1975. Monthly price and return data and the number of shares outstanding at the end of each month are available in the monthly returns file of the Center for Research in Security Prices (CRSP) of the University of Chicago. Three different market indices are used; this is in response to Roll's (1977) critique of empirical tests of the CAPM. Two of the three are pure common stock indices — the CRSP equally- and value-weighted indices. The third is more comprehensive: a value-weighted combination of the CRSP value-weighted index and return data on corporate and government bonds from Ibbotson and Sinquefeld (1977) (henceforth 'market index').⁵ The weights of the components of this index are derived from information on the total market value of corporate and government bonds, in various issues of the *Survey of Current Business* (updated annually) and from the market value of common stocks in the CRSP monthly index file. The stock indices, made up of riskier assets, have both higher returns

⁴If the diagonal model (or market model) is an incomplete specification of the return generating process, the estimate of the standard error of beta is likely to have an upward bias, since the residual variance estimate is too large. The error in the residual variance estimate appears to be related to the second factor. Therefore, the resulting gamma estimates are biased.

⁵No pretense is made that this index is complete; thus, the use of quotation marks. It ignores real estate, foreign assets, etc.; it should be considered a first step toward a comprehensive index. See Ibbotson and Fall (1979).

and higher risk than the bond indices and the 'market index'.⁶ A time series of commercial paper returns is used as the risk-free rate.⁷ While not actually constant through time, its variation is very small when compared to that of the other series, and it is not significantly correlated with any of the three indices used as market proxies.

4. Empirical results

4.1. Results for methods based on grouped data

The portfolio selection procedure used in this study is identical to the one described at length in Black and Scholes (1974). The securities are assigned to one of twenty-five portfolios containing similar numbers of securities, first to one of five on the basis of the market value of the stock, then the securities in each of those five are in turn assigned to one of five portfolios on the basis of their beta. Five years of data are used for the estimation of the security beta; the next five years' data are used for the reestimation of the portfolio betas. Stock price and number of shares outstanding at the end of the five year periods are used for the calculation of the market proportions. The portfolios are updated every year. The cross-sectional regression (3) is then performed in each month and the means of the resulting time series of the gammas could be (and have been in the past) interpreted as the final estimators. However, having used estimated parameters, it is not certain that the series have the theoretical properties, in particular, the hypothesized beta. Black and Scholes (1974, p. 17) suggest that the time series of the gammas be regressed once more on the excess return of the market index. This correction involves running the time series regression (for $\hat{\gamma}_2$)

$$\hat{\gamma}_{2t} - R_{Ft} = \hat{\alpha}_2 + \hat{\beta}_2(R_{mt} - R_{Ft}) + \hat{\epsilon}_{2t} \quad (4)$$

It has been shown earlier that the theoretical β_2 is zero. (4) removes the effects of a non-zero β_2 on the return estimate $\hat{\gamma}_2$ and $\hat{\alpha}_2$ is used as the final estimator for $\hat{\gamma}_2 - R_F$. Similar corrections are performed for γ_0 and γ_1 . The

* Mean monthly returns and standard deviations for the 1926-1975 period are:

	Mean return	Standard deviation
Market index	0.0046	0.0178
CRSP value-weighted index	0.0085	0.0588
CRSP equally-weighted index	0.0120	0.0830
Government bond index	0.0027	0.0157
Corporate bond index	0.0032	0.0142

I am grateful to Myron Scholes for making this series available. The mean monthly return for the 1926-1975 period is 0.0026 and the standard deviation is 0.0021.

derivations of the β_i , $i=0, \dots, 2$, in (4) from their theoretical values also allow us to check whether the grouping procedure is an effective means to eliminate the errors-in-beta problem.

The results are essentially identical for both OLS and GLS and for all three indices. Thus, only one set of results, those for the 'market index' with GLS, is presented in table 1. For each of the gammas, three numbers are reported: the mean of that time series of returns which is relevant for the test of the hypothesis of interest (i.e., whether or not γ_0 and γ_1 are different from the risk-free rate and the risk premium, respectively), the associated t -statistic, and finally, the estimated beta of the time series of the gamma from (4). Note that the means are corrected for the deviation from the theoretical beta as discussed above.

The table shows a significantly negative estimate for γ_2 for the overall time period. Thus, shares of firms with large market values have had smaller returns, on average, than similar small firms. The CAPM appears to be misspecified. The table also shows that γ_0 is different from the risk-free rate. As both Fama (1976, ch. 9) and Roll (1977) have pointed out, if a test does not use the true market portfolio, the Sharpe-Lintner model might be wrongly rejected. The estimates for γ_0 are of the same magnitude as those reported by Fama and MacBeth (1973) and others. The choice of a market index and the econometric method does not affect the results. Thus, at least within the context of this study, the choice of a proxy for the market portfolio does not seem to affect the results and allowing for heteroscedastic disturbances does not lead to significantly more efficient estimators.

Before looking at the results in more detail, some comments on econometric problems are in order. The results in table 1 are based on the 'market index' which is likely to be superior to pure stock indices from a theoretical viewpoint since it includes more assets [Roll (1977)]. This superiority has its price. The actual betas of the time series of the gammas are reported in table 1 in the columns labeled β_i . Recall that the theoretical values of β_0 and β_1 are zero and one, respectively. The standard zero-beta portfolio with return γ_0 contains high beta stocks in short positions and low beta stocks in long positions, while the opposite is the case for the zero-investment portfolio with return γ_1 . The actual betas are all significantly different from the theoretical values. This suggests a regression effect, i.e., the past betas of high beta securities are overestimated and the betas of low beta securities are underestimated.⁸ Past beta is not completely uncorrelated with the error of the current beta and the instrumental variable approach to the error-in-variables problem is not entirely successful.⁹

⁸ There is no such effect for β_2 because that portfolio has both zero beta and zero investment; i.e., net holdings of both high and low beta securities are, on average, zero.

⁹ This result is first documented in Brenner (1976) who examines the original Fama-McBeth (1973) time series of γ_0 .

Table 1
Portfolio estimators for γ_0 , γ_1 and γ_2 based on the 'market index' with generalized least squares estimation.*
 $R_{it} = \hat{\gamma}_0 + \hat{\gamma}_1 \beta_{it} + \hat{\gamma}_2 [(\hat{\phi}_{it} - \hat{\phi}_m) \hat{\phi}_m]$

Period	$\hat{\gamma}_0 - R_f$	$t(\hat{\gamma}_0 - R_f)$	$\hat{\beta}_0$	$\hat{\gamma}_1 - (R_M - R_f)$	$t(\hat{\gamma}_1 - (R_M - R_f))$	$\hat{\beta}_1$	$\hat{\gamma}_2$	$t(\hat{\gamma}_2)$	$\hat{\beta}_2$
1936-1975	0.00450	2.76	0.45	-0.00092	-1.00	0.75	-0.00052	-2.92	0.01
1936-1955	0.00377	1.66	0.43	-0.00060	-0.80	0.80	-0.00043	-2.12	0.01
1956-1975	0.00531	2.22	0.46	-0.00138	-0.82	0.73	-0.00062	-2.09	0.01
1936-1945	0.00121	0.30	0.63	-0.00098	-0.77	0.82	-0.00075	-2.32	-0.01
1946-1955	0.00650	2.89	0.03	-0.00021	-0.26	0.75	-0.00015	-0.65	0.06
1956-1965	0.00494	2.02	0.34	-0.00098	-0.56	0.96	-0.00039	-1.27	-0.01
1966-1975	0.00596	1.43	0.49	-0.00232	-0.80	0.69	-0.00080	-1.55	0.01

* $\hat{\gamma}_0 - R_f$ = mean difference between return on zero beta portfolio and risk-free rate. $\hat{\gamma}_1 - (R_M - R_f)$ = mean difference between actual risk premium ($\hat{\gamma}_1$) and risk premium stipulated by Sharpe-Lintner model ($R_M - R_f$). $\hat{\gamma}_2$ = size premium. $\hat{\beta}_i$ = actual estimated market risk of $\hat{\gamma}_i$ (theoretical values: $\beta_0 = 0$, $\beta_1 = 1$, $\beta_2 = 0$); all β_0 , β_1 are significantly different from the theoretical values. $t(\cdot)$ = t-statistic.

R.W. Hanz, Return and firm size

The deviations from the theoretical betas are largest for the 'market index', smaller for the CRSP value-weighted index, and smallest for the CRSP equally-weighted index. This is due to two factors: first, even if the true covariance structure is stationary, betas with respect to a value-weighted index change whenever the weights change, since the weighted average of the betas is constrained to be equal to one. Second, the betas and their standard errors with respect to the 'market index' are much larger than for the stock indices (a typical stock beta is between two and three), which leads to larger deviations -- a kind of 'leverage' effect. Thus, the results in table 1 show that the final correction for the deviation of β_0 and β_1 from their theoretical values is of crucial importance for market proxies with changing weights.

Estimated portfolio betas and portfolio market proportions are (negatively) correlated. It is therefore possible that the errors in beta induce an error in the coefficient of the market proportion. According to Levi (1973), the probability limit of $\hat{\gamma}_1$ in the standard errors-in-the-variables model is

$$\text{plim } \hat{\gamma}_1 = \gamma_1 / (1 + (\sigma_u^2 \cdot \sigma_2^2) / D) < \gamma_1,$$

with

$$D = (\sigma_1^2 + \sigma_u^2) \cdot \sigma_2^2 - \sigma_{12}^2 > 0,$$

where σ_1^2 , σ_2^2 are the variances of the true factors β and ϕ , respectively, σ_u^2 is the variance of the error in beta and σ_{12} is the covariance of β and ϕ . Thus, the bias in $\hat{\gamma}_1$ is unambiguously towards zero for positive γ_1 . The probability limit of $\hat{\gamma}_2 - \gamma_2$ is [Levi (1973)]

$$\text{plim } (\hat{\gamma}_2 - \gamma_2) = (\sigma_u^2 \cdot \sigma_{12} \cdot \gamma_1) / D.$$

We find that the bias in $\hat{\gamma}_2$ depends on the covariance between β and ϕ and the sign of γ_1 . If σ_{12} has the same sign as the covariance between β and ϕ , i.e., $\sigma_{12} < 0$, and if $\gamma_1 > 0$, then $\text{plim } (\hat{\gamma}_2 - \gamma_2) < 0$, i.e., $\text{plim } \hat{\gamma}_2 < \gamma_2$. If the grouping procedure is not successful in removing the error in beta, then it is likely that the reported $\hat{\gamma}_2$ overstates the true magnitude of the size effect. If this was a serious problem in this study, the results for the different market indices should reflect the problem. In particular, using the equally-weighted stock index should then lead to the smallest size effect since, as was pointed out earlier, the error in beta problem is apparently less serious for that kind of index. In fact, we find that there is little difference between the estimates.¹⁰

¹⁰For the overall time period, $\hat{\gamma}_2$ with the equally-weighted CRSP index is -0.00044, with the value weighted CRSP index -0.00044 as well as opposed to the -0.00052 for the 'market index' reported in table 1. The estimated betas of $\hat{\gamma}_0$ and $\hat{\gamma}_1$, which reflect the degree of the error in beta problems are 0.07 and 0.91, respectively, for the equally-weighted CRSP index and 0.13 and 0.87 for the value-weighted CRSP index.

Thus, it does not appear that the size effect is just a proxy for the unobservable true beta even though the market proportion and the beta of securities are negatively correlated.

The correlation coefficient between the mean market values of the twenty-five portfolios and their betas is significantly negative, which might have introduced a multicollinearity problem. One of its possible consequences is coefficients that are very sensitive to addition or deletion of data. This effect does not appear to occur in this case: the results do not change significantly when five portfolios are dropped from the sample. Revising the grouping procedure — ranking on the basis of beta first, then ranking on the basis of market proportion — also does not lead to substantially different results.

4.2. A closer look at the results

An additional factor relevant for asset pricing — the market value of the equity of a firm — has been found. The results are based on a linear model. Linearity was assumed only for convenience and there is no theoretical reason (since there is no model) why the relationship should be linear. If it is nonlinear, the particular form of the relationship might give us a starting point for the discussion of possible causes of the size effect in the next section. An analysis of the residuals of the twenty-five portfolios is the easiest way to look at the linearity question. For each month t , the estimated residual return

$$\hat{v}_{it} = R_{it} - \hat{\gamma}_{0t} - \hat{\gamma}_{1t}\beta_{it} - \hat{\gamma}_{2t}[(\phi_{it} - \phi_{mt})/\phi_{mt}], \quad i = 1, \dots, 25, \quad (5)$$

is calculated for all portfolios. The mean residuals over the forty-five year sample period are plotted as a function of the mean market proportion in fig. 1. Since the distribution of the market proportions is very skewed, a logarithmic scale is used. The solid line connects the mean residual returns of each size group. The numbers identify the individual portfolios within each group according to beta, '1' being the one with the largest beta, '5' being the one with the smallest beta.

The figure shows clearly that the linear model is misspecified.¹¹ The residuals are not randomly distributed around zero. The residuals of the portfolios containing the smallest firms are all positive; the remaining ones are close to zero. As a consequence, it is impossible to use $\hat{\gamma}_2$ as a simple size premium in the cross-section. The plot also shows, however, that the misspecification is not responsible for the significance of $\hat{\gamma}_2$ since the linear model underestimates the true size effect present for very small firms. To illustrate this point, the five portfolios containing the smaller firms are

¹¹The nonlinearity cannot be eliminated by defining ϕ , as the log of the market proportion.

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deleted from the sample and the parameters reestimated. The results, summarized in table 2, show that the $\hat{\gamma}_2$ remain essentially the same. The relationship is still not linear; the new $\hat{\gamma}_2$ still cannot be used as a size premium.

Fig. 1 suggests that the main effect occurs for very small firms. Further support for this conclusion can be obtained from a simple test. We can regress the returns of the twenty-five portfolios in each result on beta alone and examine the residuals. The regression is misspecified and the residuals contain information about the size effect. Fig. 2 shows the plot of those residuals in the same format as fig. 1. The smallest firms have, on average, very large unexplained mean returns. There is no significant difference between the residuals of the remaining portfolios.

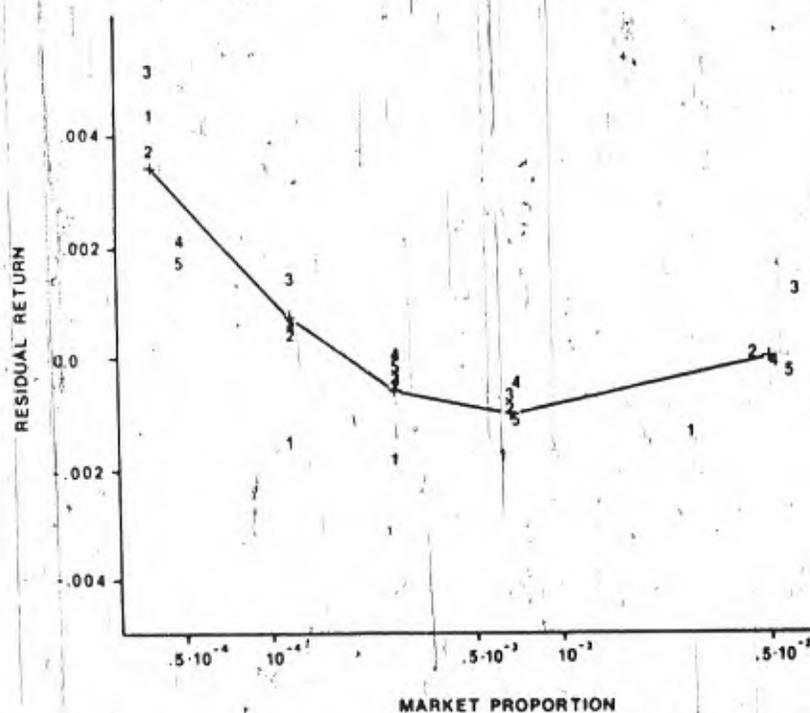


Fig. 1. Mean residual returns of portfolios (1936-1975) with equally-weighted CRSP index as market proxy. The residual is calculated with the three-factor model [eq. (3)]. The numbers 1, ..., 5 represent the mean residual return for the five portfolios within each size group (1: portfolio with largest beta, ..., 5: portfolio with smallest beta). + represents the mean of the mean residuals of the five portfolios with similar market values.

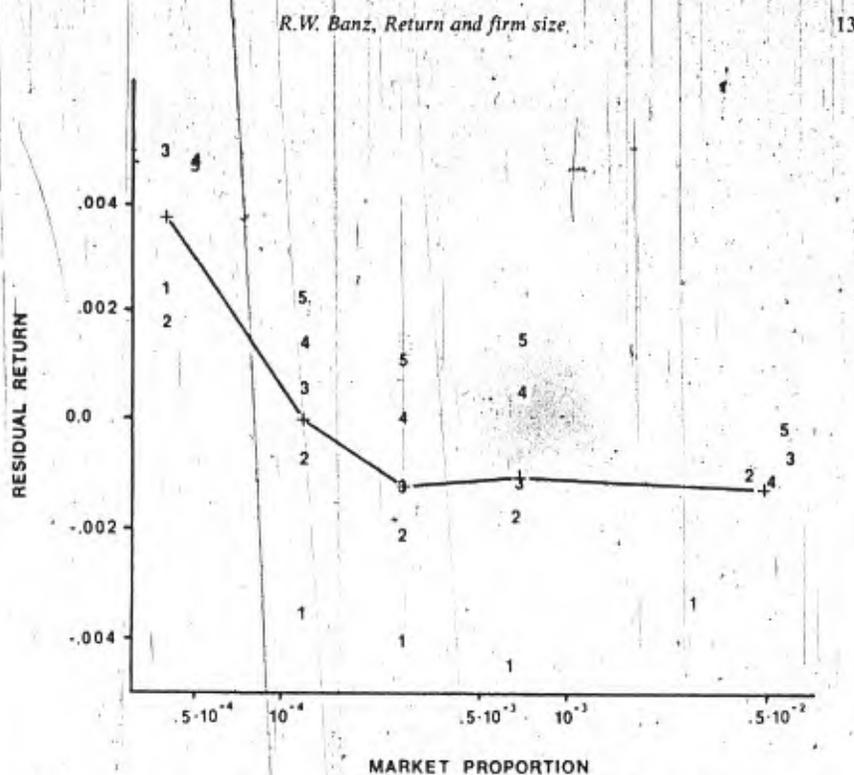


Fig. 2. Mean residual returns of portfolios (1936-1975) with equally-weighted CRSP index as market proxy. The residual is calculated with the two-factor model ($\hat{e}_{it} = R_{it} - \hat{\gamma}_{0t} - \hat{\gamma}_{1t}\beta_{it}$). The symbols are as defined for fig. 1.

4.3. 'Arbitrage' portfolio returns

One important empirical question still remains: How important is the size effect from a practical point of view? Fig. 2 suggests that the difference in returns between the smallest firms and the remaining ones is, on average, about 0.4 percent per month. A more dramatic result can be obtained when the securities are chosen solely on the basis of their market value.

As an illustration, consider putting equal dollar amounts into portfolios containing the smallest, largest and median-sized firms at the beginning of a year. These portfolios are to be equally weighted and contain, say, ten, twenty or fifty securities. They are to be held for five years and are rebalanced every month. They are levered or unlevered to have the same beta. We are then interested in the differences in their returns,

$$R_{1t} = R_{st} - R_{lt}, \quad R_{2t} = R_{st} - R_{mt}, \quad R_{3t} = R_{mt} - R_{lt}, \quad (6)$$

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Table 2
Portfolio estimators for γ_2 for all 25 portfolios and for 20 portfolios (portfolios containing smallest firms deleted) based on CRSP equally weighted index with generalized least-squares estimation.*

Period	Size premium $\hat{\gamma}_2$ with	
	25 portfolios	20 portfolios
1936-1975	-0.00044 (-2.42)	-0.00043 (-2.54)
1936-1955	-0.00037 (-1.72)	-0.00041 (-1.88)
1956-1975	-0.00056 (-1.91)	-0.00050 (-1.91)
1936-1945	-0.00085 (-2.81)	-0.00083 (-2.48)
1946-1955	0.00003 (0.12)	-0.00003 (-0.13)
1956-1965	-0.00023 (-0.81)	-0.00017 (-0.65)
1966-1975	-0.00091 (-1.78)	-0.00085 (-1.84)

*t-statistic in parentheses.

where R_{st} , R_{mt} and R_{lt} are the returns on the portfolios containing the smallest, median-sized and largest firms at portfolio formation time (and $R_{1t} = R_{2t} + R_{3t}$). The procedure involves (a) the calculation of the three differences in raw returns in each month and (b) running time series regressions of the differences on the excess returns of the market proxy. The intercept terms of these regressions are then interpreted as the \bar{R}_i , $i=1, \dots, 3$. Thus, the differences can be interpreted as 'arbitrage' returns, since, e.g., R_{1t} is the return obtained from holding the smallest firms long and the largest firms short, representing zero net investment in a zero-beta portfolio.¹² Simple equally weighted portfolios are used rather than more sophisticated minimum variance portfolios to demonstrate that the size effect is not due to some quirk in the covariance matrix.

Table 3 shows that the results of the earlier tests are fully confirmed. \bar{R}_2 , the difference in returns between very small firms and median-size firms, is typically considerably larger than \bar{R}_3 , the difference in returns between median-sized and very large firms. The average excess return from holding very small firms long and very large firms short is, on average, 1.52 percent

¹²No *ex post* sample bias is introduced, since monthly rebalancing includes stocks delisted during the five years. Thus, the portfolio size is generally accurate only for the first month of each period.

Table 3
Mean monthly returns on 'arbitrage' portfolios*
 $R_j - R_i = \alpha_i + \beta_i(R_m - R_f)$

α_1
 α_2
 α_3
 α_4

Table 3
Mean monthly returns on 'arbitrage' portfolios.^a
 $R_j - R_k = \hat{\alpha}_i + \hat{\beta}_i(R_m - R_f)$

	$\hat{\alpha}_1^b$			$\hat{\alpha}_2^c$			$\hat{\alpha}_3^d$		
	<i>n</i> =10	<i>n</i> =20	<i>n</i> =50	<i>n</i> =10	<i>n</i> =20	<i>n</i> =50	<i>n</i> =10	<i>n</i> =20	<i>n</i> =50
<i>Overall period</i>									
1931-1975	0.0152 (2.99)	0.0148 (3.53)	0.0101 (3.07)	0.0130 (2.90)	0.0124 (3.56)	0.0089 (3.64)	0.0021 (1.06)	0.0024 (1.41)	0.0012 (0.85)
<i>Five-year subperiods</i>									
1931-1935	0.0589 (2.25)	0.0597 (2.81)	0.0427 (2.35)	0.0462 (1.92)	0.0462 (2.55)	0.0326 (2.46)	0.0127 (1.09)	0.0134 (1.49)	0.0101 (1.42)
1936-1940	0.0201 (0.82)	0.0182 (0.97)	0.0089 (0.67)	0.0118 (0.55)	0.0145 (0.90)	0.0064 (0.65)	0.0084 (1.20)	0.0037 (0.62)	0.0025 (0.49)
1941-1945	0.0430 (2.29)	0.0408 (2.46)	0.0269 (2.17)	0.0381 (2.29)	0.0367 (2.54)	0.0228 (2.02)	0.0049 (1.25)	0.0038 (1.09)	0.0041 (1.68)
1946-1950	-0.0060 (-1.17)	-0.0046 (-0.97)	-0.0036 (-0.97)	-0.0058 (-1.03)	-0.0059 (-1.29)	-0.0029 (-0.83)	-0.0002 (-0.07)	-0.0104 (-0.50)	-0.0007 (-0.38)
1951-1955	-0.0067 (-0.89)	-0.0011 (-0.21)	0.0013 (0.32)	-0.0004 (-0.07)	0.0026 (0.72)	0.0010 (0.39)	-0.0062 (-1.29)	-0.0037 (-0.99)	0.0003 (0.11)
1956-1960	0.0039 (0.67)	0.0008 (0.15)	0.0037 (0.89)	0.0007 (0.14)	-0.0027 (-0.64)	0.0011 (0.45)	0.0031 (0.88)	0.0035 (1.16)	0.0026 (0.97)
1961-1965	0.0131 (1.38)	0.0060 (0.67)	0.0024 (0.31)	0.0096 (1.11)	0.0046 (0.72)	0.0036 (0.77)	0.0035 (0.59)	0.0014 (0.24)	-0.0012 (-0.24)
1966-1970	0.0121 (1.64)	0.0117 (2.26)	0.0077 (1.91)	0.0129 (1.93)	0.0110 (2.71)	0.0071 (2.43)	0.0008 (0.23)	0.0007 (0.22)	-0.0006 (0.27)
1971-1975	0.0063 (0.60)	0.0108 (1.23)	0.0098 (1.45)	0.0033 (0.39)	0.0077 (1.18)	0.0083 (1.79)	0.0030 (0.64)	0.0031 (0.72)	0.0015 (0.43)

^aEqually-weighted portfolios with *n* securities, adjusted for differences in market risk with respect to CRSP value-weighted index, *t*-statistics in parentheses.

^bSmall firms held long, large firms held short.

^cSmall firms held long, median-size firms held short.

^dMedian-size firms held long, large firms held short.

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per month or 19.8 percent on an annualized basis. This strategy, which suggests very large 'profit opportunities', leaves the investor with a poorly diversified portfolio. A portfolio of small firms has typically much larger residual risk with respect to a value-weighted index than a portfolio of very large firms with the same number of securities [Banz (1978, ch. 3)]. Since the fifty largest firms make up more than 25 percent of the total market value of NYSE stocks, it is not surprising that a larger part of the variation of the return of a portfolio of those large firms can be explained by its relation with the value-weighted market index. Table 3 also shows that the strategy would not have been successful in every five year subperiod. Nevertheless, the magnitude of the size effect during the past forty-five years is such that it is of more than just academic interest.

5. Conclusions

The evidence presented in this study suggests that the CAPM is misspecified. On average, small NYSE firms have had significantly larger risk adjusted returns than large NYSE firms over a forty year period. This size effect is not linear in the market proportion (or the log of the market proportion) but is most pronounced for the smallest firms in the sample. The effect is also not very stable through time. An analysis of the ten year subperiods show substantial differences in the magnitude of the coefficient of the size factor (table 1).

There is no theoretical foundation for such an effect. We do not even know whether the factor is size itself or whether size is just a proxy for one or more true but unknown factors correlated with size. It is possible, however, to offer some conjectures and even discuss some factors for which size is suspected to proxy. Recent work by Reinganum (1980) has eliminated one obvious candidate: the price-earnings (P/E) ratio.¹³ He finds that the P/E -effect, as reported by Basu (1977), disappears for both NYSE and AMEX stocks when he controls for size but that there is a significant size effect even when he controls for the P/E -ratio, i.e., the P/E -ratio effect is a proxy for the size effect and not vice versa. Stattman (1980), who found a significant negative relationship between the ratio of book value and market value of equity and its return, also reports that this relationship is just a proxy for the size effect. Naturally, a large number of possible factors remain to be tested.¹⁴ But the Reinganum results point out a potential problem with some of the existing negative evidence of the efficient market hypothesis. Basu believed to have identified a market inefficiency but his P/E -effect is

¹³The average correlation coefficient between P/E -ratio and market value is only 0.16 for individual stocks for thirty-eight quarters ending in 1978. But for the portfolios formed on the basis of P/E -ratio, it rises to 0.82. Recall that Basu (1977) used ten portfolios in his study.

¹⁴E.g., debt-equity ratios, skewness of the return distribution [Kraus and Litzenberger (1976)].

just a proxy for the size effect. Given its longevity, it is not likely that it is due to a market inefficiency but it is rather evidence of a pricing model misspecification. To the extent that tests of market efficiency use data of firms of different sizes and are based on the CAPM, their results might be at least contaminated by the size effect.

One possible explanation involving the size of the firm directly is based on a model by Klein and Bawa (1977). They find that if insufficient information is available about a subset of securities, investors will not hold these securities because of estimation risk, i.e., uncertainty about the true parameters of the return distribution. If investors differ in the amount of information available, they will limit their diversification to different subsets of all securities in the market.¹⁵ It is likely that the amount of information generated is related to the size of the firm. Therefore, many investors would not desire to hold the common stock of very small firms. I have shown elsewhere [Banz (1978, ch. 2)] that securities sought by only a subset of the investors have higher risk-adjusted returns than those considered by all investors. Thus, lack of information about small firms leads to limited diversification and therefore to higher returns for the 'undesirable' stocks of small firms.¹⁶ While this informal model is consistent with the empirical results, it is, nevertheless, just conjecture.

To summarize, the size effect exists but it is not at all clear why it exists. Until we find an answer, it should be interpreted with caution. It might be tempting to use the size effect, e.g., as the basis for a theory of mergers — large firms are able to pay a premium for the stock of small firms since they will be able to discount the same cash flows at a smaller discount rate. Naturally, this might turn out to be complete nonsense if size were to be shown to be just a proxy.

The preceding discussion suggests that the results of this study leave many questions unanswered. Further research should consider the relationship between size and other factors such as the dividend yield effect, and the tests should be expanded to include OTC stocks as well.

¹⁵Klein and Bawa (1977, p. 102).

¹⁶A similar result can be obtained with the introduction of fixed holding costs which lead to limited diversification as well. See Brennan (1975), Banz (1978, ch. 2) and Mayshar (1979).

References

- Ball, Ray, 1978, Anomalies in relationships between securities' yields and yield surrogates, *Journal of Financial Economics* 6, 103-126.
- Banz, Rolf W., 1978, Limited diversification and market equilibrium: An empirical analysis, Ph.D. dissertation (University of Chicago, Chicago, IL).
- Basu, S., 1977, Investment performance of common stocks in relation to their price-earnings ratios: A test of market efficiency, *Journal of Finance* 32, June, 663-682.

- Black, Fischer, 1972, Capital market equilibrium with restricted borrowing, *Journal of Business* 45, July, 444-454.
- Black, Fischer, and Myron Scholes, 1974, The effects of dividend yield and dividend policy on common stock prices and returns, *Journal of Financial Economics* 1, May, 1-22.
- Black, Fischer, Michael C. Jensen and Myron Scholes, 1972, The capital asset pricing model: Some empirical tests, in: M.C. Jensen, ed., *Studies in the theory of capital markets* (Praeger, New York) 79-121.
- Brennan, Michael J., 1975, The optimal number of securities in a risky asset portfolio when there are fixed costs of transacting: Theory and some empirical evidence, *Journal of Financial and Quantitative Analysis* 10, Sept., 483-496.
- Brenner, Menachem, 1976, A note on risk, return and equilibrium: Empirical tests, *Journal of Political Economy* 84, 407-409.
- Fama, Eugene F., 1976, *Foundations of finance* (Basic Books, New York).
- Fama, Eugene F. and James D. MacBeth, 1973, Risk return and equilibrium: Some empirical tests, *Journal of Political Economy* 71, May-June, 607-636.
- Ibbotson, Roger G. and Carol L. Fall, 1979, The United States market wealth portfolio, *Journal of Portfolio Management* 6, 82-92.
- Ibbotson, Roger G. and Rex A. Sinquefeld, 1977, *Stocks, bonds, bills and inflation: The past (1926-1976) and the future (1977-2000)* (Financial Analysis Research Foundation).
- Klein, Roger W. and Vijay S. Bawa, 1977, The effect of limited information and estimation risk on optimal portfolio diversification, *Journal of Financial Economics* 5, Aug., 89-111.
- Kraus, Alan and Robert H. Litzenberger, 1976, Skewness preference and the valuation of risk assets, *Journal of Finance* 31, 1085-1100.
- Levi, Maurice D., 1973, Errors in the variables bias in the presence of correctly measured variables, *Econometrica* 41, Sept., 985-986.
- Litzenberger, Robert H. and Krishna Ramaswamy, 1979, The effect of personal taxes and dividends on capital asset prices: Theory, and empirical evidence, *Journal of Financial Economics* 7, June, 163-195.
- Mayshar, Joram, 1979, Transaction costs in a model of capital market equilibrium, *Journal of Political Economy* 87, 673-700.
- Reinganum, Marc R., 1980, Misspecification of capital asset pricing: Empirical anomalies based on earnings yields and market values, *Journal of Financial Economics*, this issue.
- Roll, Richard, 1977, A critique of the asset pricing theory's tests: Part I, *Journal of Financial Economics* 4, Jan., 120-176.
- Stattman, Dennis, 1980, Book values and expected stock returns, Unpublished M.B.A. honors paper (University of Chicago, Chicago, IL).
- Theil, Henri, 1971, *Principles of econometrics* (Wiley, New York).
- U.S. Department of Commerce, Office of Business Economics, 1969, 1970, *Survey of current business* 49, May, 11-12; 50, May, 14.

Risk, Return, and Equilibrium: Empirical Tests

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This paper tests the relationship between average return and risk for New York Stock Exchange common stocks. The theoretical basis of the tests is the “two-parameter” portfolio model and models of market equilibrium derived from the two-parameter portfolio model. We cannot reject the hypothesis of these models that the pricing of common stocks reflects the attempts of risk-averse investors to hold portfolios that are “efficient” in terms of expected value and dispersion of return. Moreover, the observed “fair game” properties of the coefficients and residuals of the risk-return regressions are consistent with an “efficient capital market”—that is, a market where prices of securities fully reflect available information.

I. Theoretical Background

In the two-parameter portfolio model of Tobin (1958), Markowitz (1959), and Fama (1965*b*), the capital market is assumed to be perfect in the sense that investors are price takers and there are neither transactions costs nor information costs. Distributions of one-period percentage returns on all assets and portfolios are assumed to be normal or to conform to some other two-parameter member of the symmetric stable class. Investors are assumed to be risk averse and to behave as if they choose among portfolios on the basis of maximum expected utility. A perfect capital market, investor risk aversion, and two-parameter return distributions imply the important “efficient set theorem”: The optimal portfolio for any investor must be efficient in the sense that no other portfolio with the same or higher expected return has lower dispersion of return.¹

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¹ Although the choice of dispersion parameter is arbitrary, the standard deviation

In the portfolio model the investor looks at individual assets only in terms of their contributions to the expected value and dispersion, or risk, of his portfolio return. With normal return distributions the risk of portfolio p is measured by the standard deviation, $\sigma(\tilde{R}_p)$, of its return, \tilde{R}_p ,² and the risk of an asset for an investor who holds p is the contribution of the asset to $\sigma(\tilde{R}_p)$. If x_{ip} is the proportion of portfolio funds invested in asset i , $\sigma_{ij} = \text{cov}(\tilde{R}_i, \tilde{R}_j)$ is the covariance between the returns on assets i and j , and N is the number of assets, then

$$\sigma(\tilde{R}_p) = \sum_{i=1}^N x_{ip} \left[\frac{\sum_{j=1}^N x_{jp} \sigma_{ij}}{\sigma(\tilde{R}_p)} \right] = \sum_{i=1}^N x_{ip} \frac{\text{cov}(\tilde{R}_i, \tilde{R}_p)}{\sigma(\tilde{R}_p)}.$$

Thus, the contribution of asset i to $\sigma(\tilde{R}_p)$ —that is, the risk of asset i in the portfolio p —is proportional to

$$\sum_{j=1}^N x_{jp} \sigma_{ij} / \sigma(\tilde{R}_p) = \text{cov}(\tilde{R}_i, \tilde{R}_p) / \sigma(\tilde{R}_p).$$

Note that since the weights x_{jp} vary from portfolio to portfolio, the risk of an asset is different for different portfolios.

For an individual investor the relationship between the risk of an asset and its expected return is implied by the fact that the investor's optimal portfolio is efficient. Thus, if he chooses the portfolio m , the fact that m is efficient means that the weights x_{im} , $i = 1, 2, \dots, N$, maximize expected portfolio return

$$E(\tilde{R}_m) = \sum_{i=1}^N x_{im} E(\tilde{R}_i),$$

subject to the constraints

is common when return distributions are assumed to be normal, whereas an interfractile range is usually suggested when returns are generated from some other symmetric stable distribution.

It is well known that the mean-standard deviation version of the two-parameter portfolio model can be derived from the assumption that investors have quadratic utility functions. But the problems with this approach are also well known. In any case, the empirical evidence of Fama (1965a), Blume (1970), Roll (1970), K. Miller (1971), and Officer (1971) provides support for the "distribution" approach to the model. For a discussion of the issues and a detailed treatment of the two-parameter model, see Fama and Miller (1972, chaps. 6-8).

We also concentrate on the special case of the two-parameter model obtained with the assumption of normally distributed returns. As shown in Fama (1971) or Fama and Miller (1972, chap. 7), the important testable implications of the general symmetric stable model are the same as those of the normal model.

² Tildes (\sim) are used to denote random variables. And the one-period percentage return is most often referred to just as the return.

$$\sigma(\tilde{R}_p) = \sigma(\tilde{R}_m) \quad \text{and} \quad \sum_{i=1}^N x_{im} = 1.$$

Lagrangian methods can then be used to show that the weights x_{jm} must be chosen in such a way that for any asset i in m

$$E(\tilde{R}_i) - E(\tilde{R}_m) = S_m \left[\frac{\sum_{j=1}^N x_{jm} \sigma_{ij}}{\sigma(\tilde{R}_m)} - \sigma(\tilde{R}_m) \right], \quad (1)$$

where S_m is the rate of change of $E(\tilde{R}_p)$ with respect to a change in $\sigma(\tilde{R}_p)$ at the point on the efficient set corresponding to portfolio m . If there are nonnegativity constraints on the weights (that is, if short selling is prohibited), then (1) only holds for assets i such that $x_{im} > 0$.

Although equation (1) is just a condition on the weights x_{jm} that is required for portfolio efficiency, it can be interpreted as the relationship between the risk of asset i in portfolio m and the expected return on the asset. The equation says that the difference between the expected return on the asset and the expected return on the portfolio is proportional to the difference between the risk of the asset and the risk of the portfolio. The proportionality factor is S_m , the slope of the efficient set at the point corresponding to the portfolio m . And the risk of the asset is its contribution to total portfolio risk, $\sigma(\tilde{R}_m)$.

II. Testable Implications

Suppose now that we posit a market of risk-averse investors who make portfolio decisions period by period according to the two-parameter model.³ We are concerned with determining what this implies for observable properties of security and portfolio returns. We consider two categories of implications. First, there are conditions on expected returns that are implied by the fact that in a two-parameter world investors hold efficient portfolios. Second, there are conditions on the behavior of returns through time that are implied by the assumption of the two-parameter model that the capital market is perfect or frictionless in the sense that there are neither transactions costs nor information costs.

A. Expected Returns

The implications of the two-parameter model for expected returns derive from the efficiency condition or expected return-risk relationship of equation (1). First, it is convenient to rewrite (1) as

³ A multiperiod version of the two-parameter model is in Fama (1970a) or Fama and Miller (1972, chap. 8).

$$E(\tilde{R}_i) = [E(\tilde{R}_m) - S_m \sigma(\tilde{R}_m)] + S_m \sigma(\tilde{R}_m) \beta_i, \quad (2)$$

where

$$\beta_i \equiv \frac{\text{cov}(\tilde{R}_i, \tilde{R}_m)}{\sigma^2(\tilde{R}_m)} = \frac{\sum_{j=1}^N x_{jm} \sigma_{ij}}{\sigma^2(\tilde{R}_m)} = \frac{\text{cov}(\tilde{R}_i, \tilde{R}_m) / \sigma(\tilde{R}_m)}{\sigma(\tilde{R}_m)}. \quad (3)$$

The parameter β_i can be interpreted as the risk of asset i in the portfolio m , measured relative to $\sigma(\tilde{R}_m)$, the total risk of m . The intercept in (2),

$$E(\tilde{R}_0) \equiv E(\tilde{R}_m) - S_m \sigma(\tilde{R}_m), \quad (4)$$

is the expected return on a security whose return is uncorrelated with \tilde{R}_m —that is, a zero- β security. Since $\beta = 0$ implies that a security contributes nothing to $\sigma(\tilde{R}_m)$, it is appropriate to say that it is riskless in this portfolio. It is well to note from (3), however, that since $x_{im} \sigma_{ii} = x_{im} \sigma^2(\tilde{R}_i)$ is just one of the N terms in β_i , $\beta_i = 0$ does not imply that security i has zero variance of return.

From (4), it follows that

$$S_m = \frac{E(\tilde{R}_m) - E(\tilde{R}_0)}{\sigma(\tilde{R}_m)}, \quad (5)$$

so that (2) can be rewritten

$$E(\tilde{R}_i) = E(\tilde{R}_0) + [E(\tilde{R}_m) - E(\tilde{R}_0)] \beta_i. \quad (6)$$

In words, the expected return on security i is $E(\tilde{R}_0)$, the expected return on a security that is riskless in the portfolio m , plus a risk premium that is β_i times the difference between $E(\tilde{R}_m)$ and $E(\tilde{R}_0)$.

Equation (6) has three testable implications: (C1) The relationship between the expected return on a security and its risk in any efficient portfolio m is linear. (C2) β_i is a complete measure of the risk of security i in the efficient portfolio m ; no other measure of the risk of i appears in (6). (C3) In a market of risk-averse investors, higher risk should be associated with higher expected return; that is, $E(\tilde{R}_m) - E(\tilde{R}_0) > 0$.

The importance of condition C3 is obvious. The importance of C1 and C2 should become clear as the discussion proceeds. At this point suffice it to say that if C1 and C2 do not hold, market returns do not reflect the attempts of investors to hold efficient portfolios: Some assets are systematically underpriced or overpriced relative to what is implied by the expected return-risk or efficiency equation (6).

B. Market Equilibrium and the Efficiency of the Market Portfolio

To test conditions C1–C3 we must identify some efficient portfolio m . This in turn requires specification of the characteristic of market equi-

librium when investors make portfolio decisions according to the two-parameter model.

Assume again that the capital market is perfect. In addition, suppose that from the information available without cost all investors derive the same and correct assessment of the distribution of the future value of any asset or portfolio—an assumption usually called “homogeneous expectations.” Finally, assume that short selling of all assets is allowed. Then Black (1972) has shown that in a market equilibrium, the so-called market portfolio, defined by the weights

$$x_{im} \equiv \frac{\text{total market value of all units of asset } i}{\text{total market value of all assets}},$$

is always efficient.

Since it contains all assets in positive amounts, the market portfolio is a convenient reference point for testing the expected return-risk conditions C1–C3 of the two-parameter model. And the homogeneous-expectations assumption implies a correspondence between ex ante assessments of return distributions and distributions of ex post returns that is also required for meaningful tests of these three hypotheses.

C. A Stochastic Model for Returns

Equation (6) is in terms of expected returns. But its implications must be tested with data on period-by-period security and portfolio returns. We wish to choose a model of period-by-period returns that allows us to use observed average returns to test the expected-return conditions C1–C3, but one that is nevertheless as general as possible. We suggest the following stochastic generalization of (6):

$$\tilde{R}_{it} = \tilde{\gamma}_{0t} + \tilde{\gamma}_{1t}\beta_i + \tilde{\gamma}_{2t}\beta_i^2 + \tilde{\gamma}_{3t}s_i + \tilde{\eta}_{it}. \quad (7)$$

The subscript t refers to period t , so that \tilde{R}_{it} is the one-period percentage return on security i from $t - 1$ to t . Equation (7) allows $\tilde{\gamma}_{0t}$ and $\tilde{\gamma}_{1t}$ to vary stochastically from period to period. The hypothesis of condition C3 is that the expected value of the risk premium $\tilde{\gamma}_{1t}$, which is the slope $[E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$ in (6), is positive—that is, $E(\tilde{\gamma}_{1t}) = E(\tilde{R}_{mt}) - E(\tilde{R}_{0t}) > 0$.

The variable β_i^2 is included in (7) to test linearity. The hypothesis of condition C1 is $E(\tilde{\gamma}_{2t}) = 0$, although $\tilde{\gamma}_{2t}$ is also allowed to vary stochastically from period to period. Similar statements apply to the term involving s_i in (7), which is meant to be some measure of the risk of security i that is not deterministically related to β_i . The hypothesis of condition C2 is $E(\tilde{\gamma}_{3t}) = 0$, but $\tilde{\gamma}_{3t}$ can vary stochastically through time.

The disturbance $\tilde{\eta}_{it}$ is assumed to have zero mean and to be independent of all other variables in (7). If all portfolio return distributions are to be

normal (or symmetric stable), then the variables $\tilde{\eta}_{it}$, $\tilde{\gamma}_{0t}$, $\tilde{\gamma}_{1t}$, $\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{3t}$ must have a multivariate normal (or symmetric stable) distribution.

D. Capital Market Efficiency: The Behavior of Returns through Time

C1–C3 are conditions on expected returns and risk that are implied by the two-parameter model. But the model, and especially the underlying assumption of a perfect market, implies a capital market that is efficient in the sense that prices at every point in time fully reflect available information. This use of the word efficient is, of course, not to be confused with portfolio efficiency. The terminology, if a bit unfortunate, is at least standard.

Market efficiency in combination with condition C1 requires that scrutiny of the time series of the stochastic nonlinearity coefficient $\tilde{\gamma}_{2t}$ does not lead to nonzero estimates of expected future values of $\tilde{\gamma}_{2t}$. Formally, $\tilde{\gamma}_{2t}$ must be a fair game. In practical terms, although nonlinearities are observed ex post, because $\tilde{\gamma}_{2t}$ is a fair game, it is always appropriate for the investor to act ex ante under the presumption that the two-parameter model, as summarized by (6), is valid. That is, in his portfolio decisions he always assumes that there is a linear relationship between the risk of a security and its expected return. Likewise, market efficiency in the two-parameter model requires that the non- β risk coefficient $\tilde{\gamma}_{3t}$ and the time series of return disturbances $\tilde{\eta}_{it}$ are fair games. And the fair-game hypothesis also applies to the time series of $\tilde{\gamma}_{1t} - [E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$, the difference between the risk premium for period t and its expected value.

In the terminology of Fama (1970*b*), these are “weak-form” propositions about capital market efficiency for a market where expected returns are generated by the two-parameter model. The propositions are weak since they are only concerned with whether prices fully reflect any information in the time series of past returns. “Strong-form” tests would be concerned with the speed-of-adjustment of prices to all available information.

E. Market Equilibrium with Riskless Borrowing and Lending

We have as yet presented no hypothesis about $\tilde{\gamma}_{0t}$ in (7). In the general two-parameter model, given $E(\tilde{\gamma}_{2t}) = E(\tilde{\gamma}_{3t}) = E(\tilde{\eta}_{it}) = 0$, then, from (6), $E(\tilde{\gamma}_{0t})$ is just $E(\tilde{R}_{0t})$, the expected return on any zero- β security. And market efficiency requires that $\tilde{\gamma}_{0t} - E(\tilde{R}_{0t})$ be a fair game.

But if we add to the model as presented thus far the assumption that there is unrestricted riskless borrowing and lending at the known rate R_{ft} , then one has the market setting of the original two-parameter “capital asset pricing model” of Sharpe (1964) and Lintner (1965). In this world, since $\beta_f = 0$, $E(\tilde{\gamma}_{0t}) = R_{ft}$. And market efficiency requires that $\tilde{\gamma}_{0t} - R_{ft}$ be a fair game.

It is well to emphasize that to refute the proposition that $E(\tilde{\gamma}_{0t}) = R_{ft}$ is only to refute a specific two-parameter model of market equilibrium. Our view is that tests of conditions C1–C3 are more fundamental. We regard C1–C3 as the general expected return implications of the two-parameter model in the sense that they are the implications of the fact that in the two-parameter portfolio model investors hold efficient portfolios, and they are consistent with any two-parameter model of market equilibrium in which the market portfolio is efficient.

F. The Hypotheses

To summarize, given the stochastic generalization of (2) and (6) that is provided by (7), the testable implications of the two-parameter model for expected returns are:

$$C1 \text{ (linearity)}—E(\tilde{\gamma}_{2t}) = 0.$$

$$C2 \text{ (no systematic effects of non-}\beta \text{ risk)}—E(\tilde{\gamma}_{3t}) = 0.$$

$$C3 \text{ (positive expected return-risk tradeoff)}—E(\tilde{\gamma}_{1t}) = E(\tilde{R}_{mt}) - E(\tilde{R}_{0t}) > 0.$$

$$\text{Sharpe-Lintner (S-L) Hypothesis—}E(\tilde{\gamma}_{0t}) = R_{ft}.$$

Finally, capital market efficiency in a two-parameter world requires

ME (market efficiency)—the stochastic coefficients $\tilde{\gamma}_{2t}$, $\tilde{\gamma}_{3t}$, $\tilde{\gamma}_{1t} - [E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$, $\tilde{\gamma}_{0t} - E(\tilde{R}_{0t})$, and the disturbances $\tilde{\eta}_{it}$ are fair games.⁴

III. Previous Work⁵

The earliest tests of the two-parameter model were done by Douglas (1969), whose results seem to refute condition C2. In annual and quarterly return data, there seem to be measures of risk, in addition to β , that contribute systematically to observed average returns. These results, if valid, are inconsistent with the hypothesis that investors attempt to hold efficient portfolios. Assuming that the market portfolio is efficient, premiums are paid for risks that do not contribute to the risk of an efficient portfolio.

Miller and Scholes (1972) take issue both with Douglas's statistical techniques and with his use of annual and quarterly data. Using different methods and simulations, they show that Douglas's negative results could be expected even if condition C2 holds. Condition C2 is tested below with extensive monthly data, and this avoids almost all of the problems discussed by Miller and Scholes.

⁴ If $\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{3t}$ are fair games, then $E(\tilde{\gamma}_{2t}) = E(\tilde{\gamma}_{3t}) = 0$. Thus, C1 and C2 are implied by ME. Keeping the expected return conditions separate, however, better emphasizes the economic basis of the various hypotheses.

⁵ A comprehensive survey of empirical and theoretical work on the two-parameter model is in Jensen (1972).

Much of the available empirical work on the two-parameter model is concerned with testing the S-L hypothesis that $E(\tilde{\gamma}_{0t}) = R_{ft}$. The tests of Friend and Blume (1970) and those of Black, Jensen, and Scholes (1972) indicate that, at least in the period since 1940, on average $\tilde{\gamma}_{0t}$ is systematically greater than R_{ft} . The results below support this conclusion.

In the empirical literature to date, the importance of the linearity condition C1 has been largely overlooked. Assuming that the market portfolio m is efficient, if $E(\tilde{\gamma}_{2t})$ in (7) is positive, the prices of high- β securities are on average too low—their expected returns are too high—relative to those of low- β securities, while the reverse holds if $E(\tilde{\gamma}_{2t})$ is negative. In short, if the process of price formation in the capital market reflects the attempts of investors to hold efficient portfolios, then the linear relationship of (6) between expected return and risk must hold.

Finally, the previous empirical work on the two-parameter model has not been concerned with tests of market efficiency.

IV. Methodology

The data for this study are monthly percentage returns (including dividends and capital gains, with the appropriate adjustments for capital changes such as splits and stock dividends) for all common stocks traded on the New York Stock Exchange during the period January 1926 through June 1968. The data are from the Center for Research in Security Prices of the University of Chicago.

A. General Approach

Testing the two-parameter model immediately presents an unavoidable “errors-in-the-variables” problem: The efficiency condition or expected return-risk equation (6) is in terms of true values of the relative risk measure β_i , but in empirical tests estimates, $\hat{\beta}_i$, must be used. In this paper

$$\hat{\beta}_i \equiv \frac{\widehat{\text{cov}}(\tilde{R}_i, \tilde{R}_m)}{\hat{\sigma}^2(\tilde{R}_m)},$$

where $\widehat{\text{cov}}(\tilde{R}_i, \tilde{R}_m)$ and $\hat{\sigma}^2(\tilde{R}_m)$ are estimates of $\text{cov}(\tilde{R}_i, \tilde{R}_m)$ and $\sigma^2(\tilde{R}_m)$ obtained from monthly returns, and where the proxy chosen for \tilde{R}_{mt} is “Fisher’s Arithmetic Index,” an equally weighted average of the returns on all stocks listed on the New York Stock Exchange in month t . The properties of this index are analyzed in Fisher (1966).

Blume (1970) shows that for any portfolio p , defined by the weights x_{ip} , $i = 1, 2, \dots, N$,

$$\hat{\beta}_p \equiv \frac{\widehat{\text{cov}}(\tilde{R}_p, \tilde{R}_m)}{\hat{\sigma}^2(\tilde{R}_m)} = \sum_{i=1}^N x_{ip} \frac{\widehat{\text{cov}}(\tilde{R}_i, \tilde{R}_m)}{\hat{\sigma}^2(\tilde{R}_m)} = \sum_{i=1}^N x_{ip} \hat{\beta}_i.$$

If the errors in the $\hat{\beta}_i$ are substantially less than perfectly positively correlated, the $\hat{\beta}$'s of portfolios can be much more precise estimates of true β 's than the $\hat{\beta}$'s for individual securities.

To reduce the loss of information in the risk-return tests caused by using portfolios rather than individual securities, a wide range of values of portfolio $\hat{\beta}_p$'s is obtained by forming portfolios on the basis of ranked values of $\hat{\beta}_i$ for individual securities. But such a procedure, naively executed could result in a serious regression phenomenon. In a cross section of $\hat{\beta}_i$, high observed $\hat{\beta}_i$ tend to be above the corresponding true β_i and low observed $\hat{\beta}_i$ tend to be below the true β_i . Forming portfolios on the basis of ranked $\hat{\beta}_i$ thus causes bunching of positive and negative sampling errors within portfolios. The result is that a large portfolio $\hat{\beta}_p$ would tend to overstate the true β_p , while a low $\hat{\beta}_p$ would tend to be an underestimate.

The regression phenomenon can be avoided to a large extent by forming portfolios from ranked $\hat{\beta}_i$ computed from data for one time period but then using a subsequent period to obtain the $\hat{\beta}_p$ for these portfolios that are used to test the two-parameter model. With fresh data, within a portfolio errors in the individual security $\hat{\beta}_i$ are to a large extent random across securities, so that in a portfolio $\hat{\beta}_p$ the effects of the regression phenomenon are, it is hoped, minimized.⁶

B. Details

The specifics of the approach are as follows. Let N be the total number of securities to be allocated to portfolios and let $\text{int}(N/20)$ be the largest integer equal to or less than $N/20$. Using the first 4 years (1926–29) of monthly return data, 20 portfolios are formed on the basis of ranked $\hat{\beta}_i$ for individual securities. The middle 18 portfolios each has $\text{int}(N/20)$ securities. If N is even, the first and last portfolios each has $\text{int}(N/20) + \frac{1}{2} [N - 20 \text{int}(N/20)]$ securities. The last (highest $\hat{\beta}$) portfolio gets an additional security if N is odd.

The following 5 years (1930–34) of data are then used to recompute the $\hat{\beta}_i$, and these are averaged across securities within portfolios to obtain 20 initial portfolio $\hat{\beta}_{pt}$ for the risk-return tests. The subscript t is added to indicate that each month t of the following four years (1935–38) these $\hat{\beta}_{pt}$ are recomputed as simple averages of individual security $\hat{\beta}_i$, thus adjusting the portfolio $\hat{\beta}_{pt}$ month by month to allow for delisting of securities. The component $\hat{\beta}_i$ for securities are themselves updated yearly—that

⁶The errors-in-the-variables problem and the technique of using portfolios to solve it were first pointed out by Blume (1970). The portfolio approach is also used by Friend and Blume (1970) and Black, Jensen, and Scholes (1972). The regression phenomenon that arises in risk-return tests was first recognized by Blume (1970) and then by Black, Jensen, and Scholes (1972), who offer a solution to the problem that is similar in spirit to ours.

is, they are recomputed from monthly returns for 1930 through 1935, 1936, or 1937.

As a measure of the non- β risk of security i we use $s(\hat{\epsilon}_i)$, the standard deviation of the least-squares residuals $\hat{\epsilon}_{it}$ from the so-called market model

$$\tilde{R}_{it} = a_i + \beta^i \tilde{R}_{mt} + \tilde{\epsilon}_{it}. \quad (8)$$

The standard deviation $s(\hat{\epsilon}_i)$ is a measure of non- β risk in the following sense. One view of risk, antithetic to that of portfolio theory, says that the risk of a security is measured by the total dispersion of its return distribution. Given a market dominated by risk averters, this model would predict that a security's expected return is related to its total return dispersion rather than just to the contribution of the security to the dispersion in the return on an efficient portfolio.⁷ If $B_i \equiv \text{cov}(\tilde{R}_i, \tilde{R}_m) / \sigma^2(\tilde{R}_m)$, then in (8) $\text{cov}(\tilde{\epsilon}_i, \tilde{R}_m) = 0$, and

$$\sigma^2(\tilde{R}_i) = \beta_i^2 \sigma^2(\tilde{R}_m) + \sigma^2(\tilde{\epsilon}_i) + 2\beta_i \text{cov}(\tilde{R}_m, \tilde{\epsilon}_i). \quad (9)$$

Thus, from (9), one can say that $s(\hat{\epsilon}_i)$ is an estimate of that part of the dispersion of the distribution of the return on security i that is not directly related to β_i .

The month-by-month returns on the 20 portfolios, with equal weighting of individual securities each month, are also computed for the 4-year period 1935–38. For each month t of this period, the following cross-sectional regression—the empirical analog of equation (7)—is run:

$$R_{pt} = \hat{\gamma}_{0t} + \hat{\gamma}_{1t} \hat{\beta}_{p,t-1} + \hat{\gamma}_{2t} \hat{\beta}_{p,t-1}^2 + \hat{\gamma}_{3t} \bar{s}_{p,t-1}(\hat{\epsilon}_i) + \hat{\eta}_{pt}, \quad (10)$$

$$p = 1, 2, \dots, 20.$$

The independent variable $\hat{\beta}_{p,t-1}$ is the average of the $\hat{\beta}_i$ for securities in portfolio p discussed above; $\hat{\beta}_{p,t-1}^2$ is the average of the squared values of these $\hat{\beta}_i$ (and is thus somewhat mislabeled); and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ is likewise the average of $s(\hat{\epsilon}_i)$ for securities in portfolio p . The $s(\hat{\epsilon}_i)$ are computed from data for the same period as the component $\hat{\beta}_i$ of $\hat{\beta}_{p,t-1}$, and like these $\hat{\beta}_i$, they are updated annually.

The regression equation (10) is (7) averaged across the securities in a portfolio, with estimates $\hat{\beta}_{p,t-1}$, $\hat{\beta}_{p,t-1}^2$, and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ used as explanatory variables, and with least-squares estimates of the stochastic coefficients $\hat{\gamma}_{0t}$, $\hat{\gamma}_{1t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$. The results from (10)—the time series of month-by-month values of the regression coefficients $\hat{\gamma}_{0t}$, $\hat{\gamma}_{1t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$ for the 4-year period 1935–38—are the inputs for our tests of the two-parameter model for this period. To get results for other periods, the steps described

⁷ For those accustomed to the portfolio viewpoint, this alternative model may seem so naïve that it should be classified as a straw man. But it is the model of risk and return implied by the “liquidity preference” and “market segmentation” theories of the term structure of interest rates and by the Keynesian “normal backwardation” theory of commodity futures markets. For a discussion of the issues with respect to these markets, see Roll (1970) and K. Miller (1971).

above are repeated. That is, 7 years of data are used to form portfolios; the next 5 years are used to compute initial values of the independent variables in (10); and then the risk-return regressions of (10) are fit month by month for the following 4-year period.

The nine different portfolio formation periods (all except the first 7 years in length), initial 5-year estimation periods, and testing periods (all but the last 4 years in length) are shown in table 1. The choice of 4-year testing periods is a balance of computation costs against the desire to reform portfolios frequently. The choice of 7-year portfolio formation periods and 5–8-year periods for estimating the independent variables $\hat{\beta}_{p,t-1}$ and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ in the risk-return regressions reflects a desire to balance the statistical power obtained with a large sample from a stationary process against potential problems caused by any nonconstancy of the β_i . The choices here are in line with the results of Gonedes (1973). His results also led us to require that to be included in a portfolio a security available in the first month of a testing period must also have data for all 5 years of the preceding estimation period and for at least 4 years of the portfolio formation period. The total number of securities available in the first month of each testing period and the number of securities meeting the data requirement are shown in table 1.

C. Some Observations on the Approach

Table 2 shows the values of the 20 portfolios $\hat{\beta}_{p,t-1}$ and their standard errors $s(\hat{\beta}_{p,t-1})$ for four of the nine 5-year estimation periods. Also shown are: $r(R_p, R_m)^2$, the coefficient of determination between R_{pt} and R_{mt} ; $s(R_p)$, the sample standard deviation of R_p ; and $s(\hat{\epsilon}_p)$, the standard deviation of the portfolio residuals from the market model of (8), not to be confused with $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$, the average for individual securities, which is also shown. The $\hat{\beta}_{p,t-1}$ and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ are the independent variables in the risk return regressions of (10) for the first month of the 4-year testing periods following the four estimation periods shown.

Under the assumptions that for a given security the disturbances $\tilde{\epsilon}_{jt}$ in (8) are serially independent, independent of \tilde{R}_{mt} , and identically distributed through time, the standard error of $\hat{\beta}_i$ is

$$\sigma(\hat{\beta}_i) = \frac{\sigma(\tilde{\epsilon}_i)}{\sqrt{n} \sigma(\tilde{R}_m)},$$

where n is the number of months used to compute $\hat{\beta}_i$. Likewise,

$$\sigma(\tilde{\beta}_{p,t-1}) = \frac{\sigma(\tilde{\epsilon}_p)}{\sqrt{n} \sigma(\tilde{R}_m)}.$$

Thus, the fact that in table 2, $s(\hat{\epsilon}_p)$ is generally on the order of one-third to one-seventh $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ implies that $s(\hat{\beta}_{p,t-1})$ is one-third to one-seventh

TABLE 1
PORTFOLIO FORMATION, ESTIMATION, AND TESTING PERIODS

	PERIODS				
	1	2	3	4	5
Portfolio formation period ...	1926-29	1927-33	1931-37	1935-41	1939-45
Initial estimation period	1930-34	1934-38	1938-42	1942-46	1946-50
Testing period	1935-38	1939-42	1943-46	1947-50	1951-54
No. of securities available	710	779	804	908	1,011
No. of securities meeting data requirement	435	576	607	704	751

$s(\hat{\beta}_i)$. Estimates of β for portfolios are indeed more precise than those for individual securities.

Nevertheless, it is interesting to note that if the disturbances $\tilde{\epsilon}_{jt}$ in (8) were independent from security to security, the relative increase in the precision of the $\hat{\beta}$ obtained by using portfolios rather than individual securities would be about the same for all portfolios. We argue in the Appendix, however, that the results from (10) imply that the $\tilde{\epsilon}_{it}$ in (8) are interdependent, and the interdependence is strongest among high- β securities and among low- β securities. This is evident in table 2: The ratios $s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ are always highest at the extremes of the $\hat{\beta}_{p,t-1}$ range and lowest for $\hat{\beta}_{p,t-1}$ close to 1.0. But it is important to emphasize that since these ratios are generally less than .33, interdependence among the $\tilde{\epsilon}_{it}$ of different securities does not destroy the value of using portfolios to reduce the dispersion of the errors in estimated β 's.

Finally, all the tests of the two-parameter model are predictive in the sense that the explanatory variables $\hat{\beta}_{p,t-1}$ and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ in (10) are computed from data for a period prior to the month of the returns, the R_{pt} , on which the regression is run. Although we are interested in testing the two-parameter model as a positive theory—that is, examining the extent to which it is helpful in describing actual return data—the model was initially developed by Markowitz (1959) as a normative theory—that is, as a model to help people make better decisions. As a normative theory the model only has content if there is some relationship between future returns and estimates of risk that can be made on the basis of current information.

Now that the predictive nature of the tests has been emphasized, to simplify the notation, the explanatory variables in (10) are henceforth referred to as $\hat{\beta}_p$, $\hat{\beta}_p^2$, and $\bar{s}_p(\hat{\epsilon}_i)$.

V. Results

The major tests of the implications of the two-parameter model are in table 3. Results are presented for 10 periods: the overall period 1935–

TABLE 1 (Continued)

	PERIODS			
	6	7	8	9
Portfolio formation period ...	1943-49	1947-53	1951-57	1955-61
Initial estimation period	1950-54	1954-58	1958-62	1962-66
Testing period	1955-58	1959-62	1963-66	1967-68
No. of securities available	1,053	1,065	1,162	1,261
No. of securities meeting data requirement	802	856	858	845

6/68; three long subperiods, 1935-45, 1946-55, and 1956-6/68; and six subperiods which, except for the first and last, cover 5 years each. This choice of subperiods reflects the desire to keep separate the pre- and post-World War II periods. Results are presented for four different versions of the risk-return regression equation (10): Panel D is based on (10) itself, but in panels A-C, one or more of the variables in (10) is suppressed. For each period and model, the table shows: $\hat{\gamma}_j$, the average of the month-by-month regression coefficient estimates, $\hat{\gamma}_{jt}$; $s(\hat{\gamma}_j)$, the standard deviation of the monthly estimates; and \bar{r}^2 and $s(r^2)$, the mean and standard deviation of the month-by-month coefficients of determination, r_t^2 , which are adjusted for degrees of freedom. The table also shows the first-order serial correlations of the various monthly $\hat{\gamma}_{jt}$ computed either about the sample mean of $\hat{\gamma}_{jt}$ [in which case the serial correlations are labeled $\rho_M(\hat{\gamma}_j)$] or about an assumed mean of zero [in which case they are labeled $\rho_0(\hat{\gamma}_j)$]. Finally, t -statistics for testing the hypothesis that $\hat{\gamma}_j = 0$ are presented. These t -statistics are

$$t(\hat{\gamma}_j) = \frac{\bar{\hat{\gamma}}_j}{s(\hat{\gamma}_j)/\sqrt{n}},$$

where n is the number of months in the period, which is also the number of estimates $\hat{\gamma}_{jt}$ used to compute $\bar{\hat{\gamma}}_j$ and $s(\hat{\gamma}_j)$.

In interpreting these t -statistics one should keep in mind the evidence of Fama (1965a) and Blume (1970) which suggests that distributions of common stock returns are "thick-tailed" relative to the normal distribution and probably conform better to nonnormal symmetric stable distributions than to the normal. From Fama and Babiak (1968), this evidence means that when one interprets large t -statistics under the assumption that the underlying variables are normal, the probability or significance levels obtained are likely to be overestimates. But it is important to note that, with the exception of condition C3 (positive expected return-risk tradeoff), upward-biased probability levels lead to biases toward rejection of the hypotheses of the two-parameter model. Thus, if these hypotheses cannot

TABLE 2
 SAMPLE STATISTICS FOR FOUR SELECTED ESTIMATION PERIODS

Statistic	1	2	3	4	5	6	7	8	9	10
Portfolios for Estimation Period 1934-38										
$\hat{\beta}_{p,t-1}$ .....	.322	.508	.651	.674	.695	.792	.921	.942	.970	1.005
$s(\hat{\beta}_{p,t-1})$ .....	.027	.027	.025	.023	.028	.026	.032	.029	.034	.027
$r(R_p, R_m)^2$ .....	.709	.861	.921	.936	.912	.941	.932	.946	.933	.958
$s(R_p)$ .....	.040	.058	.072	.074	.077	.087	.101	.103	.106	.109
$s(\hat{\epsilon}_p)$ .....	.022	.022	.020	.019	.023	.021	.026	.024	.028	.022
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.085	.075	.083	.078	.090	.095	.109	.106	.111	.097
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.259	.293	.241	.244	.256	.221	.238	.226	.252	.227
Portfolios for Estimation Period 1942-46										
$\hat{\beta}_{p,t-1}$ .....	.467	.537	.593	.628	.707	.721	.770	.792	.805	.894
$s(\hat{\beta}_{p,t-1})$ .....	.045	.041	.044	.037	.027	.032	.035	.035	.028	.040
$r(R_p, R_m)^2$ .....	.645	.745	.753	.829	.919	.898	.889	.898	.934	.896
$s(R_p)$ .....	.035	.037	.041	.041	.044	.046	.049	.050	.050	.057
$s(\hat{\epsilon}_p)$ .....	.021	.019	.020	.017	.013	.015	.016	.016	.013	.018
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.055	.055	.063	.058	.058	.063	.064	.064	.062	.069
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.382	.345	.317	.293	.224	.238	.250	.250	.210	.261
Portfolios for Estimation Period 1950-54										
$\hat{\beta}_{p,t-1}$ .....	.418	.590	.694	.751	.777	.784	.929	.950	.996	1.014
$s(\hat{\beta}_{p,t-1})$ .....	.042	.047	.045	.037	.038	.035	.050	.038	.035	.029
$r(R_p, R_m)^2$ .....	.629	.723	.798	.872	.878	.895	.856	.913	.933	.954
$s(R_p)$ .....	.019	.025	.028	.029	.030	.030	.036	.036	.037	.038
$s(\hat{\epsilon}_p)$ .....	.012	.013	.013	.010	.010	.010	.014	.011	.010	.008
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.040	.044	.046	.048	.051	.051	.052	.053	.054	.057
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.300	.295	.283	.208	.196	.196	.269	.208	.185	.140
Portfolios for Estimation Period 1958-62										
$\hat{\beta}_{p,t-1}$ .....	.626	.635	.719	.801	.817	.860	.920	.950	.975	.995
$s(\hat{\beta}_{p,t-1})$ .....	.043	.048	.039	.046	.047	.033	.037	.038	.032	.037
$r(R_p, R_m)^2$ .....	.783	.745	.851	.835	.838	.920	.913	.915	.939	.925
$s(R_p)$ .....	.030	.031	.033	.037	.038	.038	.041	.042	.043	.044
$s(\hat{\epsilon}_p)$ .....	.014	.016	.013	.015	.015	.011	.012	.012	.011	.012
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.049	.052	.056	.059	.064	.061	.070	.069	.068	.064
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.286	.308	.232	.254	.234	.180	.171	.174	.162	.188

be rejected when t -statistics are interpreted under the assumption of normality, the hypotheses are on even firmer ground when one takes into account the thick tails of empirical return distributions.

Further justification for using t -statistics to test hypotheses on monthly common stock returns is in the work of Officer (1971). Under the assumption that distributions of monthly returns are symmetric stable, he estimates that in the post-World War II period the characteristic exponent

TABLE 2 (Continued)

Statistic	11	12	13	14	15	16	17	18	19	20
Portfolios for Estimation Period 1934–38										
$\hat{\beta}_{p,t-1}$	1.046	1.122	1.181	1.192	1.196	1.295	1.335	1.396	1.445	1.458
$s(\hat{\beta}_{p,t-1})$ .....	.028	.031	.035	.028	.029	.032	.032	.053	.039	.053
$r(\hat{R}_p, \hat{R}_m)^2$ .....	.959	.956	.951	.969	.966	.966	.967	.922	.958	.927
$s(\hat{R}_p)$ .....	.113	.122	.128	.128	.129	.140	.144	.154	.156	.160
$s(\hat{\epsilon}_p)$ .....	.023	.026	.029	.023	.024	.026	.026	.043	.032	.043
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.094	.124	.120	.122	.132	.125	.129	.158	.145	.170
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.245	.210	.242	.188	.182	.208	.202	.272	.221	.253
Portfolios for Estimation Period 1942–46										
$\hat{\beta}_{p,t-1}$ .....	.949	.952	1.010	1.038	1.254	1.312	1.316	1.473	1.631	1.661
$s(\hat{\beta}_{p,t-1})$ .....	.031	.036	.040	.030	.034	.039	.041	.084	.083	.077
$r(\hat{R}_p, \hat{R}_m)^2$ .....	.942	.923	.917	.954	.958	.951	.945	.839	.867	.887
$s(\hat{R}_p)$ .....	.059	.060	.063	.064	.077	.081	.081	.097	.105	.106
$s(\hat{\epsilon}_p)$ .....	.014	.016	.018	.014	.016	.018	.019	.039	.038	.036
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.073	.074	.085	.077	.096	.083	.086	.134	.117	.122
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.192	.216	.212	.182	.167	.217	.221	.291	.325	.295
Portfolios for Estimation Period 1950–54										
$\hat{\beta}_{p,t-1}$	1.117	1.123	1.131	1.134	1.186	1.235	1.295	1.324	1.478	1.527
$s(\hat{\beta}_{p,t-1})$ .....	.039	.027	.044	.033	.037	.049	.045	.046	.058	.086
$r(\hat{R}_p, \hat{R}_m)^2$ .....	.934	.968	.919	.952	.944	.915	.933	.934	.917	.841
$s(\hat{R}_p)$ .....	.042	.041	.043	.042	.044	.047	.049	.050	.056	.060
$s(\hat{\epsilon}_p)$ .....	.011	.007	.012	.009	.010	.014	.013	.013	.016	.024
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.066	.057	.066	.060	.064	.064	.065	.068	.076	.088
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.167	.123	.182	.150	.156	.219	.200	.192	.210	.273
Portfolios for Estimation Period 1958–62										
$\hat{\beta}_{p,t-1}$	1.013	1.019	1.037	1.048	1.069	1.081	1.092	1.098	1.269	1.388
$s(\hat{\beta}_{p,t-1})$ .....	.038	.031	.036	.033	.036	.038	.045	.045	.048	.065
$r(\hat{R}_p, \hat{R}_m)^2$ .....	.922	.948	.934	.945	.936	.931	.907	.910	.922	.886
$s(\hat{R}_p)$ .....	.045	.045	.046	.046	.047	.048	.049	.049	.056	.063
$s(\hat{\epsilon}_p)$ .....	.013	.010	.012	.011	.012	.013	.015	.015	.016	.021
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ .....	.069	.066	.067	.062	.070	.072	.076	.068	.070	.078
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$..	.188	.152	.179	.177	.171	.180	.197	.220	.228	.269

for these distributions is about 1.8 (as compared with a value of 2.0 for a normal distribution). From Fama and Roll (1968), for values of the characteristic exponent so close to 2.0 stable nonnormal distributions differ noticeably from the normal only in their extreme tails—that is, beyond the .05 and .95 fractiles. Thus, as long as one is not concerned with precise estimates of probability levels (always a somewhat meaningless activity), interpreting t -statistics in the usual way does not lead to serious errors.

TABLE 3

SUMMARY RESULTS FOR THE REGRESSION

$$R_p = \hat{\gamma}_{0t} + \hat{\gamma}_{1t}\hat{\beta}_p + \hat{\gamma}_{2t}\hat{\beta}_p^2 + \hat{\gamma}_{3t}\bar{s}_p(\hat{\epsilon}_t) + \hat{\eta}_{pt}$$

PERIOD	STATISTIC																			
	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}_3$	$\hat{\gamma}_0 - \bar{R}_T$	$s(\hat{\gamma}_0)$	$s(\hat{\gamma}_1)$	$s(\hat{\gamma}_2)$	$s(\hat{\gamma}_3)$	$\rho_0(\hat{\gamma}_0)$	$\rho_0(\hat{\gamma}_1)$	$\rho_0(\hat{\gamma}_2)$	$\rho_0(\hat{\gamma}_3)$	$t(\hat{\gamma}_0)$	$t(\hat{\gamma}_1)$	$t(\hat{\gamma}_2)$	$t(\hat{\gamma}_3)$	$t(\hat{\gamma}_0) - t(\bar{R}_T)$	$s(r^{(2)})$	
Panel A:																				
1935-6/68	.0061	.0085	...	...	.0048	.038	.066	...	...	.15	.02	...	...	3.24	2.57	...	...	2.55	.29	.30
1935-45	.0039	.0163	...	...	.0037	.052	.098	...	...	.10	-.03	...	...	.86	1.02	...	...	.82	.29	.29
1946-55	.0087	.0027	...	...	.0078	.026	.041	...	...	.18	.07	...	...	3.71	1.70	...	...	3.31	.31	.32
1956-6/68	.0060	.0062	...	...	.0034	.030	.044	...	...	.27	.15	...	...	2.43	1.73	...	...	1.39	.28	.29
1935-40	.0024	.0109	...	...	.0023	.064	.116	...	...	.07	-.09	...	...	.32	.79	...	...	.31	.23	.30
1941-45	.0056	.0229	...	...	.0054	.034	.069	...	...	.23	.15	...	...	1.37	2.55	...	...	1.22	.37	.28
1946-50	.0050	.0029	...	...	.0044	.031	.047	...	...	.20	.04	...	...	1.27	.48	...	...	1.10	.39	.33
1951-55	.0123	.0024	...	...	.0111	.019	.035	...	...	.30	.08	...	...	3.06	1.55	...	...	4.36	.24	.29
1956-60	.0148	.0059	...	...	.0128	.020	.034	...	...	.37	.08	...	...	5.68	1.37	...	...	4.89	.22	.31
1961-6/68	.0001	.0143	...	...	-.0029	.034	.048	...	...	.22	.09	...	...	.03	2.81	...	...	-.80	.32	.27
Panel B:																				
1935-6/68	.0049	.0105	-.0008	...	.0036	.052	.118	.056	...	.03	-.11	-.11	...	1.92	1.79	-.29	...	1.42	.32	.31
1935-45	.0074	.0079	.0040	...	.0073	.061	.139	.074	...	-.10	-.31	-.21	...	1.39	.65	.61	...	1.36	.32	.30
1946-55	.0002	.0217	-.0087	...	-.0012	.036	.095	.033	...	.04	.00	.00	...	-.07	2.51	-.283	...	-.38	.36	.32
1956-6/68	.0069	.0040	.0013	...	.0043	.034	.116	.053	...	.17	.07	.03	...	1.56	.42	.29	...	-.97	.30	.30
1935-40	.0013	.0141	-.0017	...	.0016	.069	.160	.075	...	-.13	-.36	-.35	...	.16	.75	-.19	...	.14	.24	.24
1941-45	.0148	.0004	.0108	...	.0146	.050	.111	.075	...	.04	-.19	-.04	...	2.28	.03	1.15	...	2.24	.39	.39
1946-50	.0008	.0152	-.0031	...	.0015	.037	.104	.032	...	.14	.04	.00	...	-.18	1.14	1.24	...	-.32	.44	.32
1951-55	.0004	.0281	.0122	...	-.0008	.030	.085	.035	...	-.17	-.14	-.01	...	.10	2.55	2.72	...	-.20	.28	.28
1956-60	.0128	.0015	-.0020	...	.0108	.030	.072	.029	...	.35	.11	.26	...	3.38	-.16	-.54	...	2.84	.25	.31
1961-6/68	.0029	.0077	.0034	...	-.0000	.066	.138	.064	...	.14	.06	-.01	...	.42	.53	.51	...	-.01	.34	.34

TABLE 3 (Continued)

PERIOD	STATISTIC																			
	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}_3$	$\hat{\gamma}_0 - R_T$	$s(\hat{\gamma}_0)$	$s(\hat{\gamma}_1)$	$s(\hat{\gamma}_2)$	$s(\hat{\gamma}_3)$	$\rho_0(\hat{\gamma}_1)$	$\rho_0(\hat{\gamma}_2)$	$\rho_0(\hat{\gamma}_3)$	$t(\hat{\gamma}_0)$	$t(\hat{\gamma}_1)$	$t(\hat{\gamma}_2)$	$t(\hat{\gamma}_3)$	$t(\hat{\gamma}_0 - R_T)$	F^2	$s(F^2)$	
Panel C:																				
1935-6/68	.0054	-.0072	...	-.0198	.0041	-.052	.065	...	.868	.04	-.12	...	-.04	2.10	...	...	1.59	.32	.31
1935-45	.0017	-.0104	...	-.0841	.0015	-.073	.083	...	.921	-.00	-.26	...	-.08	.26	...	...	.24	.32	.31
1946-55	.0110	-.0075	...	-.1032	.0100	-.032	.036	...	.609	.08	.02	...	-.20	3.78	...	...	3.46	.34	.32
1956-6/68	.0042	-.0041	...	-.0633	.0016	-.040	.052	...	.984	.12	.08	...	.03	1.28	...	...	.50	.30	.29
1935-40	.0036	-.0119	...	-.0170	.0035	-.082	.105	...	.744	-.03	-.26	...	.18	.37	...	...	.36	.25	.30
1941-45	.0006	-.0085	...	-.2053	-.0009	-.061	.052	...	1.091	.07	-.29	...	-.02	.08	...	...	-.11	.41	.30
1946-50	.0069	-.0081	...	-.0920	.0062	-.034	.066	...	.504	.14	.06	...	.02	1.56	...	...	1.40	.42	.33
1951-55	.0150	-.0069	...	-.1185	.0138	-.029	.043	...	.702	.06	-.18	...	.32	4.05	...	...	3.72	.27	.29
1956-60	.0127	-.0081	...	-.0728	.0107	-.037	.045	...	1.164	.15	.15	...	.21	2.68	...	...	2.26	.26	.30
1961-6/68	-.0014	-.0122	...	-.0570	-.0044	-.042	.055	...	.850	.10	.00	...	-.19	-.32	...	...	-.98	.33	.27
Panel D:																				
1935-6/68	.0020	.0114	-.0026	.0516	.0008	.075	.123	.060	.929	-.09	-.09	-.12	-.10	.55	1.85	-.86	1.11	.20	.34	.31
1935-45	.0011	.0118	-.0009	.0817	.0010	.103	.146	.079	1.003	.20	.23	-.24	.15	.13	.94	-.14	.94	.11	.34	.34
1946-55	.0017	.0209	-.0076	-.0378	.0008	.042	.096	.038	.619	-.10	-.00	-.01	-.20	.44	2.39	-.216	-.07	.20	.36	.36
1956-6/68	.0031	.0034	-.0000	.0966	.0005	.065	.122	.055	1.061	.12	.03	-.01	-.05	.59	.34	-.00	1.11	.10	.32	.32
1935-40	.0009	.0156	-.0029	.0025	.0008	.112	.171	.085	.826	.16	.23	-.26	.12	.07	.78	-.29	.03	.06	.26	.43
1941-45	.0015	.0073	-.0014	.1767	.0012	.092	.109	.072	1.181	.28	-.21	-.22	.18	.12	.52	.15	1.16	.10	.40	.44
1946-50	.0011	.0141	-.0040	-.0313	.0004	.047	.106	.042	.590	.10	.03	-.01	-.12	.18	1.03	-.73	.41	.07	.20	.40
1951-55	.0023	.0277	-.0112	-.0443	.0011	.038	.054	.051	.481	.11	.13	-.01	-.28	.48	2.53	-.234	-.53	.25	.28	.28
1956-60	.0103	.0047	-.0020	.0979	.0083	.049	.078	.032	1.286	.16	.19	-.01	.02	1.63	-.47	-.49	.59	1.31	.28	.28
1961-6/68	-.0017	-.0088	-.0013	.0957	-.0046	.073	.144	.066	.887	.20	.00	.01	-.15	-.21	.58	.19	1.02	-.60	.35	.35

Inferences based on approximate normality are on even safer ground if one assumes, again in line with the results of Officer (1971), that although they are well approximated by stable nonnormal distributions with $\alpha \cong 1.8$, distributions of monthly returns in fact have finite variances and converge—but very slowly—toward the normal as one takes sums or averages of individual returns. Then the distributions of the means of month-by-month regression coefficients from the risk-return model are likely to be close to normal since each mean is based on coefficients for many months.

A. Tests of the Major Hypotheses of the Two-Parameter Model

Consider first condition C2 of the two-parameter model, which says that no measure of risk, in addition to β , systematically affects expected returns. This hypothesis is not rejected by the results in panels C and D of table 3. The values of $t(\hat{\gamma}_3)$ are small, and the signs of the $t(\hat{\gamma}_3)$ are randomly positive and negative.

Likewise, the results in panels B and D of table 3 do not reject condition C1 of the two-parameter model, which says that the relationship between expected return and β is linear. In panel B, the value of $t(\hat{\gamma}_2)$ for the overall period 1935–6/68 is only $-.29$. In the 5-year subperiods, $t(\hat{\gamma}_2)$ for 1951–55 is approximately -2.7 , but for subperiods that do not cover 1951–55, the values of $t(\hat{\gamma}_2)$ are much closer to zero.

So far, then, the two-parameter model seems to be standing up well to the data. All is for naught, however, if the critical condition C3 is rejected. That is, we are not happy with the model unless there is on average a positive tradeoff between risk and return. This seems to be the case. For the overall period 1935–6/68, $t(\hat{\gamma}_1)$ is large for all models. Except for the period 1956–60, the values of $t(\hat{\gamma}_1)$ are also systematically positive in the subperiods, but not so systematically large.

The small t -statistics for subperiods reflect the substantial month-to-month variability of the parameters of the risk-return regressions. For example, in the one-variable regressions summarized in panel A, for the period 1935–40, $\hat{\gamma}_1 = .0109$. In other words, for this period the average incremental return per unit of β was almost 1.1 percent per month, so that on average, bearing risk had substantial rewards. Nevertheless, because of the variability of $\hat{\gamma}_1$ —in this period $s(\hat{\gamma}_1)$ is 11.6 percent per month (!)— $t(\hat{\gamma}_1)$ is only .79. It takes the statistical power of the large sample for the overall period before values of $\hat{\gamma}_1$ that are large in practical terms also yield large t -values.

But at least with the sample of the overall period $t(\hat{\gamma}_1)$ achieves values supportive of the conclusion that on average there is a statistically observable positive relationship between return and risk. This is not the case with respect to $t(\hat{\gamma}_2)$ and $t(\hat{\gamma}_3)$. Even, or indeed especially, for the overall period, these t -statistics are close to zero.

The behavior through time of $\hat{\gamma}_{1t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$ is also consistent with hypothesis ME that the capital market is efficient. The serial correlations $\rho_M(\hat{\gamma}_1)$, $\rho_0(\hat{\gamma}_2)$, and $\rho_0(\hat{\gamma}_3)$, are always low in terms of explanatory power and generally low in terms of statistical significance. The proportion of the variance of $\tilde{\gamma}_{jt}$ explained by first-order serial correlation is estimated by $\rho(\hat{\gamma}_j)^2$ which in all cases is small. As for statistical significance, under the hypothesis that the true serial correlation is zero, the standard deviation of the sample coefficient can be approximated by $\sigma(\hat{\rho}) = 1/\sqrt{n}$. For the overall period, $\sigma(\hat{\rho})$ is approximately .05, while for the 10- and 5-year subperiods $\sigma(\hat{\rho})$ is approximately .09 and .13, respectively. Thus, the values of $\rho_M(\hat{\gamma}_1)$, $\rho_0(\hat{\gamma}_2)$, and $\rho_0(\hat{\gamma}_3)$ in table 3 are generally statistically close to zero. The exceptions involve primarily periods that include the 1935–40 subperiod, and the results for these periods are not independent.⁸

To conserve space, the serial correlations of the portfolio residuals, $\hat{\eta}_{pt}$, are not shown. In these serial correlations, negative values predominate. But like the serial correlations of the $\hat{\gamma}$'s, those of the $\hat{\eta}$'s are close to zero. Higher-order serial correlations of the $\hat{\gamma}$'s and $\hat{\eta}$'s have been computed, and these also are never systematically large.

In short, one cannot reject the hypothesis that the pricing of securities is in line with the implications of the two-parameter model for expected returns. And given a two-parameter pricing model, the behavior of returns through time is consistent with an efficient capital market.

B. The Behavior of the Market

Some perspective on the behavior of the market during different periods and on the interpretation of the coefficients $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$ in the risk-return regressions can be obtained from table 4. For the various periods of table 3, table 4 shows the sample means (and with some exceptions), the standard

⁸The serial correlations of $\hat{\gamma}_2$ and $\hat{\gamma}_3$ about means that are assumed to be zero provide a test of the fair game property of an efficient market, given that expected returns are generated by the two-parameter model—that is, given $E(\tilde{\gamma}_{2t}) = E(\tilde{\gamma}_{3t}) = 0$. Likewise, $\rho_0(\hat{\gamma}_{0t} - R_{ft})$ provides a test of market efficiency with respect to the behavior of $\hat{\gamma}_{0t}$ through time, given the validity of the Sharpe-Lintner hypothesis (about which we have as yet said nothing). But, at least for $\hat{\gamma}_{2t}$ and $\hat{\gamma}_{3t}$, computing the serial correlations about sample means produces essentially the same results.

To test the market efficiency hypothesis on $\tilde{\gamma}_{1t} - [E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$, the sample mean of the $\hat{\gamma}_{1t}$ is used to estimate $E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})$, thus implicitly assuming that the expected risk premium is constant. That this is a reasonable approximation [in the sense that the $\rho_M(\hat{\gamma}_1)$ are small], probably reflects the fact that variation in $E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})$ is trivial relative to the month-by-month variation in $\hat{\gamma}_{1t}$.

Finally, it is well to note that in terms of the implications of the serial correlations for making good portfolio decisions—and thus for judging whether market efficiency is a workable representation of reality—the fact that the serial correlations are low in terms of explanatory power is more important than whether or not they are low in terms of statistical significance.

TABLE 4
THE BEHAVIOR OF THE MARKET

PERIOD	STATISTIC*								
	\bar{R}_m	$\overline{R_m - R_f}$	$\hat{\gamma}_1$	$\hat{\gamma}_0$	\bar{R}_f	$\frac{\overline{R_m - R_f}}{s(R_m)}$	$\frac{\hat{\gamma}_1}{s(R_m)}$	$s(R_m)$	$s(R_m)$
1935-6/68	.0143	.0130	.0085	.0061	.0013	.2136	.1388	.061	.066
1935-45	.0197	.0195	.0163	.0039	.0002	.2207	.1844	.089	.098
1946-55	.0112	.0103	.0027	.0087	.0009	.2378	.0614	.043	.041
1956-6/68	.0121	.0095	.0062	.0060	.0026	.2387	.1560	.040	.044
1935-40	.0132	.0132	.0109	.0024	.0001	.1221	.1009	.108	.116
1941-45	.0274	.0272	.0229	.0056	.0002	.4715	.3963	.058	.069
1946-50	.0077	.0070	.0029	.0050	.0007	.1351	.0564	.052	.047
1951-55	.0148	.0136	.0024	.0123	.0012	.4174	.0735	.033	.035
1956-60	.0090	.0070	-.0059	.0148	.0020	.2080	-.1755	.034	.034
1961-6/68	.0141	.0111	.0143	.0001	.0030	.2567	.3294	.043	.048

* Since $s(R_f)$ is so small relative to $s(R_m)$, $s(R_m - R_f)$, which is not shown, is essentially the same as $s(R_m)$. The standard deviations of $(R_m - R_f)/s(R_m)$ and $\hat{\gamma}_1/s(R_m)$, also not shown, can be obtained directly from $s(R_m - R_f)$, $s(\hat{\gamma}_1)$ and $s(R_m)$. Finally, the t -statistics for $(\overline{R_m - R_f})/s(R_m)$ and $\hat{\gamma}_1/s(R_m)$ are identical with those for $\overline{R_m - R_f}$ and $\hat{\gamma}_1$.

deviations, t -statistics for sample means, and first-order serial correlations for the month-by-month values of the following variables and coefficients: the market return R_{mt} ; the riskless rate of interest R_{ft} , taken to be the yield on 1-month Treasury bills; $R_{mt} - R_{ft}$; $(R_{mt} - R_{ft})/s(R_m)$; $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$, repeated from panel A of table 3; and $\hat{\gamma}_{1t}/s(R_m)$. The t -statistics on sample means are computed in the same way as those in table 3.

If the two-parameter model is valid, then in equation (7), $E(\check{\gamma}_{0t}) = E(\check{R}_{0t})$, where $E(\check{R}_{0t})$ is the expected return on any zero- β security or portfolio. Likewise, the expected risk premium per unit of β is $E(\check{R}_{mt}) - E(\check{R}_{0t}) = E(\check{\gamma}_{1t})$. In fact, for the one-variable regressions of panel A, table 3, that is,

$$R_{pt} = \hat{\gamma}_{0t} + \hat{\gamma}_{1t} \hat{\beta}_p + \hat{\eta}_{pt}, \tag{11}$$

we have, period by period,

$$\hat{\gamma}_{1t} = R_{mt} - \hat{\gamma}_{0t}. \tag{12}$$

This condition is obtained by averaging (11) over p and making use of the least-squares constraint

$$\sum_p \hat{\eta}_{pt} = 0.^9$$

Moreover, the least-squares estimate $\hat{\gamma}_{0t}$ can always be interpreted as the return for month t on a zero- β portfolio, where the weights given to each

⁹ There is some degree of approximation in (12). The averages over p of R_{pt} and $\hat{\beta}_p$ are R_{mt} and 1.0, respectively, only if every security in the market is in some portfolio. With our methodology (see table 1) this is never true. But the degree of approximation turns out to be small: The average of the R_{pt} is always close to R_{mt} and the average $\hat{\beta}_p$ is always close to 1.0.

TABLE 4 (Continued)

STATISTIC*										
$s(\hat{\gamma}_0)$	$s(R_f)$	$t(\bar{R}_m)$	$t(\overline{R_m - R_f})$	$t(\hat{\gamma}_1)$	$t(\hat{\gamma}_0)$	$\rho_M(R_m)$	$\rho_M(R_m - R_f)$	$\rho_M(\hat{\gamma}_1)$	$\rho_M(\hat{\gamma}_0)$	$\rho_M(R_f)$
.038	.0012	4.71	4.28	2.57	3.24	-.01	-.01	.02	.14	.98
.052	.0001	2.56	2.54	1.92	.86	-.07	-.07	-.03	.10	.88
.026	.0004	2.84	2.60	.70	3.71	.09	.09	.07	.10	.94
.030	.0009	3.72	2.92	1.73	2.45	.14	.14	.15	.25	.92
.064	.0001	1.04	1.04	.79	.32	-.13	-.13	-.09	.07	.72
.034	.0001	3.68	3.65	2.55	1.27	.14	.14	.15	.21	.83
.031	.0003	1.15	1.05	.48	1.27	.09	.09	.04	.18	.97
.019	.0004	3.51	3.22	.53	5.06	-.02	-.01	.08	-.07	.89
.020	.0007	2.07	1.60	-1.37	5.68	.12	.13	.18	.13	.80
.034	.0008	3.08	2.44	2.81	.03	.13	.13	.09	.21	.93

of the 20 portfolios to form this zero- $\hat{\beta}$ portfolio are the least-squares weights that are applied to the R_{pt} in computing $\hat{\gamma}_{0t}$.¹⁰

In the Sharpe-Lintner two-parameter model of market equilibrium $E(\hat{\gamma}_{0t}) = E(\bar{R}_{0t}) = R_{ft}$ and $E(\hat{\gamma}_{1t}) = E(\bar{R}_{mt}) - E(\bar{R}_{0t}) = E(\bar{R}_{mt}) - R_{ft}$. In the period 1935–40 and in the most recent period 1961–6/68, $\hat{\gamma}_{1t}$ is close to $\overline{R_m - R_f}$ and the t -statistics for the two averages are similar. In other periods, and especially in the period 1951–60, $\hat{\gamma}_{1t}$ is substantially less than $\overline{R_m - R_f}$. This is a consequence of the fact that for these periods $\hat{\gamma}_{0t}$ is noticeably greater than \bar{R}_f . In economic terms, the tradeoff of average return for risk between common stocks and short-term bonds has been more consistently large through time than the tradeoff of average return for risk among common stocks. Testing whether the differences between $\overline{R_m - R_f}$ and $\hat{\gamma}_{1t}$ are statistically large, however, is equivalent to testing the S-L hypothesis $E(\hat{\gamma}_{0t}) = R_{ft}$, which we prefer to take up after examining further the stochastic process generating monthly returns.

Finally, although the differences between values of $\overline{R_m - R_f}$ for different periods or between values of $\hat{\gamma}_{1t}$ are never statistically large, there is a hint in table 4 that average-risk premiums declined from the pre- to the post-World War II periods. These are average risk premiums per unit of $\hat{\beta}$, however, which are not of prime interest to the investor. In making his portfolio decision, the investor is more concerned with the tradeoff of expected portfolio return for dispersion of return—that is, the slope of the efficient set of portfolios. In the Sharpe-Lintner model this slope is

¹⁰ That $\hat{\gamma}_{0t}$ is the return on a zero- $\hat{\beta}$ portfolio can be shown to follow from the unbiasedness of the least-squares coefficients in the cross-sectional risk-return regressions. If one makes the Gauss-Markov assumptions that the underlying disturbances $\tilde{\eta}_{pt}$ of (11) have zero means, are uncorrelated across p , and have the same variance for all p , then it follows almost directly from the Gauss-Markov Theorem that the least-squares estimate $\hat{\gamma}_{0t}$ is also the return for month t on the minimum variance zero- $\hat{\beta}$ portfolio that can be constructed from the 20 portfolio $\hat{\beta}_p$.

always $[E(\tilde{R}_{mt}) - R_{ft}]/\sigma(\tilde{R}_{mt})$, and in the more general model of Black (1972), it is $[E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]/\sigma(\tilde{R}_{mt})$ at the point on the efficient set corresponding to the market portfolio m . In table 4, especially for the three long subperiods, dividing $\overline{R_m - R_f}$ and $\hat{\gamma}_1$, by $s(R_m)$ seems to yield estimated risk premiums that are more constant through time. This results from the fact that any declines in $\hat{\gamma}_1$ or $\overline{R_m - R_f}$ are matched by a quite noticeable downward shift in $s(R_m)$ from the early to the later periods (cf. Blume [1970] or Officer [1971]).

C. Errors and True Variation in the Coefficients $\hat{\gamma}_{jt}$

Each cross-sectional regression coefficient $\hat{\gamma}_{jt}$ in (10) has two components: the true $\tilde{\gamma}_{jt}$ and the estimation error, $\check{\phi}_{jt} = \hat{\gamma}_{jt} - \tilde{\gamma}_{jt}$. A natural question is: To what extent is the variation in $\hat{\gamma}_{jt}$ through time due to variation in $\tilde{\gamma}_{jt}$ and to what extent is it due to $\check{\phi}_{jt}$? In addition to providing important information about the precision of the coefficient estimates used to test the two-parameter model, the answer to this question can be used to test hypotheses about the stochastic process generating returns. For example, although we cannot reject the hypothesis that $E(\tilde{\gamma}_{2t}) = 0$, does including the term involving $\hat{\beta}_p^2$ in (10) help in explaining the month-by-month behavior of returns? That is, can we reject the hypothesis that for all t , $\tilde{\gamma}_{2t} = 0$? Likewise, can we reject the hypothesis that month-by-month $\tilde{\gamma}_{3t} = 0$? And is the variation through time in $\hat{\gamma}_{0t}$ due entirely to $\check{\phi}_{0t}$ and to variation in R_{ft} ?

The answers to these questions are in table 5. For the models and time periods of table 3, table 5 shows for each $\hat{\gamma}_j$: $s^2(\hat{\gamma}_j)$, the sample variance of the month-by-month $\hat{\gamma}_{jt}$; $s^2(\check{\phi}_j)$, the average of the month-by-month values of $s^2(\check{\phi}_{jt})$, where $s(\check{\phi}_{jt})$ is the standard error of $\hat{\gamma}_{jt}$ from the cross-sectional risk-return regression of (10) for month t ; $s^2(\tilde{\gamma}_j) \equiv s^2(\hat{\gamma}_j) - s^2(\check{\phi}_j)$; and the F -statistic $F \equiv s^2(\hat{\gamma}_j)/s^2(\check{\phi}_j)$, which is relevant for testing the hypothesis, $s^2(\hat{\gamma}_j) = s^2(\check{\phi}_j)$. The numerator of F has $n - 1$ df, where n is the number of months in the sample period; and the denominator has $n(20 - K)$ df, where K is the number of coefficients $\hat{\gamma}_j$ in the model.¹¹

¹¹ The standard error of $\hat{\gamma}_{jt}$, $s(\check{\phi}_{jt})$, is proportional to the standard error of the risk-return residuals, $\hat{\eta}_{pjt}$, for month t , which has $20 - K$ df. And n values of $s^2(\check{\phi}_{jt})$ are averaged to get $s^2(\check{\phi}_j)$, so that the latter has $n(20 - K)$ df. Note that if the underlying return disturbances $\tilde{\eta}_{pt}$ of (10) are independent across p and have identical normal distributions for all p , then $\hat{\gamma}_{jt}$ is the sample mean of a normal distribution and $s^2(\check{\phi}_{jt})$ is proportional to the sample variance of the same normal distribution. If the process is also assumed to be stationary through time, it then follows that $s^2(\hat{\gamma}_{jt})$ and $s^2(\check{\phi}_{jt})$ are independent, as required by the F -test. Finally, in the F -statistics of table 5, the values of n are 60 or larger, so that, since K is from 2 to 4, $n(20 - K) \geq 960$. From Mood and Graybill (1963), some upper percentage points of the F -distribution are:

One clear-cut result in table 5 is that there is a substantial decline in the reliability of the coefficients $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$ —that is, a substantial increase in $s^2(\hat{\phi}_0)$ and $s^2(\hat{\phi}_1)$ —when $\hat{\beta}_p^2$ and/or $\bar{s}_p(\hat{\epsilon}_j)$ are included in the risk-return regressions. The variable $\hat{\beta}_p^2$ is obviously collinear with $\hat{\beta}_p$, and, as can be seen from table 2, $\bar{s}_p(\hat{\epsilon}_i)$ likewise increases with $\hat{\beta}_p$. From panels B and C of table 5, the collinearity with $\hat{\beta}_p$ is stronger for $\hat{\beta}_p^2$ than for $\bar{s}_p(\hat{\epsilon}_j)$.

In spite of the loss in precision that arises from multicollinearity, however, the F -statistics for $\hat{\gamma}_2$ (the coefficient of $\hat{\beta}_p^2$) and $\hat{\gamma}_3$ [the coefficient of $\bar{s}_p(\hat{\epsilon}_j)$] are generally large for the models of panels B and C of table 5, and for the model of panel D which includes both variables. From the F -statistics in panel D, it seems that, except for the period 1935–45, the variation through time of $\tilde{\gamma}_{2t}$ is statistically more noticeable than that of $\tilde{\gamma}_{3t}$, but there are periods (1941–45, 1956–60) when the values of F for both $\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{3t}$ are large.

The F -statistics for $\hat{\gamma}_{1t} = \tilde{\gamma}_{1t} + \tilde{\phi}_{1t}$ also indicate that $\tilde{\gamma}_{1t}$ has substantial variation through time. This is not surprising, however, since $\hat{\gamma}_{1t}$ is always directly related to \tilde{R}_{mt} . For example, from equation (12), for the one-variable model of panel A, $\hat{\gamma}_{1t} = \tilde{R}_{mt} - \hat{\gamma}_{0t}$.

Finally, the F -statistics for $\hat{\gamma}_{0t} = \tilde{\gamma}_{0t} + \tilde{\phi}_{0t}$ are also in general large. And the month-by-month variation in $\tilde{\gamma}_{0t}$ cannot be accounted for by variation in R_{ft} . The variance of R_{ft} is so small relative to $s^2(\hat{\gamma}_{0t})$, $s^2(\tilde{\gamma}_{0t})$, and $s^2(\tilde{\phi}_{0t})$ that doing the F -tests in terms of $\hat{\gamma}_{0t} - R_{ft}$ produces results almost identical with those for $\hat{\gamma}_{0t}$.

Rejection of the hypothesis that $\tilde{\gamma}_{0t} - R_{ft} = 0$ does not imply rejection of the S-L hypothesis—to be tested next—that $E(\tilde{\gamma}_{0t}) = R_{ft}$. Likewise, to find that month-by-month $\tilde{\gamma}_{2t} \neq 0$ and $\tilde{\gamma}_{3t} \neq 0$ does not imply rejection of hypotheses C1 and C2 of the two-parameter model. These hypotheses, which we are unable to reject on the basis of the results in table 3, say that $E(\tilde{\gamma}_{2t}) = 0$ and $E(\tilde{\gamma}_{3t}) = 0$.

What we have found in table 5 is that there are variables in addition to $\hat{\beta}_p$ that systematically affect period-by-period returns. Some of these omitted variables are apparently related to $\hat{\beta}_p^2$ and $\bar{s}_p(\hat{\epsilon}_i)$. But the latter are almost surely proxies, since there is no economic rationale for their presence in our stochastic risk-return model.

n	$F_{.90}$	$F_{.95}$	$F_{.975}$	$F_{.99}$	$F_{.995}$
60 (120)	1.35	1.47	1.58	1.73	1.83
60 (∞)	1.29	1.39	1.48	1.60	1.69
120 (120)	1.26	1.35	1.43	1.53	1.61
120 (∞)	1.19	1.25	1.31	1.38	1.43

TABLE 5
COMPONENTS OF THE VARIANCES OF THE $\hat{\gamma}_{jt}$

PERIOD	$s^2(\tilde{\gamma}_0)$	$s^2(\hat{\gamma}_0)$	$s^2(\tilde{\phi}_0)$	F	$s^2(\tilde{\gamma}_1)$	$s^2(\hat{\gamma}_1)$	$s^2(\tilde{\phi}_1)$	F
Panel A:								
1935-6/68 ...	.00105	.00142	.00037	3.84	.00401	.00436	.00035	12.46
1935-45 .....	.00182	.00273	.00091	3.00	.00863	.00950	.00087	10.92
1946-55 .....	.00057	.00066	.00009	7.33	.00163	.00171	.00008	21.38
1956-6/68 ...	.00077	.00090	.00013	6.92	.00181	.00193	.00012	16.08
1935-40 .....	.00265	.00404	.00139	2.91	.01212	.01347	.00135	9.98
1941-45 .....	.00086	.00118	.00032	3.69	.00452	.00481	.00029	16.59
1946-50 .....	.00086	.00094	.00008	11.75	.00216	.00224	.00008	28.00
1951-55 .....	.00027	.00036	.00009	4.00	.00113	.00121	.00008	15.12
1956-60 .....	.00032	.00041	.00009	4.56	.00104	.00112	.00008	21.50
1961-6/68 ...	.00100	.00114	.00014	8.14	.00217	.00231	.00014	16.50
Panel B:								
1935-6/68 ...	.00092	.00267	.00175	1.52	.00564	.01403	.00839	1.67
1935-45 .....	.00057	.00377	.00320	1.18	.00372	.01941	.01569	1.24
1946-55 .....	.00053	.00112	.00059	1.90	.00651	.00897	.00245	3.66
1956-6/68 ...	.00155	.00294	.00139	2.12	.00667	.01338	.00671	1.99
1935-40 .....	.00018	.00476	.00458	1.04	.00374	.02555	.02181	1.17
1941-45 .....	.00101	.00254	.00153	1.66	.00389	.01225	.00836	1.46
1946-50 .....	.00084	.00136	.00052	2.62	.00862	.01071	.00209	5.12
1951-55 .....	.00024	.00090	.00066	1.36	.00447	.00729	.00282	2.58
1956-60 .....	.00037	.00087	.00050	1.74	.00289	.00517	.00228	2.27
1961-6/68 ...	.00232	.00431	.00199	2.16	.00928	.01894	.00966	1.96
Panel C:								
1935-6/68 ...	.00192	.00266	.00075	3.55	.00285	.00428	.00142	3.01
1935-45 .....	.00394	.00533	.00139	3.83	.00433	.00717	.00283	2.52
1946-55 .....	.00083	.00101	.00018	5.61	.00261	.00310	.00050	6.20
1956-6/68 ...	.00100	.00164	.00063	2.60	.00178	.00270	.00092	2.93
1935-40 .....	.00473	.00669	.00196	3.41	.00732	.01094	.00362	3.02
1941-45 .....	.00307	.00377	.00070	5.38	.00085	.00274	.00189	1.45
1946-50 .....	.00103	.00117	.00014	8.36	.00386	.00439	.00053	8.28
1951-55 .....	.00061	.00083	.00022	3.77	.00140	.00188	.00047	4.00
1956-60 .....	.00079	.00134	.00055	2.44	.00106	.00204	.00098	2.08
1961-6/68 ...	.00109	.00177	.00068	2.60	.00212	.00300	.00088	3.41
Panel D:								
1935-6/68 ...	.00150	.00566	.00406	1.39	.00608	.01521	.00913	1.66
1935-45 .....	.00233	.01065	.00832	1.28	.00402	.02118	.01716	1.23
1946-55 .....	.00013	.00176	.00163	1.08	.00647	.00916	.00269	3.41
1956-6/68 ...	.00194	.00420	.00226	1.86	.00763	.01485	.00722	2.06
1935-40 .....	.00157	.01263	.01106	1.14	.00457	.02910	.02453	1.19
1941-45 .....	.00340	.00843	.00503	1.68	.00365	.01196	.00832	1.44
1946-50 .....	.00023	.00220	.00197	1.12	.00858	.01119	.00261	4.29
1951-55 .....	.00006	.00136	.00130	1.05	.00442	.00719	.00277	2.60
1956-60 .....	.00092	.00239	.00147	1.62	.00328	.00602	.00274	2.20
1961-6/68 ...	.00260	.00539	.00279	1.93	.01060	.02081	.01021	2.04

D. Tests of the S-L Hypothesis

In the Sharpe-Lintner two-parameter model of market equilibrium one has, in addition to conditions C1-C3, the hypothesis that $E(\tilde{\gamma}_{0t}) = R_{ft}$. The work of Friend and Blume (1970) and Black, Jensen, and Scholes (1972) suggests that the S-L hypothesis is not upheld by the data. At least in the post-World War II period, estimates of $E(\tilde{\gamma}_{0t})$ seem to be significantly greater than R_{ft} .

Each of the four models of table 3 can be used to test the S-L hypothe-

TABLE 5 (Continued)

PERIOD	$s^2(\hat{\gamma}_2)$	$s^2(\hat{\gamma}_2)$	$s^2(\hat{\phi}_2)$	F	$s^2(\hat{\gamma}_3)$	$s^2(\hat{\gamma}_3)$	$s^2(\hat{\phi}_3)$	F
Panel A:								
1935-6/68 ...	...	...	...	...	...	...	...	...
1935-45 .....	...	...	...	...	...	...	...	...
1946-55 .....	...	...	...	...	...	...	...	...
1956-6/68 ...	...	...	...	...	...	...	...	...
1935-40 .....	...	...	...	...	...	...	...	...
1941-45 .....	...	...	...	...	...	...	...	...
1946-50 .....	...	...	...	...	...	...	...	...
1951-55 .....	...	...	...	...	...	...	...	...
1956-60 .....	...	...	...	...	...	...	...	...
1961-6/68 ...	...	...	...	...	...	...	...	...
Panel B:								
1935-6/68 ...	.00121	.00318	.00197	1.61	...	...	...	...
1935-45 .....	.00171	.00548	.00377	1.45	...	...	...	...
1946-55 .....	.00063	.00112	.00049	2.29	...	...	...	...
1956-6/68 ...	.00122	.00278	.00156	1.78	...	...	...	...
1935-40 .....	.00041	.00566	.00524	1.08	...	...	...	...
1941-45 .....	.00327	.00527	.00201	2.62	...	...	...	...
1946-50 .....	.00066	.00103	.00037	2.78	...	...	...	...
1951-55 .....	.00058	.00120	.00062	1.94	...	...	...	...
1956-60 .....	.00033	.00083	.00050	1.66	...	...	...	...
1961-6/68 ...	.00182	.00410	.00227	1.81	...	...	...	...
Panel C:								
1935-6/68 ...	...	...	...	...	.341	.753	.412	1.83
1935-45 .....	...	...	...	...	.535	.847	.313	2.71
1946-55 .....	...	...	...	...	.165	.370	.206	1.80
1956-6/68 ...	...	...	...	...	.304	.968	.664	1.46
1935-40 .....	...	...	...	...	.270	.553	.282	1.96
1941-45 .....	...	...	...	...	.840	1.189	.349	3.41
1946-50 .....	...	...	...	...	.118	.254	.136	1.87
1951-55 .....	...	...	...	...	.217	.493	.276	1.79
1956-60 .....	...	...	...	...	.622	1.355	.734	1.85
1961-6/68 ...	...	...	...	...	.105	.722	.617	1.17
Panel D:								
1935-6/68 ...	.00061	.00362	.00301	1.21	.276	.864	.588	1.47
1935-45 .....	...	.00624	.00644	.97	.392	1.001	.613	1.63
1946-55 .....	.00061	.00148	.00087	1.70	.028	.383	.355	1.08
1956-6/68 ...	.00134	.00304	.00169	1.80	.374	1.125	.751	1.50
1935-40 .....	...	.00723	.00886	.82	.120	.682	.562	1.21
1941-45 .....	.00162	.00515	.00353	1.46	.720	1.395	.675	2.07
1946-50 .....	.00083	.00180	.00096	1.87	.023	.348	.325	1.07
1951-55 .....	.00039	.00116	.00077	1.51	.038	.424	.386	1.10
1956-60 .....	.00037	.00103	.00066	1.56	.712	1.654	.941	1.76
1961-6/68 ...	.00202	.00440	.00238	1.85	.163	.787	.624	1.26

sis.¹² The most efficient tests, however, are provided by the one-variable

¹² The least-squares intercepts $\hat{\gamma}_{0t}$ in the four cross-sectional risk-return regressions can always be interpreted as returns for month t on zero- $\hat{\beta}$ portfolios ($n = 10$). For the three-variable model of panel D, table 3, the unbiasedness of the least-squares coefficients can be shown to imply that in computing $\hat{\gamma}_{0t}$, negative and positive weights are assigned to the 20 portfolios in such a way that the resulting portfolio has not only zero- $\hat{\beta}$ but also zero averages of the 20 $\hat{\beta}_p^2$ and of the 20 $\hat{s}_p(\hat{\epsilon}_t)$. Analogous statements apply to the two-variable models of panels B and C.

Black, Jensen, and Scholes test the S-L hypothesis with a time series of monthly returns on a "minimum variance zero- $\hat{\beta}$ portfolio" which they derive directly. It turns

model of panel A, since the values of $s(\hat{\gamma}_0)$ for this model [which are nearly identical with the values of $s(\hat{\gamma}_0 - \bar{R}_f)$] are substantially smaller than those for other models. Except for the most recent period 1961-6/68, the values of $\overline{\hat{\gamma}_0 - \bar{R}_f}$ in panel A are all positive and generally greater than 0.4 percent per month. The value of $t(\overline{\hat{\gamma}_0 - \bar{R}_f})$ for the overall period 1935-6/68 is 2.55, and the t -statistics for the subperiods 1946-55, 1951-55, and 1956-60 are likewise large. Thus, the results in panel A, table 3, support the negative conclusions of Friend and Blume (1970) and Black, Jensen, and Scholes (1972) with respect to the S-L hypothesis.

The S-L hypothesis seems to do somewhat better in the two-variable quadratic model of panel B, table 3 and especially in the three-variable model of panel D. The values of $t(\overline{\hat{\gamma}_0 - \bar{R}_f})$ are substantially closer to zero for these models than for the model of panel A. This is due to values of $\overline{\hat{\gamma}_0 - \bar{R}_f}$ that are closer to zero, but it also reflects the fact that $s(\hat{\gamma}_0)$ is substantially higher for the models of panels B and D than for the model of panel A.

But the effects of $\hat{\beta}_p^2$ and $\bar{s}_p(\hat{\epsilon}_i)$ on tests of the S-L hypothesis are in fact not at all so clear-cut. Consider the model

$$\tilde{R}_{it} = \tilde{\gamma}'_{0t} + \tilde{\gamma}'_{1t}\beta_i + \tilde{\gamma}_{2t}(1 - \beta_i)^2 + \tilde{\gamma}_{3t}s_i + \tilde{\eta}_{it}. \quad (13)$$

Equations (7) and (13) are equivalent representations of the stochastic process generating returns, with $\tilde{\gamma}_{1t} = \tilde{\gamma}'_{1t} - 2\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{0t} = \tilde{\gamma}'_{0t} + \tilde{\gamma}_{2t}$. Moreover, if the steps used to obtain the regression equation (10) from the stochastic model (7) are applied to (13), we get the regression equation,

$$R_{pt} = \hat{\gamma}'_{0t} + \hat{\gamma}'_{1t}\hat{\beta}_p + \hat{\gamma}_{2t}(1 - \hat{\beta}_p)^2 + \hat{\gamma}_{3t}\bar{s}_p(\hat{\epsilon}_i) + \hat{\eta}_{pt}, \quad (14)$$

where, just as $\hat{\beta}_p^2$ in (10) is the average of $\hat{\beta}_i^2$ for securities i in portfolio p , $(1 - \hat{\beta}_p)^2$ is the average of $(1 - \hat{\beta}_i)^2$. The values of the estimates $\hat{\gamma}_{2t}$ and $\hat{\gamma}_{3t}$ are identical in (10) and (14); in addition, $\hat{\gamma}_{1t} = \hat{\gamma}'_{1t} - 2\hat{\gamma}_{2t}$ and $\hat{\gamma}_{0t} = \hat{\gamma}'_{0t} + \hat{\gamma}_{2t}$. But although the regression equations (10) and (14) are statistically indistinguishable, tests of the hypothesis $E(\tilde{\gamma}_{0t}) =$

out, however, that this portfolio is constructed under what amounts to the assumptions of the Gauss-Markov Theorem on the underlying disturbances of the one-variable risk-return regression (11). With these assumptions the least-squares estimate $\hat{\gamma}_{0t}$, obtained from the cross-sectional risk-return regression of (11) for month t , is precisely the return for month t on the minimum variance zero- β portfolio that can be constructed from the 20 portfolio $\hat{\beta}_p$. Thus, the tests of the S-L hypothesis in panel A of table 3 are conceptually the same as those of Black, Jensen, and Scholes.

If one makes the assumptions of the Gauss-Markov Theorem on the underlying disturbances of the models of panels B-D of table 3, the regression intercepts for these models can likewise be interpreted as returns on minimum-variance zero- β portfolios. These portfolios then differ in terms of whether or not they also constrain the averages of the 20 $\hat{\beta}_p^2$ and of the 20 $\bar{s}_p(\hat{\epsilon}_i)$ to be zero. Given the collinearity of $\hat{\beta}_p$, $\hat{\beta}_p^2$, and $\bar{s}_p(\hat{\epsilon}_i)$, however, the assumptions of the Gauss-Markov Theorem cannot apply to all four of the models.

R_{jt} from (10) do not yield the same results as tests of the hypothesis $E(\hat{\gamma}'_{0t}) = R_{jt}$ from (14). In panel D of table 3, $\hat{\gamma}_0 - R_j$ is never statistically very different from zero, whereas in tests (not shown) from (14), the results are similar to those of panel A, table 3. That is, $\hat{\gamma}'_0 - R_j$ is systematically positive for all periods but 1961–6/68 and statistically very different from zero for the overall period 1935–6/68 and for the 1946–55, 1951–55, and 1956–60 subperiods.

Thus, tests of the S-L hypothesis from our three-variable models are ambiguous. Perhaps the ambiguity could be resolved and more efficient tests of the hypothesis could be obtained if the omitted variables for which $\bar{\sigma}_p(\hat{\epsilon}_t)$, $\hat{\beta}_p^2$, or $(1 - \hat{\beta}_p)^2$ are almost surely proxies were identified. As indicated above, however, at the moment the most efficient tests of the S-L hypothesis are provided by the one-variable model of panel A, table 3, and the results for that model support the negative conclusions of others.

Given that the S-L hypothesis is not supported by the data, tests of the market efficiency hypothesis that $\tilde{\gamma}_{0t} - E(\tilde{R}_{0t})$ is a fair game are difficult since we no longer have a specific hypothesis about $E(\tilde{R}_{0t})$. And using the mean of the $\hat{\gamma}_{0t}$ as an estimate of $E(\tilde{R}_{0t})$ does not work as well in this case as it does for the market efficiency tests on γ_{1t} . One should note, however, that although the serial correlations $\rho_M(\hat{\gamma}_0)$ in table 4 are often large relative to estimates of their standard errors, they are small in terms of the proportion of the time series variance of $\hat{\gamma}_{0t}$ that they explain, and the latter is the more important criterion for judging whether market efficiency is a workable representation of reality (see n. 8).

VI. Conclusions

In sum our results support the important testable implications of the two-parameter model. Given that the market portfolio is efficient—or, more specifically, given that our proxy for the market portfolio is at least approximately efficient—we cannot reject the hypothesis that average returns on New York Stock Exchange common stocks reflect the attempts of risk-averse investors to hold efficient portfolios. Specifically, on average there seems to be a positive tradeoff between return and risk, with risk measured from the portfolio viewpoint. In addition, although there are “stochastic nonlinearities” from period to period, we cannot reject the hypothesis that on average their effects are zero and unpredictably different from zero from one period to the next. Thus, we cannot reject the hypothesis that in making a portfolio decision, an investor should assume that the relationship between a security’s portfolio risk and its expected return is linear, as implied by the two-parameter model. We also cannot reject the hypothesis of the two-parameter model that no measure of risk, in addition to portfolio risk, systematically affects average returns. Finally, the observed fair game properties of the coefficients and residuals of the

risk-return regressions are consistent with an efficient capital market—that is, a market where prices of securities fully reflect available information.

Appendix

Some Related Issues

A1. Market Models and Tests of Market Efficiency

The time series of regression coefficients from (10) are, of course, the inputs for the tests of the two-parameter model. But these coefficients can also be useful in tests of capital market efficiency—that is, tests of the speed of price adjustment to different types of new information. Since the work of Fama et al. (1969), such tests have commonly been based on the “one-factor market model”:

$$R_{it} = \hat{\alpha}_i + \hat{\beta}_i R_{mt} + \hat{\epsilon}_{it}. \quad (15)$$

In this regression equation, the term involving R_{mt} is assumed to capture the effects of market-wide factors. The effects on returns of events specific to company i , like a stock split or a change in earnings, are then studied through the residuals $\hat{\epsilon}_{it}$.

But given that there is period-to-period variation in $\hat{\gamma}_{0t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$ in (10) that is above and beyond pure sampling error, then these coefficients can be interpreted as market factors, (in addition to R_{mt}) that influence the returns on all securities. To see this, substitute (12) into (11) to obtain the “two-factor market model”:

$$R_{pt} = \hat{\gamma}_{0t}(1 - \hat{\beta}_p) + \hat{\beta}_p R_{mt} + \hat{\eta}_{pt}. \quad 16$$

In like fashion, from equation (10) itself we easily obtain the “four-factor market model”:

$$R_{pt} = \hat{\gamma}_{0t}(1 - \hat{\beta}_p) + \hat{\beta}_p R_{mt} + \hat{\gamma}_{2t}(\hat{\beta}_p^2 - \hat{\beta}_p \bar{\beta}^2) + \hat{\gamma}_{3t} [\bar{s}_p(\hat{\epsilon}_i) - \hat{\beta}_p \bar{s}(\hat{\epsilon}_i)] + \hat{\eta}_{pt}, \quad (17)$$

where $\bar{\beta}^2$ and $\bar{s}(\hat{\epsilon}_i)$ are the averages over p of the $\hat{\beta}_p^2$ and the $\bar{s}_p(\hat{\epsilon}_i)$.

Comparing equations (15–17) it is clear that the residuals $\hat{\epsilon}_{it}$ from the one-factor market model contain variation in the market factors $\hat{\gamma}_{0t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$. Thus, if one is interested in the effect on a security's return of an event specific to the given company, this effect can probably be studied more precisely from the residuals of the two- or even the four-factor market models of (16) and (17) than from the one-factor model of (15). This has in fact already been done in a study of changes in accounting techniques by Ball (1972), in a study of insider trading by Jaffe (1972), and in a study of mergers by Mandelker (1972).

Ball, Jaffe, and Mandelker use the two-factor rather than the four-factor market model, and there is probably some basis for this. First, one can see from table 5 that because of the collinearity of $\hat{\beta}_p$, $\hat{\beta}_p^2$, and $\bar{s}_p(\hat{\epsilon}_i)$, the coefficient estimates $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$ have much smaller standard errors in the two-factor model. Second, we have computed residual variances for each of our 20 portfolios for various time periods from the time series of $\hat{\epsilon}_{pt}$ and $\hat{\eta}_{pt}$ from (15), (16), and (17). The decline in residual variance that is obtained in

going from (15) to (16) is as predicted: That is, the decline is noticeable over more or less the entire range of $\hat{\beta}_p$ and it is proportional to $(1 - \hat{\beta}_p)^2$. On the other hand, in going from the two- to the four-factor model, reductions in residual variance are generally noticeable only in the portfolios with the lowest and highest $\hat{\beta}_p$, and the reductions for these two portfolios are generally small. Moreover, including $\tilde{\varepsilon}_i$ as an explanatory variable in addition to $\hat{\beta}_p$ and $\hat{\beta}_p^2$ never results in a noticeable reduction in residual variances.

A2. Multifactor Models and Errors in the $\hat{\beta}$

If the return-generating process is a multifactor market model, then the usual estimates of β_i from the one-factor model of (15) are not most efficient. For example, if the return-generating process is the population analog of (16), more efficient estimates of β_i could in principle be obtained from a constrained regression applied to

$$\tilde{R}_{it} - \tilde{\gamma}_{0t} = \beta_i(\tilde{R}_{mt} - \tilde{\gamma}_{0t}) + \tilde{\eta}_{it}.$$

But this approach requires the time series of the true $\tilde{\gamma}_{0t}$. All we have are estimates $\hat{\gamma}_{0t}$, themselves obtained from estimates of $\hat{\beta}_p$ from the one-factor model of (15).

It can also be shown that with a multifactor return-generating process the errors in the $\hat{\beta}$ computed from the one-factor market model of (8) and (15) are correlated across securities and portfolios. This results from the fact that if the true process is a multifactor model, the disturbances of the one-factor model are correlated across securities and portfolios. Moreover, the interdependence of the errors in the $\hat{\beta}$ is higher the farther the true β 's are from 1.0. This was already noted in the discussion of table 2 where we found that the relative reduction in the standard errors of the $\hat{\beta}$'s obtained by using portfolios rather than individual securities is lower the farther $\hat{\beta}_p$ is from 1.0.

Interdependence of the errors in the $\hat{\beta}_p$ also complicates the formal analysis of the effects of errors-in-the-variables on properties of the estimated coefficients (the $\hat{\gamma}_{jt}$) in the risk-return regressions of (10). This topic is considered in detail in an appendix to an earlier version of this paper that can be made available to the reader on request.

References

- Ball, R. "Changes in Accounting Techniques and Stock Prices." Ph.D. dissertation, University of Chicago, 1972.
- Black, F. "Capital Market Equilibrium with Restricted Borrowing." *J. Bus.* 45 (July 1972): 444-55.
- Black, F.; Jensen, M.; Scholes, M. "The Capital Asset Pricing Model: Some Empirical Results." In *Studies in the Theory of Capital Markets*, edited by Michael Jensen. New York: Praeger, 1972.
- Blume, M. E. "Portfolio Theory: A Step toward Its Practical Application." *J. Bus.* 43 (April 1970): 152-73.
- Douglas, G. W. "Risk in the Equity Markets: An Empirical Appraisal of Market Efficiency." *Yale Econ. Essays* 9 (Spring 1969): 3-45.
- Fama, E. F. "The Behavior of Stock Market Prices." *J. Bus.* 38 (January 1965): 34-105. (a)
- . "Portfolio Analysis in a Stable Paretian Market." *Management Sci.* 11 (January 1965): 404-19. (b)

- . "Multiperiod Consumption-Investment Decisions." *A.E.R.* 60 (March 1970): 163-74. (a)
- . "Efficient Capital Markets: A Review of Theory and Empirical Work." *J. Finance* 25 (May 1970): 383-417. (b)
- . "Risk, Return and Equilibrium." *J.P.E.* 79 (January/February 1971): 30-55.
- Fama, E. F., and Blasiak, H. "Dividend Policy: An Empirical Analysis." *J. American Statis. Assoc.* 48 (December 1968): 1132-61.
- Fama, E. F.; Fisher, L.; Jensen, M.; Roll, R. "The Adjustment of Stock Prices to New Information." *Internat. Econ. Rev.* 10 (February 1969): 1-21.
- Fama, E. F., and Miller, M. *The Theory of Finance*. New York: Holt, Rinehart & Winston, 1972.
- Fama, E. F., and Roll, R. "Some Properties of Symmetric Stable Distributions." *J. American Statis. Assoc.* 48 (September 1968): 817-36.
- Fisher, L. "Some New Stock Market Indexes." *J. Bus.* 39 (January 1966): 191-225.
- Friend, L., and Blume, M. "Measurement of Portfolio Performance under Uncertainty." *A.E.R.* 60 (September 1970): 561-75.
- Gonedes, N. J. "Evidence on the Information Content of Accounting Numbers: Accounting-based and Market-based Estimates of Systematic Risk." *J. Financial and Quantitative Analysis* (1973): in press.
- Jaffe, J. "Security Regulation, Special Information, and Insider Trading." Ph.D. dissertation, University of Chicago, 1972.
- Jensen, M. "The Foundations and Current State of Capital Market Theory." *Bell J. Econ. and Management Sci.* 3 (Autumn 1972): 357-98.
- Lintner, J. "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets." *Rev. Econ. and Statis.* 47 (February 1965): 13-37.
- Mandelker, G. "Returns to Stockholders from Mergers." Ph.D. proposal, University of Chicago, 1972.
- Markowitz, H. *Portfolio Selection: Efficient Diversification of Investments*. New York: Wiley, 1959.
- Miller, K. D. "Futures Trading and Investor Returns: An Investigation of Commodity Market Risk Premiums." Ph.D. dissertation, University of Chicago, 1971.
- Miller, M., and Scholes, M. "Rates of Return in Relation to Risk: A Re-Examination of Some Recent Findings." In *Studies in the Theory of Capital Markets*, edited by Michael Jensen. New York: Praeger, 1972.
- Mood, A. M., and Graybill, F. A. *Introduction to the Theory of Statistics*. New York: McGraw-Hill, 1963.
- Officer, R. R. "A Time Series Examination of the Market Factor of the New York Stock Exchange." Ph.D. dissertation, University of Chicago, 1971.
- Roll, R. *The Behavior of Interest Rates*. New York: Basic, 1970.
- Sharpe, W. F. "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk." *J. Finance* 19 (September 1964): 425-42.
- Tobin, J. "Liquidity Preference as Behavior towards Risk." *Rev. Econ. Studies* 25 (February 1958): 65-86.

*The Capital Asset Pricing Model: Some Empirical Tests**

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1. Introduction and Summary

Considerable attention has recently been given to general equilibrium models of the pricing of capital assets. Of these, perhaps the best known is the mean-variance formulation originally developed by Sharpe [1964] and Treynor [1961], and extended and clarified by Lintner [1965a, b], Mossin [1966], Fama [1968a, b], and Long [1972]. In addition Treynor [1965], Sharpe [1966], and Jensen [1968, 1969] have developed portfolio evaluation models which are either based on this asset pricing model or bear a close relation to it. In the development of the asset pricing model it is assumed that (1) all investors are single period risk-averse utility of terminal wealth maximizers and can choose among portfolios solely on the basis of mean and variance, (2) there are no taxes or

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transactions costs, (3) all investors have homogeneous views regarding the parameters of the joint probability distribution of all security returns, and (4) all investors can borrow and lend at a given riskless rate of interest. The main result of the model is a statement of the relation between the expected risk premiums on individual assets and their "systematic risk." The relationship is

$$E(\tilde{R}_j) = E(\tilde{R}_M)\beta_j \quad (1)$$

where the tildes denote random variables and

$$E(\tilde{R}_j) = \frac{E(\tilde{P}_j) - P_{t-1} + E(\tilde{D}_j)}{P_{t-1}} - r_{Ft} = \text{expected excess returns on the } j\text{th asset}$$

\tilde{D}_j = dividends paid on the j th security at time t

r_{Ft} = the riskless rate of interest

$E(\tilde{R}_M)$ = expected excess returns on a "market portfolio" consisting of an investment in every asset outstanding in proportion to its value

$$\beta_j = \frac{\text{cov}(\tilde{R}_j, \tilde{R}_M)}{\sigma^2(\tilde{R}_M)} = \text{the "systematic" risk of the } j\text{th asset.}$$

Relation 1 says that the expected excess return on any asset is directly proportional to its β . If we define α_j as

$$\alpha_j = E(\tilde{R}_j) - E(\tilde{R}_M)\beta_j$$

then (1) implies that the α on every asset is zero.

If empirically true, the relation given by (1) has wide-ranging implications for problems in capital budgeting, cost benefit analysis, portfolio selection, and for other economic problems requiring knowledge of the relation between risk and return. Evidence presented by Jensen [1968, 1969] on the relationship between the expected return and systematic risk of a large sample of mutual funds suggests that (1) might provide an adequate description of the relation between risk and return for securities. On the other hand, evidence presented by Douglas [1969], Lintner [1965], and most recently Miller and Scholes [1972] seems to indicate the model does not provide a complete description of the structure of security returns. In particular, the work done by Miller and Scholes suggests that the α 's on individual assets depend in a systematic way on their β 's: that high-beta assets tend to have negative α 's, and that low-beta stocks tend to have positive α 's.

Our main purpose is to present some additional tests of this asset pricing model which avoid some of the problems of earlier studies and which, we believe, provide additional insights into the nature of the structure of security returns. All previous direct tests of the model have been conducted using cross-sectional methods; primarily regression of \tilde{R}_j , the mean excess return over a time interval for a set of securities on estimates of the systematic risk, $\hat{\beta}_j$, of each of the securities. The equation

$$\tilde{R}_j = \gamma_0 + \gamma_1 \hat{\beta}_j + \tilde{u}_j$$

was estimated, and contrary to the theory, γ_0 seemed to be significantly different from zero and γ_1 significantly different from \tilde{R}_M , the slope predicted by the model. We shall show in Section III that, because of the structure of the process which appears to be generating the data, these cross-sectional tests of significance can be misleading and therefore do not provide direct tests of the validity of (1). In Section II we provide a more powerful time series test of the validity of the model, which is free of the difficulties associated with the cross-sectional tests. These results indicate that the usual form of the asset pricing model as given by (1) does not provide an accurate description of the structure of security returns. The tests indicate that the expected excess returns on high-beta assets are lower than (1) suggests and that the expected excess returns on low-beta assets are higher than (1) suggests. In other words, that high-beta stocks have negative α 's and low-beta stocks have positive α 's.

The data indicate that the expected return on a security can be represented by a two-factor model such as

$$E(\tilde{r}_j) = E(\tilde{r}_2)(1 - \beta_j) + E(\tilde{r}_M)\beta_j \quad (2)$$

where the r 's indicate total returns and $E(\tilde{r}_2)$ is the expected return on a second factor, which we shall call the "beta factor," since its coefficient is a function of the asset's β . After we had observed this phenomenon, Black [1970] was able to show that relaxing the assumption of the existence of riskless borrowing and lending opportunities provides an asset pricing model which implies that, in equilibrium, the expected return on an asset will be given by (2). His results furnish an explicit definition of the beta factor, \tilde{r}_2 , as the return on a portfolio that has a zero covariance with the return on the market portfolio \tilde{r}_M . Although this model is entirely

consistent with our empirical results (and provides a convenient interpretation of them), there are perhaps other plausible hypotheses consistent with the data (we shall briefly discuss several in Section V). We hasten to add that we have not attempted here to supply any direct tests of these alternative hypotheses.

The evidence presented in Section II indicates the expected excess return on an asset is not strictly proportional to its β , and we believe that this evidence, coupled with that given in Section IV, is sufficiently strong to warrant rejection of the traditional form of the model given by (1). We then show in Section III how the cross-sectional tests are subject to measurement error bias, provide a solution to this problem through grouping procedures, and show how cross-sectional methods are relevant to testing the expanded two-factor form of the model. Here we find that the evidence indicates the existence of a linear relation between risk and return and is therefore consistent with a form of the two-factor model which specifies the realized returns on each asset to be a linear function of the returns on the two factors \bar{r}_2 and \bar{r}_M ,

$$\bar{r}_j = \bar{r}_2(1 - \beta_j) + \bar{r}_M\beta_j + \bar{w}_j \quad (2)$$

The fact that the α 's of high-beta securities are negative and that the α 's of low-beta securities are positive implies that the mean of the beta factor is greater than r_f . The traditional form of the capital asset pricing model as expressed by (1), could hold exactly, even if asset returns were generated by (2'), if the mean of the beta factor were equal to the risk-free rate. We show in Section IV that the mean of the beta factor has had a positive trend over the period 1931-65 and was on the order of 1.0 to 1.3% per month in the two sample intervals we examined in the period 1948-65. This seems to have been significantly different from the average risk-free rate and indeed is roughly the same size as the average market return of 1.3 and 1.2% per month over the two sample intervals in this period. This evidence seems to be sufficiently strong enough to warrant rejection of the traditional form of the model given by (1). In addition, the standard deviation of the beta factor over these two sample intervals was 2.0 and 2.2% per month, as compared with the standard deviation of the market factor of 3.6 and 3.8% per month. Thus the beta factor seems to be an important determinant of security returns.

II. Time Series Tests of the Model

A. *Specification of the Model.* Although the model of (1) which we wish to test is stated in terms of expected returns, it is possible to use realized returns to test the theory. Let us represent the returns on any security by the "market model" originally proposed by Markowitz [1959] and extended by Sharpe [1963] and Fama [1968a]

$$\bar{R}_j = E(\bar{R}_j) + \beta_j \bar{R}'_M + \bar{e}_j \quad (3)$$

where $\bar{R}'_M = \bar{R}_M - E(\bar{R}_M)$ is the "unexpected" excess market return, and \bar{R}'_M and \bar{e}_j are normally distributed random variables that satisfy:

$$E(\bar{R}'_M) = 0 \quad (4a)$$

$$E(\bar{e}_j) = 0 \quad (4b)$$

$$E(\bar{e}_j \bar{R}'_M) = 0 \quad (4c)$$

The specifications of the market model, extensively tested by Fama et al. [1969] and Blume [1968], are well satisfied by the data for a large number of securities on the New York Stock Exchange. The only assumption violated to any extent is the normality assumption¹—the estimated residuals seem to conform to the infinite variance members of the stable class of distributions rather than the normal. There are those who would explain these discrepancies from normality by certain nonstationarities in the distributions (cf. Press [1967]), which still yield finite variances. However, Wise [1963] has shown that the least-squares estimate of β_j in (3) is unbiased (although not efficient) even if the variance does not exist, and simulations by Blattberg and Sargent [1968] and Fama and Babiak [1968] also indicate that the least-squares procedures are not totally inappropriate in the presence of infinite variance stable distributions. For simplicity, therefore, we shall ignore the nonnormality issues and continue to assume normally distributed random variables where relevant.² However, because of these problems caution should be exercised in making literal interpretations of any significance tests.

Substituting from (1) for $E(\bar{R}_j)$ in (3) we obtain

$$\bar{R}_j = \bar{R}_M\beta_j + \bar{e}_j \quad (5)$$

where \bar{R}_M is the ex post excess return on the market portfolio over the holding period of interest. If assets are priced in the market such that (1) holds over each short time interval (say a

month), then we can test the traditional form of the model by adding an intercept α_j to (5) and subscripting each of the variables by t to obtain

$$\bar{R}_{jt} = \alpha_j + \beta_j \bar{R}_{Mt} + \bar{e}_{jt} \quad (6)$$

which, given the assumptions of the market model, is a regression equation. If the asset pricing and the market models given by (1), (3), and (4) are valid, then the intercept α_j in (6) will be zero. Thus a direct test of the model can be obtained by estimating (6) for a security over some time period and testing to see if α_j is significantly different from zero.^{3,4}

B. An Aggregation Problem. The test just proposed is simple but inefficient, since it makes use of information on only a single security whereas data is available on a large number of securities. We would like to design a test that allows us to aggregate the data on a large number of securities in an efficient manner. If the estimates of the α_j 's were independent with normally distributed residuals, we could proceed along the lines outlined by Jensen [1968] and compare the frequency distributions of the "t" values for the intercepts with the theoretical distribution. However, the fact that the e_{jt} are not cross-sectionally independent, (that is, $E(\bar{e}_{jt}\bar{e}_{it}) \neq 0$ for $i \neq j$, cf. King [1966]); makes this procedure much more difficult.

One procedure for solving this problem which makes appropriate allowance for the effects of the nonindependence of the residuals on the standard error of estimate of the average coefficient, $\bar{\alpha}$, is to run the tests on grouped data. That is, we form portfolios (or groups) of the individual securities and estimate (6) defining \bar{R}_{Kt} to be the average return on all securities in the K th portfolio for time t . Given this definition of \bar{R}_{Kt} , $\hat{\beta}_K$ will be the average risk of the securities in the portfolio and $\hat{\alpha}_K$ will be the average intercept. Moreover, since the residual variance from this regression will incorporate the effects of any cross-sectional interdependencies in the \bar{e}_{jt} among the securities in each portfolio, the standard error of the intercept $\hat{\alpha}_K$ will appropriately incorporate the nonindependence of \bar{e}_{jt} .

In addition, we wish to group our securities such that we obtain the maximum possible dispersion of the risk coefficients, β_K . If we were to construct our portfolios by using the ranked values of the $\hat{\beta}_j$, we would introduce a selection bias into the procedure. This would occur because those securities

entering the first or high-beta portfolio would tend to have positive measurement errors in their $\hat{\beta}_j$, and this would introduce positive bias in $\hat{\beta}_K$, the estimated portfolio risk coefficient. This positive bias in $\hat{\beta}_K$ will, of course, introduce a negative bias in our estimate of the intercept, $\hat{\alpha}_K$, for that portfolio. On the other hand, the opposite would occur for the lowest beta portfolio; its $\hat{\beta}_K$ would be negatively biased, and therefore our estimate of the intercept for this low-risk portfolio would be positively biased. Thus even if the traditional model were true, this selection bias would tend to cause the low-risk portfolios to exhibit positive intercepts and high-risk portfolios to exhibit negative intercepts. To avoid this bias, we need to use an instrumental variable that is highly correlated with $\hat{\beta}_j$, but that can be observed independently of $\hat{\beta}_j$. The instrumental variable we have chosen is simply an independent estimate of the β of the security obtained from past data. Thus when we estimate the group risk parameter on sample data not used in the ranking procedures, the measurement errors in these estimates will be independent of the errors in the coefficients used in the ranking and we therefore obtain unbiased estimates of $\hat{\beta}_K$ and $\hat{\alpha}_K$.

C. The Data. The data used in the tests to be described were taken from the University of Chicago Center for Research in Security Prices Monthly Price Relative File, which contains monthly price, dividend, and adjusted price and dividend information for all securities listed on the New York Stock Exchange in the period January, 1926–March, 1966. The monthly returns on the market portfolio R_{Mt} were defined as the returns that would have been earned on a portfolio consisting of an equal investment in every security listed on the NYSE at the beginning of each month. The risk-free rate was defined as the 30-day rate on U.S. Treasury Bills for the period 1948–66. For the period 1926–47 the dealer commercial paper rate⁵ was used because Treasury Bill rates were not available.

D. The Grouping Procedure

1. *The ranking procedure.* Ideally we would like to assign the individual securities to the various groups on the basis of the ranked β_j (the true coefficients), but of course these are unobservable. In addition we cannot assign them on the basis of the $\hat{\beta}_j$, since this would introduce the selection bias prob-

lems discussed previously. Therefore, we must use a ranking procedure that is independent of the measurement errors in the $\hat{\beta}_j$. One way to do this is to use part of the data—in our case five years of previous monthly data—to obtain estimates $\hat{\beta}_{j0}$ of the risk measures for each security. The ranked values of the $\hat{\beta}_{j0}$ are used to assign membership to the groups. We then use data from a subsequent time period to estimate the group risk coefficients $\hat{\beta}_k$, which then contain measurement errors for the individual securities, which are independent of the errors in $\hat{\beta}_{j0}$ and hence independent of the original ranking and independent among the securities in each group.

2. *The stationarity assumptions.* The group assignment procedure just described will be satisfactory as long as the coefficients β_j are stationary through time. Evidence presented by Blume [1968] indicates this assumption is not totally inappropriate, but we have used a somewhat more complicated procedure for grouping the firms which allows for any non-stationarity in the coefficients through time.

We began by estimating the coefficient β_j , (call this estimate $\hat{\beta}_{j0}$) in (6) for the five-year period January, 1926–December, 1930 for all securities listed on the NYSE at the beginning of January 1931 for which at least 24 monthly returns were available. These securities were then ranked from high to low on the basis of the estimates $\hat{\beta}_{j0}$, and were assigned to ten portfolios⁶—the 10% with the largest $\hat{\beta}_{j0}$ to the first portfolio, and so on. The return in each of the next 12 months for each of the ten portfolios was calculated. Then the entire process was repeated for all securities listed as of January, 1932 (for which at least 24 months of previous monthly returns were available) using the immediately preceding five years of data (if available) to estimate new coefficients to be used for ranking and assignment to the ten portfolios. The monthly portfolio returns were again calculated for the next year. This process was then repeated for January, 1933, January, 1934, and so on, through January, 1965.

In this way we obtained 35 years of monthly returns on ten portfolios from the 1,952 securities in the data file. Since at each stage we used all listed securities for which at least 24 months of data were available in the immediately preceding five-year period, the total number of securities used in the analysis varied through time ranging from 582 to 1,094, and thus the number of securities contained in each portfolio changed from year to year.⁷ The total number of securities

from which the portfolios were formed at the beginning of each year is given in Table 1. Each of the portfolios may be thought of as a mutual fund portfolio, which has an identity of its own, even though the stocks it contains change over time.

TABLE 1
Total Number of Securities Entering
All Portfolios, by Year

Year	Number of Securities	Year	Number of Securities
1931	582	1949	893
1932	673	1950	928
1933	688	1951	943
1934	683	1952	966
1935	676	1953	994
1936	674	1954	1000
1937	666	1955	1006
1938	690	1956	994
1939	718	1957	994
1940	743	1958	1000
1941	741	1959	995
1942	757	1960	1021
1943	772	1961	1014
1944	778	1962	1024
1945	773	1963	1056
1946	791	1964	1081
1947	812	1965	1094
1948	842		

E. The Empirical Results

1. *The entire period.* Given the 35 years of monthly returns on each of the ten portfolios calculated as explained previously, we then calculated the least-squares estimates of the parameters α_k and β_k in (6) for each of the ten portfolios ($k = 1, \dots, 10$) using all 35 years of monthly data (420 observations). The results are summarized in Table 2. Portfolio number 1 contains the highest-risk securities and portfolio number 10 contains the lowest-risk securities. The estimated risk coefficients range from 1.561 for portfolio 1 to 0.499 for portfolio 10. The critical intercepts, the $\hat{\alpha}_k$, are given in the second line of Table 2 and the Student "t" values are given directly below them. The correlation between the portfolio returns and the market returns, $r(\bar{R}_k, \bar{R}_M)$, and the autocorrelation of the residuals, $r(\hat{e}_t, \hat{e}_{t-1})$, are also given in Table 2. The autocorrelation appears to be quite small and the correlation between the portfolio and market returns are, as expected, quite

TABLE 2
Summary of Statistics for Time Series Tests, Entire Period (January, 1931–December, 1965)
(Sample Size for Each Regression = 420)

Item*	Portfolio Number										\bar{R}_w
	1	2	3	4	5	6	7	8	9	10	
$\hat{\beta}$	1.5614	1.3838	1.2483	1.1625	1.0572	0.9229	0.8531	0.7534	0.6291	0.4992	1.0000
$\hat{\alpha} \cdot 10^2$	-0.0829	-0.1938	-0.0649	-0.0167	-0.0543	0.0593	0.0462	0.0812	0.1968	0.2012	
$t(\hat{\alpha})$	-0.4274	-1.9935	-0.7597	-0.2468	-0.8869	0.7878	0.7050	1.1837	2.3126	1.8684	
$r(\bar{R}, \bar{R}_w)$	0.9625	0.9875	0.9882	0.9914	0.9915	0.9833	0.9851	0.9793	0.9560	0.8981	
$r(\hat{\alpha}, \hat{\alpha}_i)$	0.0549	-0.0638	0.0366	0.0073	-0.0708	-0.1248	0.1294	0.1041	0.0444	0.0992	
$\sigma(\hat{\alpha})$	0.0393	0.0197	0.0173	0.0137	0.0124	0.0152	0.0133	0.0139	0.0172	0.0218	
\bar{R}	0.0213	0.0177	0.0171	0.0163	0.0145	0.0137	0.0126	0.0115	0.0109	0.0091	0.0142
σ	0.1445	0.1248	0.1126	0.1045	0.0950	0.0836	0.0772	0.0685	0.0586	0.0495	0.0891

* \bar{R} = average monthly excess returns, σ = standard deviation of the monthly excess returns, r = correlation coefficient.

high. The standard deviation of the residuals $\sigma(\hat{\epsilon}_k)$, the average monthly excess return \bar{R}_k , and the standard deviation of the monthly excess return, σ , are also given for each of the portfolios.

Note first that the intercepts $\hat{\alpha}$ are consistently negative for the high-risk portfolios ($\hat{\beta} > 1$) and consistently positive for the low-risk portfolios ($\hat{\beta} < 1$). Thus the high-risk securities earned less on average over this 35-year period than the amount predicted by the traditional form of the asset pricing model. At the same time, the low-risk securities earned more than the amount predicted by the model.

The significance tests given by the "t" values in Table 2 are somewhat inconclusive, since only 3 of the 10 coefficients have "t" values greater than 1.85 and, as we pointed out earlier, we should use some caution in interpreting these "t" values since the normality assumptions can be questioned. We shall see, however, that due to the existence of some non-stationarity in the relations and to the lack of more complete aggregation, these results vastly understate the significance of the departures from the traditional model.

2. *The subperiods.* In order to test the stationarity of the empirical relations, we divided the 35-year interval into four equal subperiods each containing 105 months. Table 3 presents a summary of the regression statistics of (6) calculated using the data for each of these periods for each of the ten portfolios. Note that the data for $\hat{\beta}$ in Table 3 indicate that, except for portfolios 1 and 10, the risk coefficients $\hat{\beta}_k$ were fairly stationary.

Note, however, in the sections for α and $t(\hat{\alpha})$ that the critical intercepts $\hat{\alpha}_k$, were most definitely nonstationary throughout this period. The positive α 's for the high-risk portfolios in the first subperiod (January, 1931–September, 1939) indicate that these securities earned more than the amount predicted by the model, and the negative α 's for the low-risk portfolios indicate they earned less than what the model predicted. In the three succeeding subperiods (October, 1939–June, 1948; July, 1948–March, 1957, and April, 1957–December, 1965) this pattern was reversed and the departures from the model seemed to become progressively larger; so much larger that six of the ten coefficients in the last subperiod seem significant. (Note that all six coefficients are those with $\hat{\beta}$'s most different from unity – a point we shall return to. Thus it seems unlikely that these changes were the result of chance; they most probably reflect changes in the α_k 's).

TABLE 3
Summary of Coefficients for the Subperiods

Item	Sub- period†	Portfolio Number										M _n
		1	2	3	4	5	6	7	8	9	10	
β	1	1.5416	1.3993	1.2620	1.1813	1.0750	0.9197	0.8563	0.7510	0.6222	0.4843	1.0000
	2	1.7157	1.3196	1.1938	1.0861	0.9697	0.9254	0.8114	0.7675	0.6647	0.5626	1.0000
	3	1.5427	1.3598	1.1822	1.1216	1.0474	0.9851	0.9180	0.7714	0.6547	0.4868	1.0000
	4	1.4423	1.2764	1.1818	1.0655	0.9957	0.9248	0.8601	0.7800	0.6614	0.6226	1.0000
α · 10 ³	1	0.7366	0.1902	0.3978	0.1314	-0.0650	-0.0501	-0.2190	-0.3786	-0.2128	-0.0710	
	2	-0.2197	-0.1300	-0.1224	0.0653	-0.0805	0.0914	0.1306	0.0760	0.2685	0.1478	
	3	-0.4614	-0.3994	-0.1189	0.0052	0.0002	-0.0070	0.1266	0.2428	0.3032	0.2035	
	4	-0.4475	-0.2536	-0.2329	-0.0654	0.0840	0.1356	0.1218	0.3257	0.3338	0.3685	
t(α)	1	1.3881	0.6121	1.4037	0.6484	-0.3687	-0.1882	-1.0341	-1.7601	-0.7882	-0.1978	
	2	-0.4256	-0.7605	-0.8719	0.5019	-0.6288	0.8988	1.1377	0.6178	1.7853	0.8377	
	3	-2.9030	-3.6760	-1.5160	0.0742	0.0029	-0.1010	1.8261	3.3768	3.3939	1.9879	
	4	-2.8761	-2.4603	-2.7886	-0.7722	1.1016	1.7937	1.6769	3.8772	3.0651	3.2439	
R̄	1	0.0412	0.0326	0.0317	0.0272	0.0230	0.0197	0.0166	0.0127	0.0115	0.0099	0.0220
	2	0.0253	0.0183	0.0165	0.0168	0.0136	0.0147	0.0134	0.0122	0.0126	0.0098	0.0149
	3	0.0126	0.0112	0.0120	0.0126	0.0117	0.0109	0.0115	0.0110	0.0103	0.0075	0.0112
	4	0.0082	0.0082	0.0081	0.0087	0.0096	0.0095	0.0088	0.0101	0.0092	0.0072	0.0088
σ	1	0.2504	0.2243	0.2023	0.1886	0.1715	0.1484	0.1377	0.1211	0.1024	0.0850	0.1587
	2	0.1187	0.0841	0.0758	0.0690	0.0618	0.0586	0.0519	0.0494	0.0441	0.0392	0.0624
	3	0.0581	0.0505	0.0436	0.0413	0.0385	0.0364	0.0340	0.0289	0.0253	0.0203	0.0363
	4	0.0577	0.0503	0.0463	0.0420	0.0391	0.0365	0.0340	0.0312	0.0277	0.0265	0.0386

*R̄ = average monthly excess returns, σ = standard deviation of monthly excess returns.
†Subperiod 1 = January, 1931-September, 1939; 2 = October, 1939-June 1948; 3 = July, 1948-March, 1957; 4 = April, 1957-December, 1965.

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Note that the correlation coefficients between \bar{R}_{Kt} and \bar{R}_{Mt} given in Table 2 for each of the portfolios are all greater than 0.95 except for portfolio number 10. The lowest of the 40 coefficients in the subperiods (not shown) was 0.87, and all but two were greater than 0.90. As a result, the standard deviation of the residuals from each regression is quite small and hence so is the standard error of estimate of α , and this provides the main advantage of grouping in these tests.

III. Cross-sectional Tests of the Model

A. Tests of the Two-Factor Model. Although the time series tests discussed in Section II provide a test of the traditional form of the asset pricing model, they cannot be used to test the two-factor model directly. The cross-sectional tests, however, do furnish an opportunity to test the linearity of the relation between returns and risk implied by (2) or (2') without making any explicit specification of the intercept. Recall that the traditional form of the model implies $\gamma_0 = 0$ and $\gamma_1 = R_M$. The two factor model merely requires the linearity of (2) to hold for any specific cross section and allows the intercept to be nonzero. At this level of specification we shall not specify the size or even the sign of γ_0 . We shall be able to make some statements on this point after a closer examination of the theory. However, we shall first examine the empirical evidence to motivate that discussion.

B. Measurement Errors and Bias in Cross-sectional Tests. We consider here the problems caused in cross-sectional tests of the model by measurement errors in the estimation of the security risk measures.⁸ Let β_j represent the true (and unobservable) systematic risk of firm j and $\hat{\beta}_j = \beta_j + \bar{\epsilon}_j$ be the measured value of the systematic risk of firm j where we assume that $\bar{\epsilon}_j$, the measurement error, is normally distributed and for all j satisfies

$$E(\bar{\epsilon}_j) = 0 \tag{7a}$$

$$E(\bar{\epsilon}_j \beta_j) = 0 \tag{7b}$$

$$E(\bar{\epsilon}_j \bar{\epsilon}_i) = \begin{cases} 0 & i \neq j \\ \sigma^2(\bar{\epsilon}) & i = j \end{cases} \tag{7c}$$

The traditional form of the asset pricing model and the assumptions of the market model imply that the mean excess

return on a security

$$\bar{R}_j = \frac{\sum_{t=1}^T \bar{R}_{jt}}{T} \quad (8)$$

observed over T periods can be written as

$$\bar{R}_j = E(\bar{R}_j | \bar{R}_M) + \bar{e}_j = \bar{R}_M \beta_j + \bar{e}_j \quad (9)$$

where $\bar{R}_M = \sum_{t=1}^T \bar{R}_{Mt} / T$, $\bar{e}_j = \sum_{t=1}^T e_{jt} / T$. Now an obvious test of the traditional form of the asset pricing model is to fit

$$\bar{R}_j = \gamma_0 + \gamma_1 \hat{\beta}_j + \bar{e}_j^* \quad (10)$$

to a cross section of firms (where $\hat{\beta}_j$ is the estimated risk coefficient for each firm and $\bar{e}_j^* = \bar{e}_j - \gamma_1 \hat{\beta}_j$) and test to see if, as implied by the theory

$$\gamma_0 = 0 \quad \text{and} \quad \gamma_1 = \bar{R}_M$$

There are two major difficulties with this procedure; the first involves bias due to the measurement errors in $\hat{\beta}_j$, and the second involves the apparent inadequacy of (9) as a specification of the process generating the data. The two-factor asset pricing model given by (2') implies that γ_0 and γ_1 are random coefficients—that is, in addition to the theoretical values above, they involve a variable that is random through time. If the two-factor model is the true model, the usual significance tests on γ_0 and γ_1 are misleading, since the data from a given cross section cannot provide any evidence on the standard deviation of \bar{e}_j and hence results in a serious underestimate of the sampling error of $\hat{\gamma}_0$ and $\hat{\gamma}_1$. Ignoring this second difficulty for the moment, we shall first consider the measurement error problems and the cross-sectional empirical evidence. The random coefficients issue and appropriate significance tests in the context of the two-factor model are discussed in more detail in Section IV.

As long as the $\hat{\beta}_j$ contain the measurement errors \bar{e}_j , the least-squares estimates $\hat{\gamma}_0$ and $\hat{\gamma}_1$ in (10) will be subject to the well-known errors in variables bias and will be inconsistent, (cf. Johnston [1963, Chap. VI]). That is, assuming that \bar{e}_j and \bar{e}_j^* are independent and are independent of the β_j in the cross-sectional sample,

$$\text{plim } \hat{\gamma}_1 = \frac{\gamma_1}{1 + \sigma^2(\bar{e})/S^2(\beta_j)} \quad (11)$$

where $S^2(\beta_j)$ is the cross-sectional sample variance of the true risk parameters β_j . Even for large samples, then, as long as the variance of the errors in the risk measure $\sigma^2(\bar{e})$ is positive, the estimated coefficient $\hat{\gamma}_1$ will be biased toward zero and $\hat{\gamma}_0$ will therefore be biased away from zero. Hence tests of the significance of the differences $\hat{\gamma}_0 - 0$ and $\hat{\gamma}_1 - \bar{R}_M$ will be misleading.

C. The Grouping Solution to the Measurement Error Problem. We show in the Appendix that by appropriate grouping of the data to be used in estimating (10) one can substantially reduce the bias introduced through the existence of measurement errors in the $\hat{\beta}_j$. In essence the procedure amounts to systematically ordering the firms into groups (in fact by the same procedure that formed the ten portfolios used in the time series tests in Section II) and then calculating the risk measures $\hat{\beta}$ for each portfolio using the time series of portfolio returns. This procedure can greatly reduce the sampling error in the estimated risk measures; indeed, for large samples and independent errors, the sampling error is virtually eliminated. We then estimate the cross-sectional parameters of (10) using the portfolio mean returns over the relevant holding period and the risk coefficients obtained from estimation of (6) from the time series of portfolio returns. If appropriate grouping procedures are employed, this procedure will yield consistent estimates of the parameters γ_0 and γ_1 and thus will yield virtually unbiased estimates for samples in which the number of securities entering each group is large. Thus, by applying the cross-sectional test to our ten portfolios rather than to the underlying individual securities, we can virtually eliminate the measurement error problem.⁹

D. The Cross-sectional Empirical Results. Given the 35 years of monthly returns on each of the ten portfolios calculated as explained in Section II, we then estimated $\hat{\beta}_K$ and \bar{R}_K ($K = 1, 2, \dots, 10$) for each portfolio, using all 35 years of monthly data. These estimates (see Table 2) were then used in estimating the cross-sectional relation given by (10) for various holding periods.

Figure 1 is a plot of \bar{R}_K versus $\hat{\beta}_K$ for the 35-year holding period January, 1931–December, 1965. The symbol \times denotes the average monthly excess return and risk of each of the ten portfolios. The symbol \square denotes the average excess

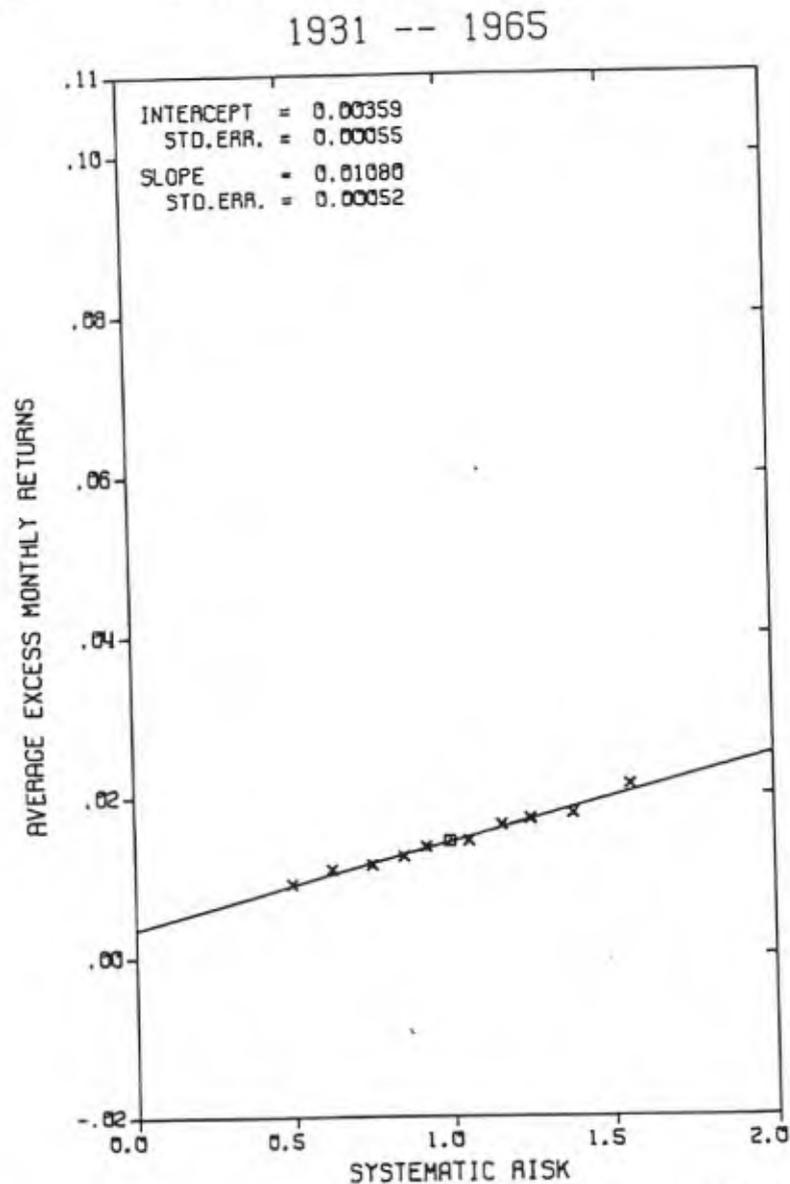


FIGURE 1 Average excess monthly returns versus systematic risk for the 35-year period 1931-65 for each of ten portfolios (denoted by \times) and the market portfolio (denoted by \square).

return and risk of the market portfolio (which by the definition of β is equal to unity). The line represents the least-squares estimate of the relation between \bar{R}_K and $\hat{\beta}_K$. The "intercept" and "slope" (with their respective standard errors given in parentheses) in the upper portion of the figure are the coefficients γ_0 and γ_1 of (10).

The traditional form of the asset pricing model implies that the intercept γ_0 in (10) should be equal to zero and the slope γ_1 should be equal to \bar{R}_M , the mean excess return on the market portfolio. Over this 35-year period, the average monthly excess return on the market portfolio \bar{R}_M , was 0.0142, and the theoretical values of the intercept and slope in Figure 1 are

$$\gamma_0 = 0 \quad \text{and} \quad \gamma_1 = 0.0142$$

The "t" values

$$t(\hat{\gamma}_0) = \frac{\hat{\gamma}_0}{s(\hat{\gamma}_0)} = \frac{0.00359}{0.00055} = 6.52$$

$$t(\hat{\gamma}_1) = \frac{\gamma_1 - \hat{\gamma}_1}{s(\hat{\gamma}_1)} = \frac{0.0142 - 0.0108}{0.00052} = 6.53$$

seem to indicate the observed relation is significantly different from the theoretical one. However, as we shall see, because (9) is a misspecification of the process generating the data, these tests vastly overstate the significance of the results.

We also divided the 35-year interval into four equal subperiods, and Figures 2 through 5 present the plots of the \bar{R}_K versus the $\hat{\beta}_K$ for each of these intervals. In order to obtain better estimates of the risk coefficients for each of the subperiods, we used the coefficients previously estimated over the entire 35-year period.¹⁰ The graphs indicate that the relation between return and risk is linear but that the slope is related in a nonstationary way to the theoretical slope for each period. Note that the traditional model implies that the theoretical relationship (not drawn) always passes through the two points given by the origin (0, 0) and the average market excess returns represented by \square in each figure. In the first subperiod (see Fig. 2) the empirical slope is steeper than the theoretical slope and then becomes successively flatter in each of the following three periods. In the last subperiod (see Fig. 5) the slope $\hat{\gamma}_1$, even has the "wrong" sign.

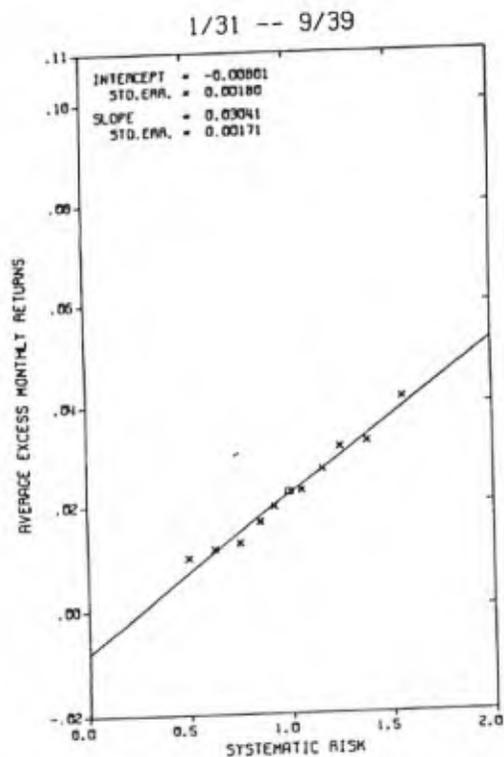


FIGURE 2 Average excess monthly returns versus systematic risk for the 105-month period January, 1931–September, 1939. Symbols as in Figure 1.

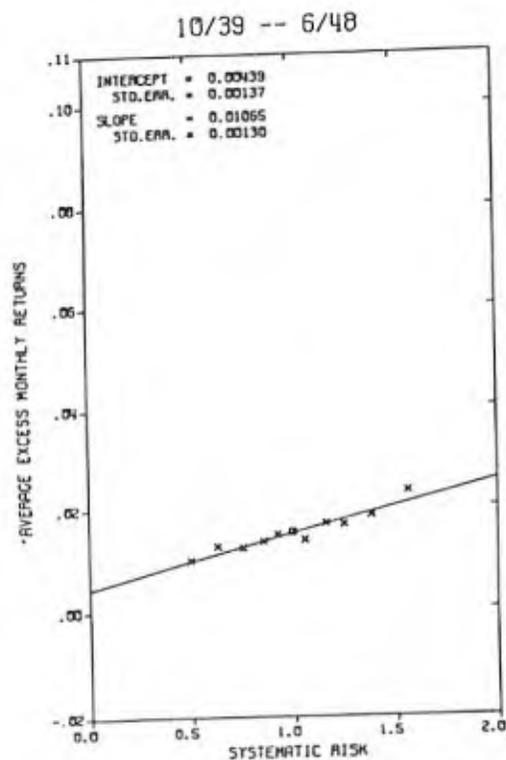


FIGURE 3 Average excess monthly returns versus systematic risk for the 105-month period October, 1939–June, 1948. Symbols as in Figure 1.

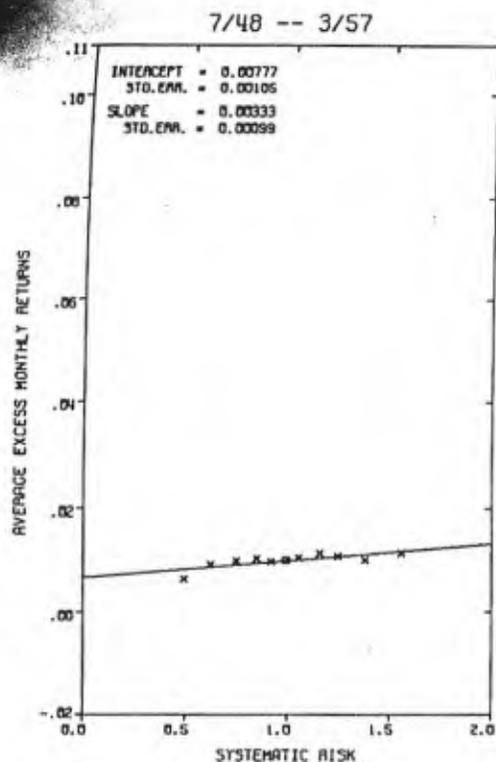


FIGURE 4 Average excess monthly returns versus systematic risk for the 105-month period July, 1948–March, 1957. Symbols as in Figure 1.

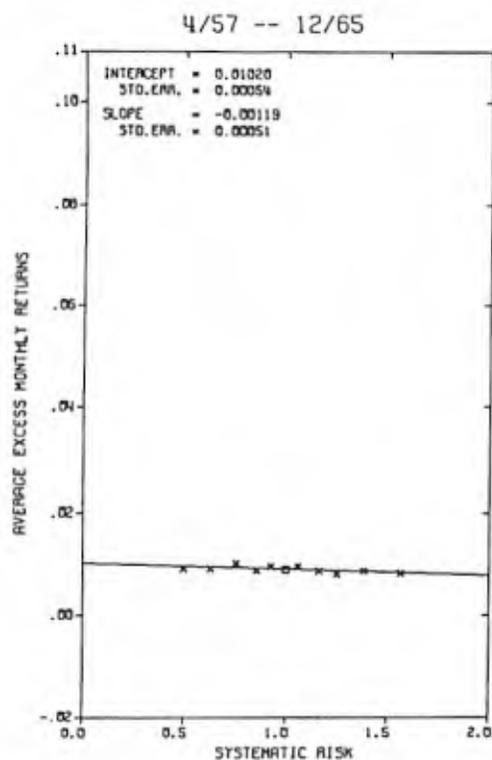


FIGURE 5 Average excess monthly returns versus systematic risk for the 105-month period April, 1957–December, 1965. Symbols as in Figure 1.

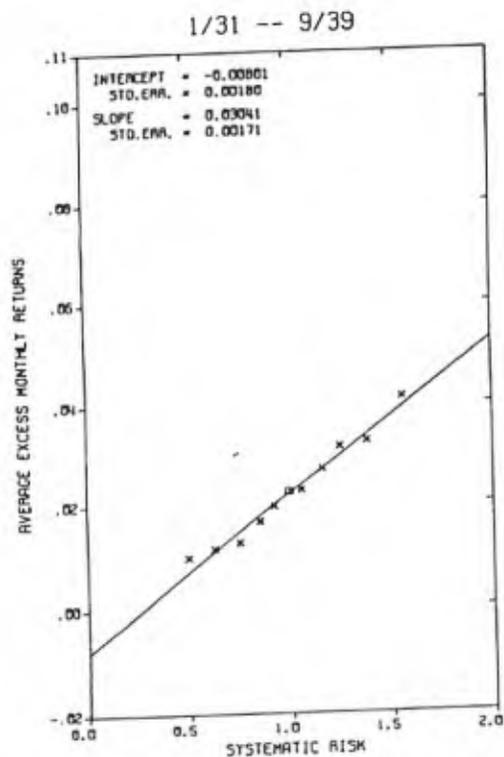


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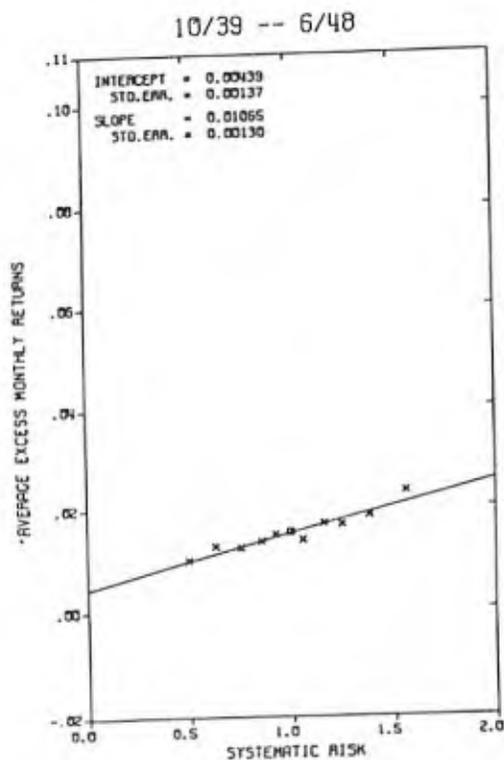


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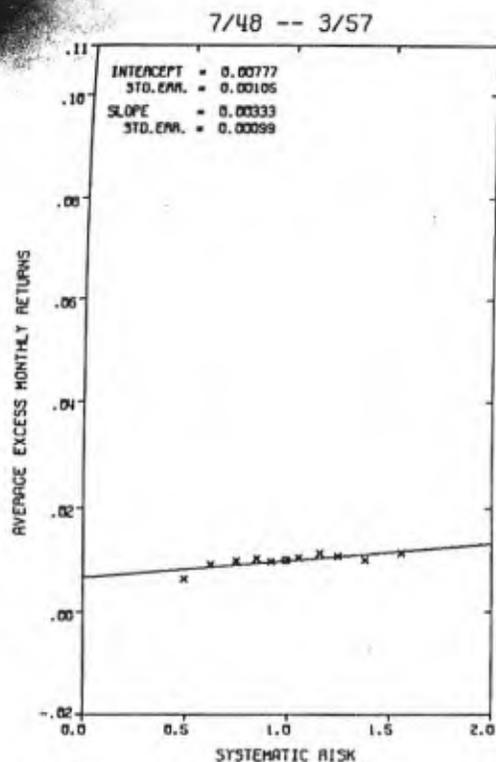


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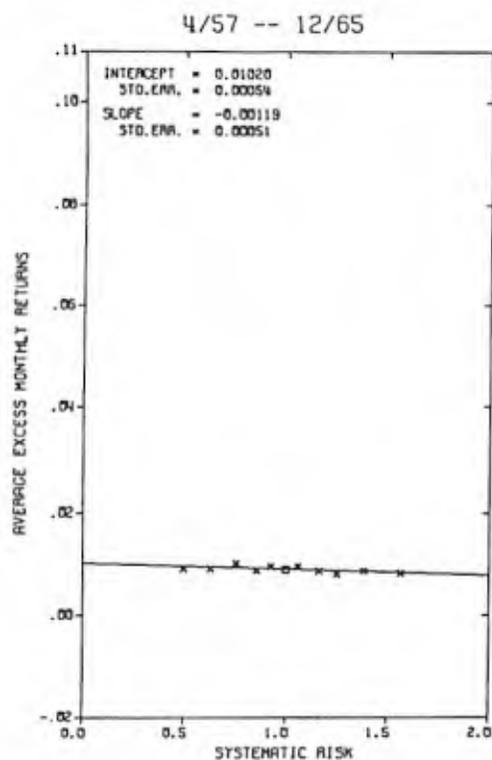


FIGURE 5 Average excess monthly returns versus systematic risk for the 105-month period April, 1957–December, 1965. Symbols as in Figure 1.

TABLE 4
Summary of Cross-sectional Regression Coefficients and Their
t Values

	Time Period				
	Total Period	Subperiods			
	1/31-12/65	1/31-9/39	10/39-6/48	7/48-3/57	4/57-12/65
$\hat{\gamma}_0$	0.00359	-0.00801	0.00439	0.00777	0.01020
$\hat{\gamma}_1$	0.0108	0.0304	0.0107	0.0033	-0.0012
$\gamma_1 = \bar{R}_M$	0.0142	0.0220	0.0149	0.0112	0.0088
$t(\hat{\gamma}_0)$	6.52	-4.45	3.20	7.40	18.89
$t(\gamma_1 - \hat{\gamma}_1)$	6.53	-4.91	3.23	7.98	19.61

The coefficients $\hat{\gamma}_0$, $\hat{\gamma}_1$, γ_1 and the "t" values of $\hat{\gamma}_0$ and $\gamma_1 - \hat{\gamma}_1$ are summarized in Table 4 for the entire period and for each of the four subperiods. The smallest "t" value given there is 3.20, and all seem to be "significantly" different from their theoretical values. However, as we have already maintained, these "t" values are somewhat misleading because the estimated coefficients fluctuate far more in the subperiods than the estimated sampling errors indicate. This evidence suggests that the model given by (9) is misspecified. We shall now attempt to deal with this specification problem and to furnish an alternative formulation of the model.

IV. A Two-Factor Model

A. *Form of the Model.* As mentioned in the introduction, Black [1970] has shown under assumptions identical to that of the asset pricing model that, if riskless borrowing opportunities do not exist, the expected return on any asset j will be given by

$$E(\bar{r}_j) = E(\bar{r}_z)(1 - \beta_j) + E(\bar{r}_M)\beta_j \quad (12)$$

where \bar{r}_z represents the return on a "zero beta" portfolio—a portfolio whose covariance with the returns on the market portfolio \bar{r}_M is zero.¹¹

Close examination of the empirical evidence from both the cross-sectional and the time series tests indicates that the results are consistent with a model that expresses the return on a security as a linear function of the market factor r_M , (with a coefficient of β_j) and a second factor r_z , (with a coefficient of

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$1 - \beta_j$). The function is

$$\bar{r}_{jt} = \bar{r}_{zt}(1 - \beta_j) + \bar{r}_{Mt}\beta_j + \bar{w}_{jt} \quad (13)$$

Because the coefficient of the second factor is a function of the security's β , we call this factor the beta factor. For a given holding period T , the average value of \bar{r}_{zt} will determine the relation between $\hat{\alpha}$ and $\hat{\beta}$ for different securities or portfolios. If the data are being generated by the process given by (13) and if we estimate the single variable time series regression given by (6), then the intercept $\hat{\alpha}$ in that regression will be

$$\hat{\alpha} = (\bar{r}_z - \bar{r}_F)(1 - \hat{\beta}_j) = \bar{R}_z(1 - \hat{\beta}_j) \quad (14)$$

where $\bar{r}_z = \sum_{t=1}^T \bar{r}_{zt}/T$ is the mean return on the beta factor over the period, \bar{r}_F is the mean risk-free rate over the period, and \bar{R}_z is the difference between the two. Thus if \bar{R}_z is positive, high-beta securities will tend to have negative $\hat{\alpha}$'s, and low-beta securities will tend to have positive $\hat{\alpha}$'s. If \bar{R}_z is negative, high-beta securities will tend to have positive $\hat{\alpha}$'s, and low-beta securities will tend to have negative $\hat{\alpha}$'s.

In addition, if we estimate the cross-sectional regression given by (10), the expanded two-factor model implies that the true values of the parameters γ_0 and γ_1 will not be equal to zero and \bar{R}_M but instead will be given by

$$\gamma_0 = \bar{R}_z \quad \text{and} \quad \gamma_1 = \bar{R}_M - \bar{R}_z$$

Hence if \bar{R}_z is positive, γ_0 will be positive and γ_1 will be less than \bar{R}_M . If \bar{R}_z is negative, γ_0 will be negative and γ_1 will be greater than \bar{R}_M .

Thus we can interpret Table 3 and Figures 2 through 5 as indicating that \bar{R}_z was negative in the first subperiod and became positive and successively larger in each of the following subperiods.

Examining (12), we see that the traditional form of the capital asset pricing model, as expressed in (1), is consistent with the present two-factor model if

$$E(\bar{R}_z) = 0 \quad (15)$$

and (questions of statistical efficiency aside) any test for whether α_K for a portfolio is zero is equivalent to a test for whether $E(\bar{R}_z)$ is zero. The results in Table 3 suggest that $E(\bar{R}_z)$ is not stationary through time. For example, $\hat{\alpha}_K$ for the lowest risk portfolio (number 10) is negative in the first subperiod and positive in the last subperiod, with a "t" value of 8. Thus it is unlikely that the true values of α_K were the same in

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$$\hat{\alpha} = (\bar{r}_z - \bar{r}_F)(1 - \hat{\beta}_j) = \bar{R}_z(1 - \hat{\beta}_j) \quad (14)$$

where $\bar{r}_z = \sum_{t=1}^T \bar{r}_{zt}/T$ is the mean return on the beta factor over the period, \bar{r}_F is the mean risk-free rate over the period, and \bar{R}_z is the difference between the two. Thus if \bar{R}_z is positive, high-beta securities will tend to have negative $\hat{\alpha}$'s, and low-beta securities will tend to have positive $\hat{\alpha}$'s. If \bar{R}_z is negative, high-beta securities will tend to have positive $\hat{\alpha}$'s, and low-beta securities will tend to have negative $\hat{\alpha}$'s.

In addition, if we estimate the cross-sectional regression given by (10), the expanded two-factor model implies that the true values of the parameters γ_0 and γ_1 will not be equal to zero and \bar{R}_M but instead will be given by

$$\gamma_0 = \bar{R}_z \quad \text{and} \quad \gamma_1 = \bar{R}_M - \bar{R}_z$$

Hence if \bar{R}_z is positive, γ_0 will be positive and γ_1 will be less than \bar{R}_M . If \bar{R}_z is negative, γ_0 will be negative and γ_1 will be greater than \bar{R}_M .

Thus we can interpret Table 3 and Figures 2 through 5 as indicating that \bar{R}_z was negative in the first subperiod and became positive and successively larger in each of the following subperiods.

Examining (12), we see that the traditional form of the capital asset pricing model, as expressed in (1), is consistent with the present two-factor model if

$$E(\bar{R}_z) = 0 \quad (15)$$

and (questions of statistical efficiency aside) any test for whether α_K for a portfolio is zero is equivalent to a test for whether $E(\bar{R}_z)$ is zero. The results in Table 3 suggest that $E(\bar{R}_z)$ is not stationary through time. For example, $\hat{\alpha}_K$ for the lowest risk portfolio (number 10) is negative in the first subperiod and positive in the last subperiod, with a "t" value of 8. Thus it is unlikely that the true values of α_K were the same in

the two subperiods (each of which contains 105 observations) and thus unlikely that the true values of $E(R_Z)$ were the same in the two subperiods, and we shall derive formal tests of this proposition below.

The existence of a factor \bar{R}_Z with a weight proportional to $1 - \beta_j$ in most securities is also suggested by the unreasonably high "t" values¹² obtained in the cross-sectional regressions, as given in Table 4. Since γ_0 and γ_1 involve \bar{R}_Z , which is a random variable from cross section to cross section, and since no single cross-sectional run can provide any information whatsoever on the variability of \bar{R}_Z , this element is totally ignored in the usual calculation of the standard errors of γ_0 and γ_1 . It is not surprising, therefore, that each individual cross-sectional result seems so highly significant but so totally different from any other cross-sectional relationship. Of course the presence of infinite-variance stable distributions will also contribute to this type of phenomenon.

In addition, in an attempt to determine whether the linearity observed in Figures 1 through 5 was in some way due to the averaging involved in the long periods presented there, we replicated those plots for our ten portfolios for 17 separate two-year periods from 1932 to 1965. These results, which also exhibit a remarkable linearity, are presented in Figures 6a and 6b. Since the evidence seems to indicate that the all-risky asset model describes the data better than the traditional model, and since the definition of our "riskless" interest rate was somewhat arbitrary in any case, these plots were derived from calculations on the raw return data with no reference whatsoever to the "risk-free" rate defined earlier (including the recalculation of the ten portfolios and the estimation of the β_j). Figures 7 through 11 contain a replication of Figures 1 through 5 calculated on the same basis. These results indicate that the basic findings summarized previously cannot be attributed to misspecification of the riskless rate.

In summary, then, the empirical results suggest that the returns on different securities can be written as a linear function of two factors as given in (13), that the expected excess return on the beta factor \bar{R}_Z has in general been positive, and that the expected return on the beta factor has been higher in more recent subperiods than in earlier subperiods.

B. Explicit Estimation of the Beta Factor and a Crucial Test of the Model. Since the traditional form of the asset

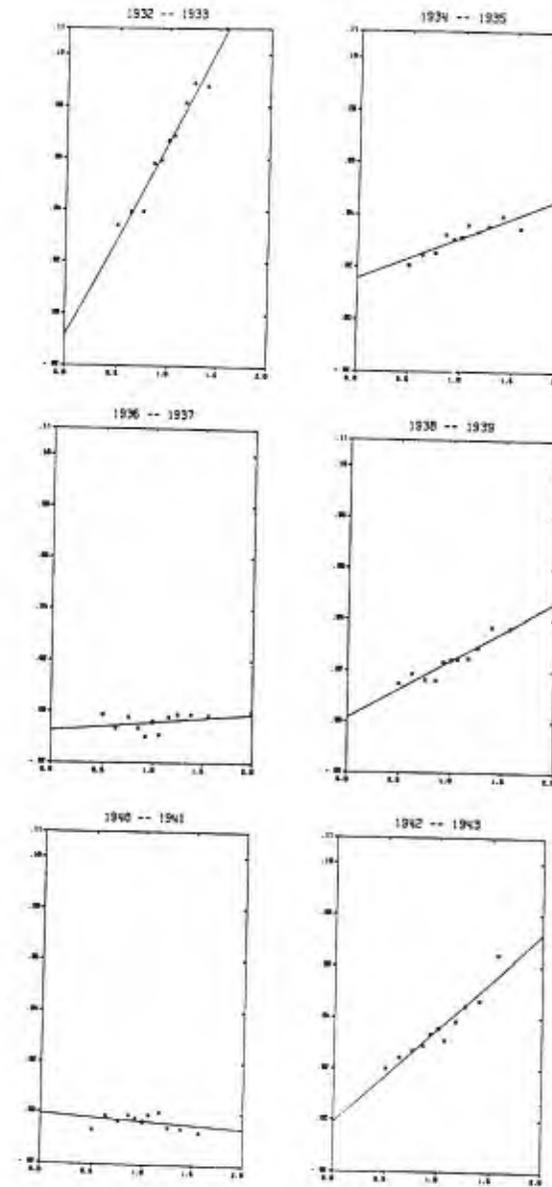
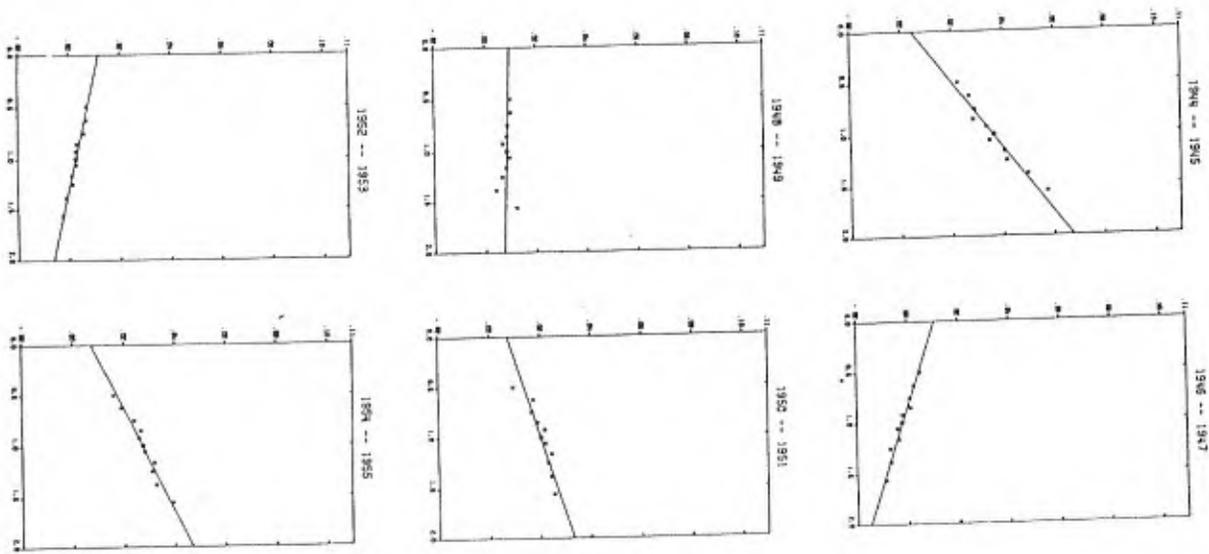


FIGURE 6 Average monthly returns versus systematic risk for 17 non-overlapping two-year periods from 1932 to 1965.

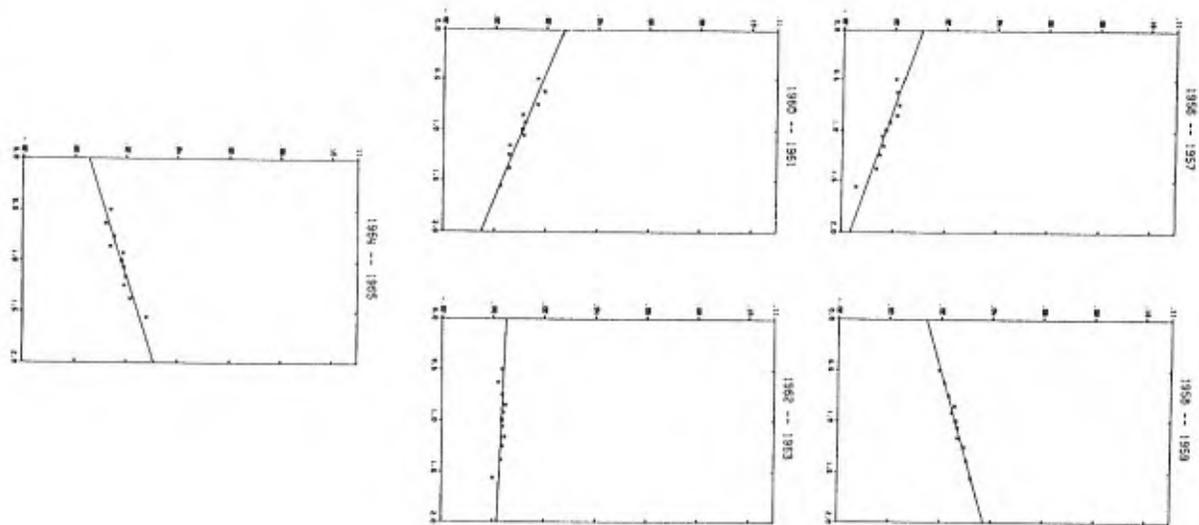
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FIGURE 6 (continued)



The Capital Asset Pricing Model

FIGURE 6 (continued)



1931 -- 1965

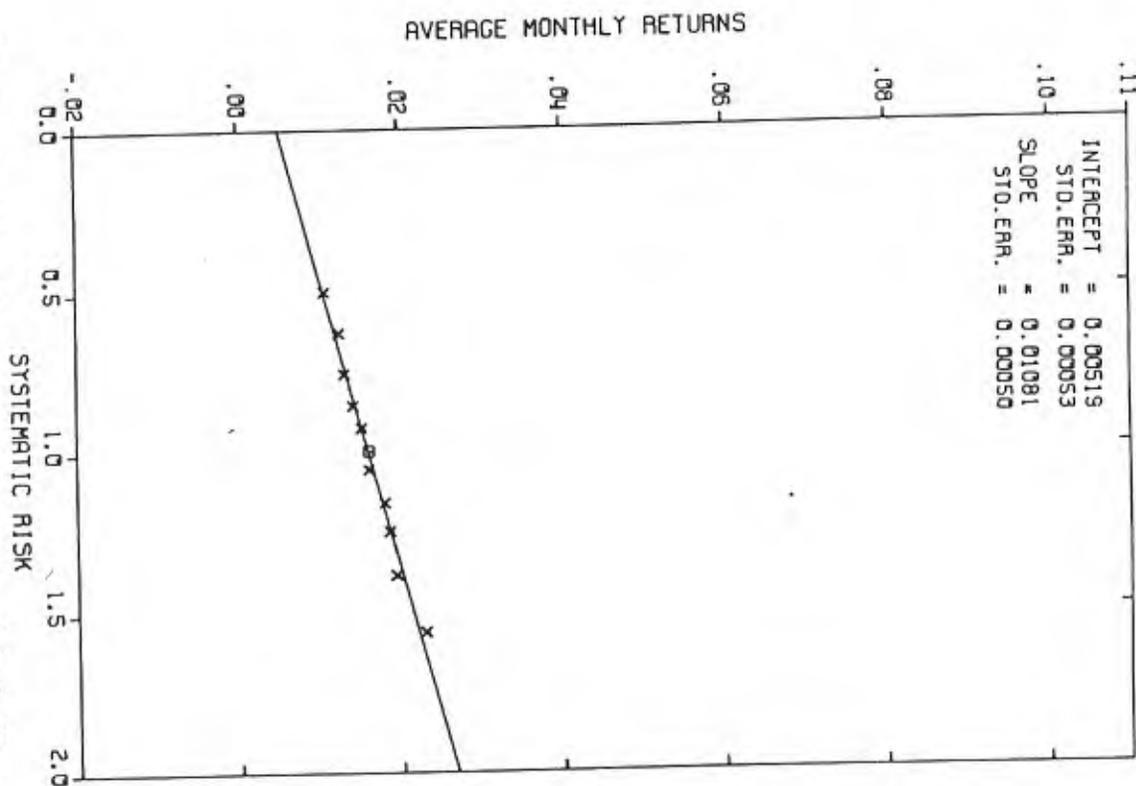


FIGURE 7 Average monthly returns versus systematic risk for the 35-year period 1931-65 for the ten portfolios and the market portfolio.

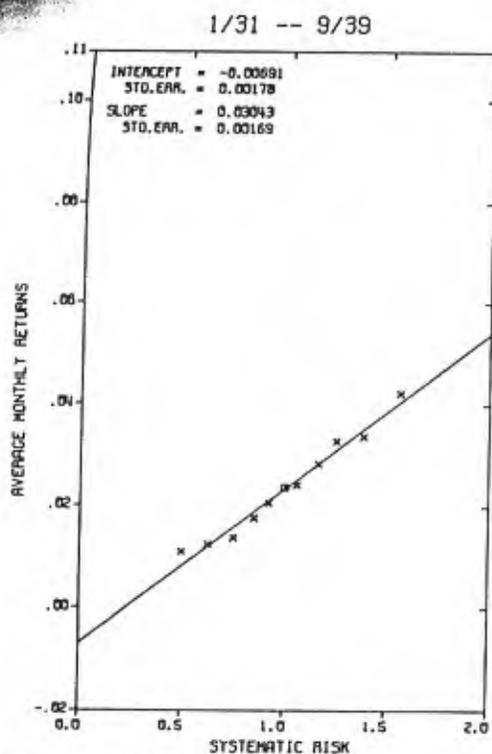


FIGURE 8 Average monthly returns versus systematic risk for the 105-month period January, 1931 - September, 1939.

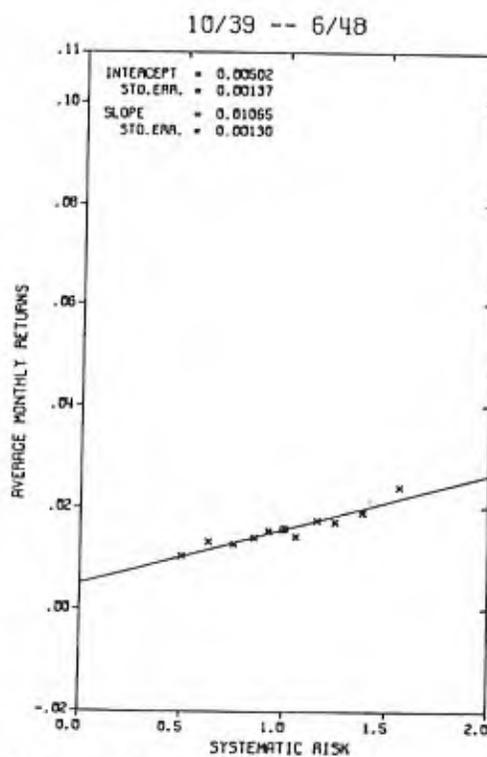


FIGURE 9 Average monthly returns versus systematic risk for the 105-month period October, 1939 - June, 1948.

4/57 -- 12/65

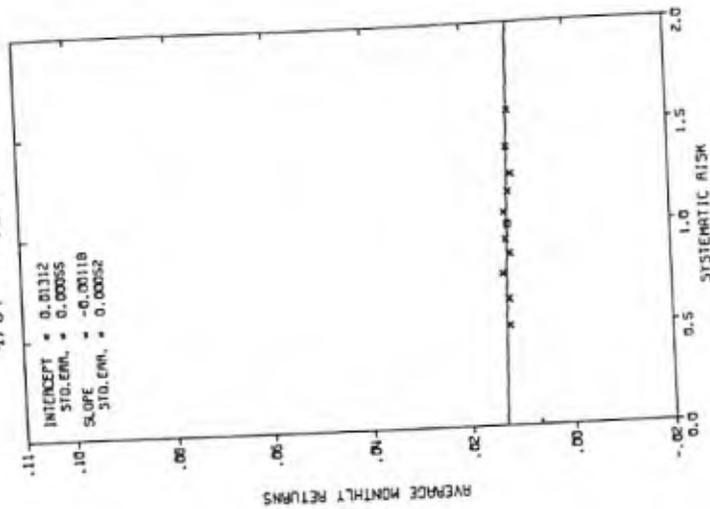


FIGURE 11 Average monthly returns versus systematic risk for the 105-month period April, 1957 - December, 1965.

7/48 -- 3/57

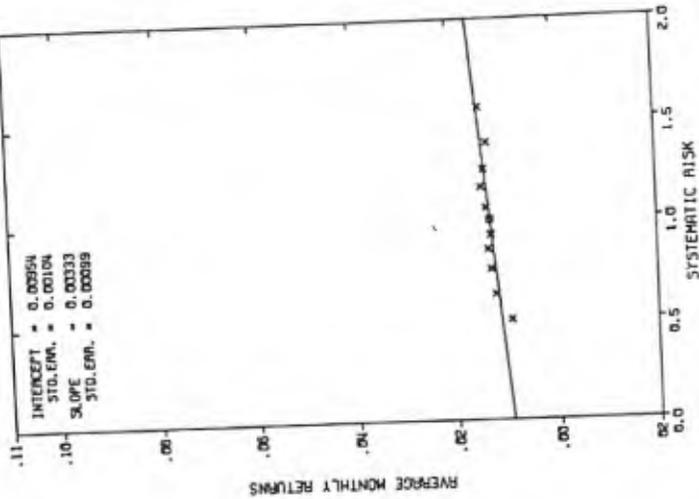


FIGURE 10 Average monthly returns versus systematic risk for the 105-month period July, 1948 - March, 1957.

The Capital Asset Pricing Model

pricing model is consistent with the existence of the beta factor as long as the excess returns on the beta factor have a zero mean,¹³ our purpose here is to provide a procedure for explicit estimation of the time series of the factor. Given such a time series, we can then make explicit estimates of the significance of its mean excess return rather than depending mainly on an examination of the $\hat{\alpha}_j$ for high- and low-beta securities. Solving (13) for \hat{r}_{Zt} plus the error term, we have an estimate \hat{r}_{Zjt} of \hat{r}_{Zt}

$$\hat{r}_{Zjt} = \frac{1}{(1-\beta_j)} [\hat{r}_j - \beta_j \hat{r}_{Mt}] = \hat{r}_{Zt} + \hat{u}_{jt} \quad (16)$$

where $\hat{u}_{jt} = \hat{w}_{jt}/(1-\beta_j)$. We subscript \hat{r}_{Zjt} by j to denote that this is an estimate of \hat{r}_{Zt} obtained from the j th asset or portfolio. Now, since we can obtain as many separate estimates of \hat{r}_{Zt} as we have securities or portfolios, we can formulate a combined estimate

$$r_{Zt}^o = \sum_j h_j \hat{r}_{Zjt} \quad (17)$$

which is a linear combination of the \hat{r}_{Zjt} s to provide a much more efficient estimate of \hat{r}_{Zt} . The problem is to find that linear combination of the \hat{r}_{Zjt} which minimizes the error variance in the estimate of \hat{r}_{Zt} . That is, we want to

$$\min_{h_j} E(r_{Zt}^o - \hat{r}_{Zt})^2 = \min_{h_j} E\left(\sum_j h_j \hat{r}_{Zjt} - \hat{r}_{Zt}\right)^2$$

subject to $\sum_j h_j = 1$, since we want an unbiased estimate. From the Lagrangian we obtain the first-order conditions

$$h_j \sigma^2(\hat{u}_j) - \lambda = 0 \quad j = 1, 2, \dots, N \quad (18)$$

where λ is the Lagrangian multiplier and N is the total number of securities or nonoverlapping portfolios. These conditions imply that

$$\frac{h_j}{h_i} = \frac{\sigma^2(\hat{u}_i)}{\sigma^2(\hat{u}_j)} \quad \text{for all } i \text{ and } j \quad (19)$$

which implies that the optimal weights h_j are proportional to $1/\sigma^2(\hat{u}_j)$. That is,

$$h_j = \frac{K}{\sigma^2(\hat{u}_j)} \quad j = 1, 2, \dots, N \quad (20)$$

where $K = 1/\sum_j [1/\sigma^2(\hat{u}_j)]$ is a normalizing constant. But from

the definition of \bar{u}_j , we know that $\sigma^2(\bar{u}_j) = \sigma^2(\bar{w}_j)/(1 - \beta_j)^2$, so

$$h_j = \frac{K(1 - \beta_j)^2}{\sigma^2(\bar{w}_j)} \quad (21)$$

Equation (21) makes sense, for we are then weighting the estimates in proportion to $(1 - \beta_j)^2$ and inversely proportional to $\sigma^2(\bar{w}_j)$. However, since we cannot observe $\sigma^2(\bar{w}_j)$ directly,¹⁴ we are forced, for lack of explicit estimates, to assume that the $\sigma^2(\bar{w}_j)$ are all identical and to use as our weights

$$h_j = K'(1 - \beta_j)^2 \quad (22)$$

where $K' = 1/\sum_j (1 - \beta_j)^2$.

Equations (17) and (22) thus provide an unbiased and (approximately) efficient procedure for estimating \bar{r}_{Zt} utilizing all available information. However, there is a problem of bias involved in actually applying this procedure to the security data. The coefficient β_j is of course unobservable, and in general if we use our estimates $\hat{\beta}_j$ in the weighting procedure we will introduce bias into our estimate of \bar{r}_{Zt} . To understand this, recall that $\hat{\beta}_j = \beta_j + \epsilon_j$, substitute this into (13) with the necessary additions and subtractions, and solve for the estimate

$$\hat{r}_{Zt} = \frac{\bar{r}_M - \hat{\beta}_j \bar{r}_{Mt}}{(1 - \hat{\beta}_j)} = \frac{\bar{r}_{Zt}(1 - \beta_j) + \bar{w}_j - \bar{\epsilon}_j \bar{r}_{Mt}}{(1 - \hat{\beta}_j)}$$

Substituting this into (17), using (22), rearranging terms, and taking the probability limit, we have

$$\text{plim}_{N \rightarrow \infty} \bar{r}_{Zt} = \frac{C_t[S^2(\beta) + (1 - \bar{\beta})^2] + \sigma^2(\bar{\epsilon})\bar{r}_{Mt}}{[S^2(\beta) + (1 - \bar{\beta})^2] + \sigma^2(\bar{\epsilon})} \quad (23)$$

where $S^2(\beta)$ is the cross-sectional variance of the β_j and $\bar{\beta}$ is the mean. However, the average standard deviation of the measurement error $\sigma(\bar{\epsilon}_j)$ for our portfolios is only 0.0101 (implying an average variance on the order of 0.0001), and since $S^2(\beta)$ for our ten portfolios is 0.1144 and $\bar{\beta} = 1.007$, this bias will be negligible and we shall ignore it.

To begin, let us apply the foregoing procedures to the excess return data to obtain an estimate of $\bar{R}_{Zt} = \bar{r}_{Zt} - r_{Ft}$, the excess return on the beta factor. Substituting R_{jt} for r_{jt} and R_{Mt} for r_{Mt} in (16), the \bar{R}_{Zt} were estimated for each of our ten

portfolios. These were then averaged to obtain the estimate

$$R_{Zt}^o = \sum_j h_j \bar{R}_{Zjt} = K' \sum_j (1 - \beta_j)^2 \left[\frac{\bar{R}_{jt} - \hat{\beta}_j R_{Mt}}{1 - \hat{\beta}_j} \right]$$

for each month t . The average of the R_{Zt}^o for the entire period and for each of the four subperiods are given in Table 5, along with their t values. Table 5 also presents the serial correlation

TABLE 5
Estimated Mean Values and Serial Correlation of the Excess Returns on the Beta Factor over the Entire Periods and the Four Subperiods*

Period	\bar{R}_Z^o	$\sigma(R_Z^o)$	$t(\bar{R}_Z^o)$	$r(R_{Zt}^o, R_{Z,t-1}^o)$	$t(r)$
1/31-12/65	0.00338	0.0426	1.62	0.113	2.33
1/31-9/39	-0.00849	0.0641	-1.35	0.194	1.49
10/39-6/48	0.00420	0.0455	0.946	0.208	2.19
7/48-3/57	0.00782	0.0199	4.03	-0.181	-1.87
4/57-12/65	0.00997	0.0228	4.49	0.414	4.60

*The values of $t(\bar{R}_Z^o)$ were calculated under the assumption of normal distributions.

coefficients $r(R_{Zt}^o, R_{Z,t-1}^o)$.¹⁵ Note that the mean value \bar{R}_Z^o of the beta factor over the whole period has a "t" value of only 1.64. However, as hypothesized earlier, it was negative in the first subperiod and positive and successively larger in each of the following subperiods. Moreover, in the last two subperiods its "t" values were 4.03 and 4.49, respectively. These results seem to us to be strong evidence favoring rejection of the traditional form of the asset pricing model which says that \bar{R}_Z^o should be insignificantly different from zero.

In order to be sure that the significance levels reported in Table 5 are not spurious and due only to the misapplication of normal distribution theory to a situation in which the variables may actually be distributed according to the infinite variance members of the stable class of distributions. We have performed the significance tests using the stable distribution theory outlined by Fama and Roll [1968]. Table 6 presents the standardized variates (i.e., the "t" values) for \bar{R}_Z^o for each of the sample periods given in Table 5 along with the "t" values at the 5% level of significance (two-tail) under

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TABLE 6
Normalized Variate [i.e., t Value $t(\bar{R}_Z^0, \alpha) = \bar{R}_Z^0 / \sigma(\bar{R}_Z^0, \alpha)$] of the Excess Return on the Beta Factor Under the Assumption of Infinite Variance Symmetric Stable Distributions

Period	α					
	1.5	1.6	1.7	1.8	1.9	2.0
1/31-12/65	1.33	1.71	2.14	2.61	3.11*	3.65*
1/31-9/39	-1.11	-1.44	-1.71	-2.00	-2.29	-2.58
10/39-6/48	0.82	1.00	1.18	1.38	1.58	1.79
7/48-3/57	2.60	3.16	3.75*	4.37*	5.00*	5.66*
4/57-12/65	3.05	3.70	4.40*	5.11*	5.86*	6.63*
t Value at the 5% level of significance (two-tail)†	4.49	3.90	3.48	3.16	2.93	2.77

Note: α = characteristic exponent, $\sigma(\bar{R}_Z^0, \alpha)$ = dispersion parameter of the distribution.
†Cf. Fama and Roll [1968].

alternative assumptions regarding the value of α , the characteristic exponent of the distribution. The smaller is α , the higher are the extreme tails of the probability distribution; $\alpha = 2$ corresponds to the normal distribution and $\alpha = 1$ to the Cauchy distribution. Evidence presented by Fama [1965] seems to indicate that α is probably in the range 1.7 to 1.9 for common stocks. We have not attempted to obtain explicit estimates of α for our data, since currently known estimation procedures are quite imprecise and require extremely large samples (up to 2,000 observations). Therefore we have simply presented the " t " values calculated according to the procedures suggested by Fama and Roll [1968] for six values of α ranging from 1.5 to 2.0. The coefficients in Table 6 that are significant at the 5% level are noted with an asterisk. Clearly, if α is greater than 1.7, the results confirm the impression gained from the normal tests given in Table 5.

Note that the estimates in Tables 5 and 6 were obtained from the excess return data; therefore, although the figures are of interest for testing the traditional form of the model, they do not give the appropriate level of the mean value of \bar{r}_Z . The estimates \bar{r}_Z^0 and \bar{r}_M obtained from the total return data used in Figures 6 through 11 appear in Table 7, along with $\sigma(\bar{r}_Z^0)$ and $\sigma(\bar{r}_M)$ and the estimated values of γ_0 and γ_1 for the cross-sectional regressions [given by (10)] for each of the var-

TABLE 7
Mean and Standard Deviation of Returns on the Zero Beta and Market Portfolios and the Cross-sectional Regression Coefficients [from (10)] for Various Sample Periods

Time Period	\bar{r}_Z^0	\bar{r}_M	$\bar{r}_M - \bar{r}_Z^0$	$\sigma(\bar{r}_Z^0)$	$\sigma(\bar{r}_M)$	$\hat{\gamma}_0$	$\hat{\gamma}_1$
1931-1965	0.004980	0.015800	0.010820	0.042584	0.089054	0.005190	0.010807
1/31-9/39	-0.007393	0.023067	0.030459	0.063927	0.158707	-0.006913	0.030429
10/39-6/48	0.004833	0.015487	0.010655	0.045520	0.062414	0.005021	0.010652
7/48-3/57	0.009591	0.012915	0.003324	0.019895	0.036204	0.009537	0.003327
4/57-12/65	0.012889	0.011723	-0.001167	0.022631	0.038470	0.013115	-0.001181
1931	-0.047243	-0.037573	0.009669	0.040827	0.152924	-0.045492	0.009557
1932-1933	-0.009180	0.065574	0.074754	0.059741	0.245281	-0.008286	0.074696
1934-1935	0.015549	0.031250	0.015701	0.048551	0.097739	0.015542	0.015702
1936-1937	-0.007749	-0.004538	0.003211	0.032589	0.084786	-0.007336	0.003194
1938-1939	0.001919	0.024436	0.022517	0.100490	0.147129	0.001514	0.022543
1940-1941	-0.001308	-0.003902	-0.002596	0.043481	0.072454	-0.000646	-0.002638
1942-1943	-0.009898	0.035782	0.036780	0.066552	0.066451	-0.001069	0.036784
1944-1945	0.004511	0.036117	0.031507	0.032522	0.043560	0.004451	0.031517
1946-1947	0.010153	-0.002357	-0.013010	0.033074	0.056139	0.010946	-0.013061
1948-1949	0.009721	0.008529	-0.001192	0.019590	0.051471	0.009709	-0.001191
1950-1951	0.007163	0.020253	0.013090	0.028656	0.039764	0.007215	0.013087
1952-1953	0.012258	0.003054	-0.009204	0.014559	0.026896	0.012050	-0.009191
1954-1955	0.007432	0.027266	0.019834	0.019232	0.030804	0.007392	0.019836
1956-1957	0.010463	-0.003097	-0.013559	0.017638	0.032340	0.010555	-0.013565
1958-1959	0.014582	0.025060	0.011478	0.019982	0.028261	0.014205	0.011502
1960-1961	0.026825	0.010867	-0.015958	0.023178	0.036505	0.026753	-0.015953
1962-1963	0.004300	0.002728	-0.001571	0.026231	0.052144	0.005054	-0.001620
1964-1965	0.005032	0.017771	0.012738	0.014433	0.026761	0.005519	0.012707

*Cf. eq. (10).

ious sample periods portrayed in Figures 6 through 11. (Recall that the two-factor model implies $\gamma_0 = \bar{r}_z$ and $\gamma_1 = \bar{r}_M - \bar{r}_z$.) One additional item of interest in judging the importance of the beta factor in the determination of security returns is its standard deviation relative to that of the market returns. As Table 7 reveals, $\sigma(\bar{r}_z^o)$ is roughly 50% as large as $\sigma(\bar{r}_M)$. Comparison of \bar{r}_z^o and \bar{r}_M in Table 7 for the four 105-month subperiods indicates that the mean returns on the beta factor were approximately equal to the average market returns in the last two periods covering the interval July, 1948–December, 1965. Apparently, then, the relative magnitudes of \bar{r}_z^o and \bar{r}_M indicate that the beta factor is economically as well as statistically significant.

V. Conclusion

The traditional form of the capital asset pricing model states that the expected excess return on a security is equal to its level of systematic risk, β , times the expected excess return on the market portfolio. That is, in capital market equilibrium, prices of assets adjust such that

$$E(\bar{R}_j) = \gamma_1 \beta_j \quad (24)$$

where $\gamma_1 = E(\bar{R}_M)$, the expected excess return on the market portfolio.

An alternative hypothesis of the pricing of capital assets arises from the relaxation of one of the assumptions of the traditional form of the capital asset pricing model. Relaxation of the assumption that riskless borrowing and lending opportunities are available leads to the formulation of the two-factor model. In equilibrium, the expected returns $E(\bar{r}_j)$ on an asset will be given by

$$E(\bar{r}_j) = E(\bar{r}_z) + [E(\bar{r}_M) - E(\bar{r}_z)]\beta_j \quad (25)$$

where $E(\bar{r}_z)$ is the expected return on a portfolio that has a zero covariance (and thus $\beta_z = 0$) with the return on the market portfolio \bar{r}_M . In the context of this model, the return on 30-day Treasury Bills (which we have used as a proxy for a "riskless" rate) simply represents the return on a particular asset in the system. Thus, subtracting r_F from both sides of (25), we can rewrite (25) in terms of "excess" returns as

$$E(\bar{R}_j) = \gamma_0 + \gamma_1 \beta_j \quad (26)$$

where $\gamma_0 = E(\bar{R}_z)$ and $\gamma_1 = E(\bar{R}_M) - E(\bar{R}_z)$.

The traditional form of the asset pricing model implies that $\gamma_0 = 0$ and $\gamma_1 = E(\bar{R}_M)$ and the two-factor model implies that $\gamma_0 = E(\bar{R}_z)$, which is not necessarily zero and that $\gamma_1 = E(\bar{R}_M) - E(\bar{R}_z)$. In addition, several other models arise from relaxing some of the assumptions of the traditional asset pricing model which imply $\gamma_0 \neq 0$ and $\gamma_1 \neq E(\bar{R}_M)$. These models involve explicit consideration of the problems of measuring R_M , the existence of nonmarketable assets, and the existence of differential taxes on capital gains and dividends, and we shall briefly outline them. Our main emphasis has been to test the strict traditional form of the asset pricing model; that is, is $\gamma_0 \neq 0$? We have made no attempt to provide direct tests of these other alternative hypotheses.

To test the traditional model, we used all securities listed on the New York Stock Exchange at any time in the interval between 1926 and 1966. The problem we faced was to obtain efficient estimates of the mean of the beta factor and its variance. It would be possible to test the alternative hypotheses by selecting one security at random and estimating its beta from the time series and ascertaining whether its mean return was significantly different from that predicted by the traditional form of the capital asset pricing model. However, this would be a very inefficient test procedure.

To gain efficiency, we grouped the securities into ten portfolios in such a way that the portfolios had a large spread in their β 's. However, we knew that grouping the securities on the basis of their estimated β 's would not give unbiased estimates of the portfolio "Beta," since the β 's used to select the portfolios would contain measurement error. Such a procedure would introduce a selection bias into the tests. To eliminate this bias we used an instrumental variable, the previous period's estimated beta, to select a security's portfolio grouping for the next year. Using these procedures, we constructed ten portfolios whose estimated β 's were unbiased estimates of the portfolio "Beta." We found that much of the sampling variability of the β 's estimated for individual securities was eliminated by using the portfolio groupings. The β 's of the portfolios constructed in this manner ranged from 0.49 to 1.5, and the estimates of the portfolio β 's for the subperiods exhibited considerable stationarity.

The time series regressions of the portfolio excess returns on the market portfolio excess returns indicated that high-beta securities had significantly negative intercepts and low-beta securities had significantly positive intercepts, contrary

to the predictions of the traditional form of the model. There was also considerable evidence that this effect became stronger through time, being strongest in the 1947-65 period. The cross-sectional plots of the mean excess returns on the portfolios against the estimated β 's indicated that the relation between mean excess return and β was linear. However, the intercept and slope of the cross-sectional relation varied in different subperiods and were not consistent with the traditional form of the capital asset pricing model. In the two prewar 105-month subperiods examined, the slope was steeper in the first period than that predicted by the traditional form of the model, and it was flatter in the second period. In each of the two 105-month postwar periods it was considerably flatter than predicted. From the evidence of both the time series and cross-sectional runs, we were led to reject the hypothesis that γ_0 in (26) was equal to zero; we therefore concluded that the traditional form of the asset pricing model is not consistent with the data.

We also attempted to make explicit estimates of the time series of returns on the beta factor in order to obtain a more efficient estimate of its mean and variance and thereby enable ourselves to directly test whether or not the mean excess return on the beta factor was zero. We derived a minimum-variance, unbiased linear estimator of the returns on the β factor using our portfolio return data. We showed that, given the independence of the residuals the optimum estimator requires knowledge of the unobservable residual variances of each of the portfolios but that this problem could be avoided if they were equal. Under this assumption of equal residual variances, we estimated the time series of returns on the beta factor. However, if these assumptions (i.e., the independence of the residuals and equality of their variances) are not valid — and there is reason to believe they are not — more complicated procedures are necessary to obtain minimum-variance estimates. Such estimators, which use the complete covariance structure of the portfolio returns are available (although not derived here). However, we feel that a straightforward application of these procedures to the return data would result in the introduction of serious *ex post* bias in the estimates. Thus we have left a complete investigation of these problems, as well as more detailed tests of the two-factor model, to a future paper. In order to fully utilize the properties of the two-factor model in a number of applied problems (such as portfolio evaluation, see Jensen [1971] and various issues in valuation

theory), it will be necessary to have minimum-variance unbiased estimates of the time series of returns on the beta factor, and we hope to provide such estimates in the not-too-distant future.

The evidence obtained from the time series of returns on the beta factor indicated that the beta factor had a nonzero mean and that the mean was nonstationary over time. It seems to us that we have established the presence and significance of the beta factor in explaining security returns but, as mentioned earlier, we have not provided any direct tests aimed at explaining the existence of the beta factor. We have, however, suggested an economic rationale for why capital market equilibrium is consistent with the finding of this second factor. Black [1970] has shown that if riskless borrowing opportunities are not available, the equilibrium expected returns on an asset will be a linear function of two factors, one the β factor, the other the market factor.

In addition, Black and Jensen [1970] have demonstrated that if assets are omitted from the estimated market return, a model similar in some ways to the two-factor model would result. (Roll's analysis [1969] is relevant to this issue as well.) That is, it yields a model similar in structure to (26) and implies that $\gamma_0 \neq 0$. However, it is clear from Figures 6a and 6b and Table 7 that the beta factor (the intercept in the figures and γ_0 in Table 7) is highly variable and any alternative hypothesis must be consistent with this phenomenon. In other words, it is not sufficient for an alternative model to simply imply a nonzero but constant intercept in (26).

Others have provided alternative models that are similar in structure to the Black-Jensen results. For example, Mayers [1972] has developed an equilibrium model incorporating the existence of nonmarketable assets and has shown that the basic linear relation of the traditional model is unaltered, but the constant term γ_0 will be nonzero and γ_1 will not equal $E(R_M)$. The implications of his model for the structure of asset returns are virtually identical to those of the omitted assets model. Brennan [1970] has derived the equilibrium structure of security returns when the effects of a differential tax on dividends and capital gains are considered. He also concludes that the basic linearity of the traditional model is unchanged, but a nonzero constant term must be included and γ_1 will not equal $E(R_M)$. Black and Scholes [1970], however, have tested for the existence of dividend effects and have found that the differential tax on dividends and capital gains

does not affect the structure of security returns and hence cannot explain the results reported here.

There are undoubtedly other economic hypotheses that are consistent with the findings of the existence of a second factor and consistent also with capital market equilibrium. Each hypothesis must be tested directly to determine whether it can account for the presence of the β factor. The Black-Scholes investigation of dividend effects is an example of such a test.

Appendix: The Grouping Solution to the Measurement Error Problem

Consider first the estimate $\hat{\beta}_j$ of the risk parameter in more detail. We will want to test (10) over some holding period, but we must first obtain the estimates of the risk parameter $\hat{\beta}_j$, from the time series equation given by (6). For simplicity, we shall assume that the \bar{e}_{jt} are independently distributed and have constant variance for all j and t . The least-squares estimate of β_j in (6), $\hat{\beta}_j$, is thus unbiased but subject to a sampling error $\bar{\epsilon}_j$ as in (7), and the variance of the sampling error of the estimate $\hat{\beta}_j$ is

$$\text{var}(\hat{\beta}_j|\beta_j) = \sigma^2(\bar{\epsilon}_j) = \frac{\sigma^2(\bar{e}_j)}{\phi} = \frac{\sigma^2(\bar{e})}{\phi} \quad (\text{A.1})$$

since $\sigma^2(\bar{e}_j)$ was assumed equal for all j , and where

$$\phi = \sum_{t=1}^T (R_{Mt} - R_M)^2 \quad (\text{A.2})$$

is the sample sum of squared deviations of the independent variable over the T observations used in the time series estimating equation. Hence using (11) we see that

$$\text{plim } \hat{\gamma} = \frac{\gamma_1}{1 + \sigma^2(\bar{e})/\phi S^2(\beta_j)} \quad (\text{A.3})$$

Let us assume that we can order the firms on the basis of β_j or on the basis of some instrumental variable highly correlated with β_j but independent of $\bar{\epsilon}_j$. Given the N ordered firms, we group them into M equal-size contiguous subgroups, represented by $K = 1, 2, \dots, M$ and calculate the average return

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for each group for each month t according to

$$\bar{R}_{Kt} = \frac{1}{L} \sum_{j=1}^L \bar{R}_{Kjt} \quad K = 1, 2, \dots, M \quad (\text{A.4})$$

$$L = \frac{N}{M} \quad (\text{assumed to be integer}) \quad (\text{A.5})$$

where \bar{R}_{Kjt} is the return for month t for security j in group K . We then estimate the systematic risk of the group by applying least squares to

$$\bar{R}_{Kt} = \alpha_K + \beta_K \bar{R}_{Mt} + \bar{e}_{Kt} \quad \begin{cases} K = 1, 2, \dots, M \\ t = 1, 2, \dots, T \end{cases} \quad (\text{A.6})$$

where

$$\bar{e}_{Kt} = \frac{1}{L} \sum_{j=1}^L \bar{e}_{Kjt} \quad (\text{A.7})$$

and

$$\sigma^2(\bar{e}_{Kt}) = \frac{\sigma^2(\bar{e})}{L} \quad (\text{A.8})$$

Equation (A.8) holds, since, by assumption, the \bar{e}_{Kjt} are independently distributed with equal variance. The least-squares estimate of β_K in (A.6) is $\hat{\beta}_K = \beta_K + \bar{\epsilon}_K$ and its variance is

$$\text{var}(\hat{\beta}_K|\beta_K) = \sigma^2(\bar{\epsilon}_K) = \frac{\sigma^2(\bar{e})}{\phi L} \quad (\text{A.9})$$

Now if we estimate the cross-sectional relation (10) using our M observations on $\bar{R}_K = \sum_{t=1}^T \bar{R}_{Kt}/T$ and $\hat{\beta}_K$ for some holding period, we have

$$\bar{R}_K = \gamma_0 + \gamma_1 \hat{\beta}_K + \bar{e}_K^* \quad (\text{A.10})$$

where

$$\bar{e}_K^* = \sum_{t=1}^T \frac{\bar{e}_{Kt}^*}{T} = \bar{e}_K - \gamma_1 \bar{\epsilon}_K \quad (\text{A.11})$$

Now the large sample estimate of γ_1 in (A.10)

$$\text{plim } \hat{\gamma}_1 = \frac{\gamma_1}{1 + \frac{\text{plim } \sigma^2(\bar{\epsilon}_K)}{\text{plim } S^2(\beta_K)}} = \frac{\gamma_1}{1 + \frac{\frac{1}{L} \sigma^2(\bar{e})}{\phi S^2(\beta_K)}} = \gamma_1 \quad (\text{A.12})$$

since $\text{plim } \sigma^2(\bar{e})/L = 0$ as long as $L \rightarrow \infty$ as $N \rightarrow \infty$, and this is

true as long as we hold the number of groups constant. Thus these grouping procedures will result in unbiased estimates of the parameters of (10) for large samples. Note that $S^2(\beta_K)$, the cross-sectional sample variance of the true group risk coefficients, is constant with increasing L so long as securities are assigned to groups on the basis of the ranked β_j . Note also, however, that if we randomly assigned securities to the M groups we would have $\text{plim } S^2(\beta_K) = \text{plim } S^2(\beta_j)/L$ and (A.12) would thus be identical to (A.3). Therefore, random grouping would be of no help in eliminating the bias. As can be seen, the grouping procedures we have already described in the time series tests accomplish these results. While we expect these procedures to substantially reduce the bias¹⁶ they cannot completely eliminate it in our case because the \tilde{e}_j and therefore the $\tilde{\epsilon}_j$ are not independent across firms. However, as discussed in Section III, we expect the remaining bias to be trivially small.

Notes

- Note that (4c) can be valid even though R_M is a weighted average of the R_j and therefore R_M contains e_j . This may be clarified as follows: taking the weighted sum of (3) using the weights, X_j , of each security in the market portfolio we know by the definition of R_M that $\sum_j X_j R_j = R_M$, $\sum_j X_j \beta_j = 1$, and $\sum_j X_j e_j = 0$. Thus by the last equality we know $X_j e_j = -\sum_{i \neq j} X_i e_i$, and by substitution $E(e_j X_j e_j) = E[e_j (-\sum_{i \neq j} X_i e_i)] = X_j \sigma^2(e_j)$, and this implies condition (4c) since $E(e_j R_M) = X_j \sigma^2(e_j) + E[e_j \sum_{i \neq j} X_i e_i] = 0$.
- We could develop the model and tests under the assumption of infinite variance stable distributions, but this would unnecessarily complicate some of the analysis. We shall take explicit account of these distributional problems in some of the crucial tests of significance in Section IV.
- Recall that the R_{jt} and R_{Mt} are defined as excess returns. The model can be formulated with r_{ft} omitted from (6) and therefore assumed constant (then $\alpha_j = r_f(1 - \beta_j)$) or included as a variable (as we have done), which strictly requires them to be known for all t . But experiments with estimates obtained with the inclusion of r_{ft} as a variable in (6) yield results virtually identical to those obtained with the assumption of constant r_f [and hence the exclusion of r_{ft} as a variable in (6)], so we shall ignore this problem here. See also Roll [1969] and Miller and Scholes [1972] for a thorough discussion of the bias introduced through misspecification of the riskless rate. Miller and Scholes conclude as we do that these problems are not serious.
- Unbiased measurement errors in $\hat{\beta}_j$ cause severe difficulties with the cross-sectional tests of the model, and it is important to note that the time series form of the tests given by (6) are free of this source of bias. Unbiased measurement errors in $\hat{\beta}_j$, which is estimated simultaneously with α_j in the time series formulation, cause errors in the estimate of α_j but no systematic bias. Measurement errors in R_{Mt} may cause difficulties in

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- both the cross-sectional and time series forms of the tests, but we shall ignore this issue here. For an analysis of the problems associated with measurement errors in R_{Mt} , see Black and Jensen [1970], Miller and Scholes [1972], and Roll [1969].
- Treasury Bill rates were obtained from the Salomon Brothers & Hutzler quote sheets at the end of the previous month for the following month. Dealer commercial paper rates were obtained from Banking and Monetary Statistics, Board of Governors of the Federal Reserve System, Washington, D.C.
 - The choice of the number of portfolios is somewhat arbitrary. As we shall see below, we wanted enough portfolios to provide a continuum of observations across the risk spectrum to enable us to estimate the suspected relation between α_K and β_K .
 - Note that in order for the risk parameters of the groups β_K , to be stationary through time, our procedures require that firms leave and enter the sample symmetrically across the entire risk spectrum.
 - See also Miller and Scholes [1972], who provide a careful analysis (using procedures that are complementary to but much different from those suggested here) of many of these problems with cross-sectional tests and their implications for the interpretation of previous empirical work.
 - Intuitively one can see that the measurement error problem is virtually eliminated by these procedures because the errors in $\hat{\beta}_K$ become extremely small. Since the correlations $r(\hat{R}_K, \hat{R}_M)$ are so high in Table 2, the standard errors of estimate of the coefficients β_K are all less than 0.022, and nine of them are less than 0.012. The average standard error of estimate for the ten $\hat{\beta}_K$ coefficients given in Table 2 for the entire period was 0.0101 and the cross-sectional variance of the $\hat{\beta}_K$, $S^2(\hat{\beta}_K)$ was 0.1144. Hence, assuming $S^2(\hat{\beta}_K) = S^2(\beta_K)$, squaring 0.0101, and using (11), we see that our estimate of γ_1 will be greater than 99.9% of its true value.
 - The analysis was also performed where the coefficients were reestimated for each subperiod, and the results were very similar because the $\hat{\beta}_K$ were quite stable over time. We report these results since this estimation procedure seemed to result in a slightly larger spread of the $\hat{\beta}_K$ and since the increased sample sizes tends to further reduce the bias caused by the variance of the measurement error in $\hat{\beta}_K$.
 - In fact, there is an infinite number of such zero β portfolios. Of all such portfolios, however, r_2 is the return on the one with minimum variance. (We are indebted to John Long for the proof of this point.)
 - We say unreasonably high because the coefficients change from period to period by amounts ranging up to almost seven times their estimated standard errors.
 - Although the traditional form of the model is consistent with the existence of the β factor if its excess return had a zero mean, clearly it would not provide as complete an explanation of the structure of asset returns as a model that explicitly incorporated such a factor. In particular, under these circumstances the traditional form would provide an adequate description of security returns over fairly lengthy periods of time, say three years or more, but it would probably not furnish an adequate description of security returns over much shorter intervals.
 - We only observe the residual variance from the single variable regression, and, as we can see from (13), this will be equal to $(1 - \beta_j)^2 \sigma^2(\tilde{r}_{2t}) + \sigma^2(\tilde{u}_{jt})$. However, there are more general procedures for estimating \tilde{r}_{2t} in

- the situation of nonidentical $\sigma^2(\hat{w}_j)$ and $\text{cov}(\hat{w}_j, \hat{w}_i) = 0$ for $j \neq i$. But we leave an investigation of the properties of these estimates and some additional tests of the two-factor model for a future paper. If the assumption of identical $\sigma^2(\hat{w}_j)$ made here is inappropriate, we still obtain an unbiased estimate of the \hat{R}_2 . However, the estimated variance of \hat{R}_2 , which is of some interest, will be greater than the true variance.
15. The serial correlation for the entire period appears significant. Indeed, the serial correlation in the last period, 0.414, seems very large and even highly significant, with a t value of 4.6. However, the coefficients in the earlier periods seem to border on significance but show an inordinately large amount of variability, thus indicating substantial nonstationarity.
 16. As mentioned earlier, the choice of the number of groups is somewhat arbitrary and, for any given sample size, involves a tradeoff between the bias and the degree of sampling error in the estimates of the parameters in (10). In an unpublished study of the properties of the grouping procedures by simulation techniques, Jensen and Mendu Rao have found that, when $\sigma^2(\hat{\epsilon}_i) = S^2(\beta_i)$, the use of ten groups with a total sample size of $N = 400$, yields estimates of the coefficient γ_i in (10) which, on the average, are biased downward by less than 0.9% of their true value and have a standard error of estimate about 50% higher than that obtained with ungrouped data. The ungrouped sample estimates were, of course, 50% of their true values on the average [as implied by (11) for these assumed variances].

References

- BLACK, FISCHER. "Capital Market Equilibrium With No Riskless Borrowing or Lending" (forthcoming in the *Journal of Business*).
- , and JENSEN, MICHAEL C. "Incomplete Measurement of Market Returns and Its Implications for Tests of the Asset Pricing Model" (unpublished manuscript, November, 1970).
- , and SCHOLES, MYRON. "Dividend Yields and Common Stock Returns: A New Methodology" (Cambridge: Sloan School of Management, Massachusetts Institute of Technology, Working Paper #488-70, September, 1970).
- BLATTBERG, ROBERT, and SARGENT, THOMAS. "Regression with Paretian Disturbances: Some Sampling Results," *Econometrics*, V. 39 (May, 1971) 501-10.
- BLUME, MARSHALL. "The Assessment of Portfolio Performance" (Ph.D. dissertation, University of Chicago, 1968).
- DOUGLAS, GEORGE W. "Risk in the Equity Markets: An Empirical Appraisal of Market Efficiency," *Yale Economic Essays*, IX (Spring, 1969), 3-45.
- FAMA, EUGENE F. "Risk, Return, and Equilibrium: Some Clarifying Comments," *Journal of Finance* (March, 1968), 29-40.
- , "Risk, Return, and Equilibrium," *Journal of Political Economy*, LXXIX (January-February, 1971).
- , and BABIAK, HARVEY. "Dividend Policy: An Empirical Analysis," *Journal of the American Statistical Association*, LXIII (December, 1968), 1132-61.
- , FISHER, LAWRENCE; JENSEN, MICHAEL C.; and ROLL, RICHARD. "The Adjustment of Stock Prices to New Information," *International Economic Review*, X (February, 1969), 1-26.

- , and ROLL, RICHARD. "Some Properties of Symmetric Stable Distributions," *Journal of the American Statistical Association*, LXIII (September, 1968), 817-36.
- JENSEN, MICHAEL C. "The Performance of Mutual Funds in the Period 1945-64," *Journal of Finance*, XXIII (May, 1968), 389-416.
- , "Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios," *Journal of Business*, XLII (April, 1969), 167-247.
- , "Optimal Utilization of Market Forecasts and The Evaluation of Investment Performance" (Working Paper No. 7109, University of Rochester School of Management, September, 1971).
- KING, BENJAMIN F. "Market and Industry Factors in Stock Price Behavior," *Journal of Business*, XXXIX (January 1966, Part II), 134-90.
- LINTNER, JOHN. "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets," *Review of Economics and Statistics*, XLVII (February, 1965a), 13-37.
- , "Security Prices, Risk, and Maximal Gains from Diversification," *Journal of Finance*, XX (December, 1965b), 587-616.
- LONG, JOHN B., JR. "Consumption-Investment Decisions and Equilibrium in the Securities Market," this volume, 1972.
- MARKOWITZ, HARRY M. *Portfolio Selection: Efficient Diversification of Investments*, Cowles Foundation Monograph No. 16 (New York: John Wiley & Sons, 1959).
- MAYERS, DAVID. "Nonmarketable Assets and Capital Market Equilibrium Under Uncertainty," this volume, 1971.
- MILLER, MERTON H., and SCHOLES, MYRON. "Rates of Return in Relation to Risk: A Re-examination of Some Recent Findings," this volume, 1972.
- MOSSIN, JAN. "Equilibrium in a Capital Asset Market," *Econometrica*, XXXIV (October, 1966), 768-83.
- PRESS, S. JAMES. "A Compound Events Model for Security Prices," *Journal of Business*, XL (July, 1967), 317-37.
- ROLL, RICHARD. "Bias in Fitting the Sharpe Model to Time Series Data," *Journal of Financial and Quantitative Analysis*, IV (September, 1969), 271-89.
- SHARPE, WILLIAM F. "A Simplified Model for Portfolio Analysis," *Management Science* (January, 1963), 277-93.
- , "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk," *Journal of Finance*, XIX (September, 1964), 425-42.
- , "Risk Aversion in the Stock Market," *Journal of Finance*, XX (September, 1965), 416-22.
- , "Mutual Fund Performance," *Journal of Business*, XXXIX, Part 2 (January, 1966), 119-38.
- TREYNOR, JACK L. "Toward a Theory of Market Value of Risky Assets" (unpublished manuscript, 1961).
- , "How to Rate Management of Investment Funds," *Harvard Business Review*, XLIII (January-February, 1965), 63-75.
- WALD, ABRAHAM. "The Fitting of Straight Lines if Both Variables are Subject to Error," *Annals of Mathematical Statistics*, II (1940), 284-300.
- WISE, JOHN. "Linear Estimators for Linear Regression Systems Having Infinite Variances" (paper presented at the Berkeley-Stanford Mathematical Economics Seminar, October, 1963).

THE EFFECT OF PERSONAL TAXES AND DIVIDENDS ON CAPITAL ASSET PRICES

Theory and Empirical Evidence

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This paper derives an after tax version of the Capital Asset Pricing Model. The model accounts for a progressive tax scheme and for wealth and income related constraints on borrowing. The equilibrium relationship indicates that before-tax expected rates of return are linearly related to systematic risk and to dividend yield. The sample estimates of the variances of observed betas are used to arrive at maximum likelihood estimators of the coefficients. The results indicate that, unlike prior studies, there is a strong positive relationship between dividend yield and expected return for NYSE stocks. Evidence is also presented for a clientele-effect.

1. Introduction

The effect of dividend policy on the prices of equity securities has been an issue of interest in financial theory. The traditional view was that investors prefer a current, certain return in the form of dividends to the uncertain prospect of future dividends. Consequently, they bid up the price of high yield securities relative to low yield securities [see Cottle, Dodd and Graham (1962) and Gordon (1963)]. In their now classic paper Miller and Modigliani (1961) argued that in a world without taxes and transactions costs the dividend policy of a corporation, given its investment policy, has no effect on the price of its shares. In a world where capital gains receive preferential treatment relative to dividends, the Miller-Modigliani 'irrelevance proposition' would seem to break down. They argue, however, that since tax rates vary across investors each corporation would attract to itself a clientele of investors that most desired its dividend policy. Black and Scholes (1974) assert that corporations would adjust their payout policies until in equilib-

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rium the spectrum of policies offered would be such that any one firm is unable to affect the price of its shares by (marginal) changes in its payout policy.

In the absence of taxes, capital asset pricing theory suggests that individuals choose mean-variance efficient portfolios. Under personal income taxes, individuals would be expected to choose portfolios that are mean-variance efficient in after-tax rates of return. However, the tax laws in the United States are such that some economic units (for example, corporations) would seem to prefer dividends relative to capital gains. Other units (for example, non-profit organizations) pay no taxes and would be indifferent to the level of yield for a given level of expected return. The resulting effect of dividend yield on common stock prices seems to be an empirical issue.

Brennan (1973) first proposed an extended form of the single period Capital Asset Pricing Model that accounted for the taxation of dividends. Under the assumption of proportional individual tax rates (not a function of income), certain dividends, and unlimited borrowing at the riskless rate of interest (among others) he derived the following equilibrium relationship:

$$E(\bar{R}_i) - r_f = b\beta_i + \tau(d_i - r_f), \quad (1)$$

where \bar{R}_i is the before tax total return to security i , β_i is its systematic risk, $b = [E(R_m) - r_f - \tau(d_m - r_f)]$ is the after-tax excess rate of return on the market portfolio, r_f is the return on a riskless asset, d_i is the dividend yield on security i ; and the subscript m denotes the market portfolio. τ is a positive coefficient that accounts for the taxation of dividends and interest as ordinary income and taxation of capital gains at a preferential rate.

In empirical tests [of the form (1)] to date, the evidence has been inconsistent. Black and Scholes (1974, p. 1) conclude that

...it is not possible to demonstrate that the expected returns on high yield common stocks differ from the expected returns on low yield common stocks either before or after taxes.³

Alternatively, stated in terms of the Brennan model, their tests were not sufficiently powerful either to reject the hypothesis that $\tau = 0$ or to reject the hypothesis that $\tau = 0.5$. Rosenberg and Marathe (1978) attribute the lack of power in the Black-Scholes tests to (a) the loss in efficiency from grouping stocks into portfolios and (b) the inefficiency of their estimating procedures, which are equivalent to Ordinary Least Squares. Using an instrumental variables approach to the problem of errors in variables and a more complete specification of the variance-covariance matrix (of disturbances in the regression), Rosenberg and Marathe find that the dividend term is statistically significant. Both the Rosenberg and Marathe and the Black and Scholes studies use an average dividend yield from the prior twelve month

period as a surrogate for the expected dividend yield. Since most dividends are paid quarterly, their proxy understates the expected dividend yield in ex-dividend months and overstates it in those months that a stock does not go ex-dividend, thereby reducing the efficiency of the estimated coefficient on the dividend yield term. Both studies (Rosenberg and Marathe in using instrumental variables, and Black-Scholes in grouping) sacrifice efficiency to achieve consistency.

The present paper derives an after-tax version of the Capital Asset Pricing Model that accounts for a progressive tax scheme and both wealth and income related constraints on borrowing. Alternative econometric procedures are used to test the implications of this model. Unlike prior tests of the CAPM, the tests here use the variance of the observed betas to arrive at maximum likelihood estimators of the coefficients. Consistent estimators are obtained without loss of efficiency. Also, for ex-dividend months the expected dividend yield based on prior information is used, and for other months the expected dividend yield is set equal to zero. While the estimate of the coefficient of dividend yield is of the same order of magnitude as that found in Black and Scholes, and lower than that found by Rosenberg and Marathe, the t -value is substantially larger, indicating a substantial increase in efficiency. Furthermore, the tests are consistent with the existence of a clientele effect, indicating that the aversion for dividends relative to capital gains is lower for high yield stocks and higher for low yield stocks. This is consistent with the Elton and Gruber (1970) empirical results on the ex-dividend behavior of common stocks.

2. Theory

This section derives a version of the Capital Asset Pricing Model that accounts for the tax treatment of dividend and interest income under a progressive taxation scheme. Two types of constraints on individual borrowing are imposed. The first constrains the maximum interest on riskless borrowing to be equal to the individual's dividend income, and the second is a margin requirement that restricts the fraction of security holdings that may be financed through borrowing. In previous published work, Brennan (1973) derives an after-tax version of the Capital Asset Pricing Model with unlimited borrowing and with constant tax rates which may vary across individuals.⁴ Under his model when interest on borrowing exceeds dividend income the investor would pay a negative tax. The theoretical model

³Brennan (1970) also derives a model with a progressive tax scheme. However, he neither considers constraints on borrowing nor the limiting of interest deduction on margin borrowing to dividend income. Consideration of the limit on the interest tax deduction to dividend income combined with a positive capital gains tax would result in a preference for dividends by those individuals whose interest payments exceed their dividend income.

developed here may be viewed as an extension of the Brennan analysis to account for constraints on borrowing along with a progressive tax scheme. Special cases of the model are examined, where the income related constraint and/or the margin constraint on individual borrowing are removed.

The following assumptions are made:

- (A.1) Individuals' Von Neumann-Morgenstern utility functions are monotone increasing strictly concave functions of after-tax end of period wealth.
- (A.2) Security rates of return have a multivariate normal distribution.
- (A.3) There are no transactions costs, and no restrictions on the short sale of securities, and individuals are price takers.
- (A.4) Individuals have homogeneous expectations.
- (A.5) All assets are marketable.
- (A.6) A riskless asset, paying a constant rate r_f , exists.
- (A.7) Dividends on securities are paid at the end of the period and are known with certainty at the beginning of the period.
- (A.8) Income taxes are progressive and the marginal tax rate is a continuous function of taxable income.
- (A.9) There are no taxes on capital gains.
- (A.10) Constraints on individuals' borrowing are of the form:
 - (i) A constraint that the interest on borrowing cannot exceed dividend income, called the income constraint on borrowing, and/or
 - (ii) a margin constraint that the individual's net worth be at least a given fraction of the market value of his holdings of risky securities.

Assumptions (A.1) through (A.6) are standard assumptions of the Capital Asset Pricing Model. Assumptions (A.1) and (A.2) taken together imply that preferences can be described over the mean and the variance of after-tax end of period wealth. Under these conditions individuals prefer more mean return and are averse to the variance of return. The individual's marginal rate of substitution between the mean and variance of after-tax end of period wealth, at the optimum, can be written as the ratio of his global risk tolerance to his initial period wealth. That is, if $u_k(W_1^k)$ is the k th individual's utility function in terms of after-tax end of period wealth, $f^k(\mu_k, \sigma_k^2)$ is his objective function in terms of the mean and variance of the after-tax portfolio return, and W^k is his initial wealth,

$$f_1^k - 2f_2^k = \theta^k W^k, \quad (2)$$

where $\theta^k = -E(u^k) E(u^k)$ is the individual's global risk tolerance at the optimum [see Gonzalez-Gaverra (1973) and Rubinstein (1973)]. (A.7) implies

that dividends are announced at the beginning of the period and paid at its end. Since firms display relatively stable dividend policies this may be a reasonable approximation for a monthly holding period.

Assumption (A.8) closely resembles the tax treatment of ordinary dividends in the U.S. The \$100 dividend exclusion is ignored, since the small magnitude of the exclusion implies that for the majority of stockholders the marginal tax rate applicable to ordinary income is the same as that applied to dividends. Assumption (A.9) abstracts from the effects of capital gains taxes. Since capital gains are taxed only upon realization, their treatment in a single period model is not possible. It is, however, straightforward to model a capital gains tax on an accrual basis [see Brennan (1973)]. Since most capital gains go unrealized for long periods, this would tend to overstate the effect of the actual tax. Noting that the ratio of realizations to accruals is small, and that capital gains are exempt from tax when transferred by inheritance, Bailey (1969) has argued that the effective tax is rather small.

Under assumption (A.8), the k th individual's average tax rate, t^k , is a non-decreasing function of his taxable end of period income Y_1^k ,

$$\begin{aligned} t^k &= g(Y_1^k), \\ g(0) &= 0, \quad g'(Y_1^k) = 0 \quad \text{for } Y_1^k \leq 0, \\ &> 0 \quad \text{for } Y_1^k > 0. \end{aligned} \quad (3)$$

The k th individual's marginal tax rate, written T^k , is the first derivative of taxes paid with respect to taxable income. This is equal to the average tax rate plus the product of taxable income and the derivative of the average tax rate,

$$T^k \equiv d(t^k Y_1^k) / dY_1^k = t^k + Y_1^k g'(Y_1^k) \quad (4)$$

The margin constraint in assumption (A.10-ii) resembles institutional margin restrictions. By (A.10-i), borrowing is constrained up to a point where interest paid equal dividends received. This constraint incorporates the casual empirical observation that loan applications require information on income (which this constraint accounts for) in addition to information on wealth (which the margin constraint accounts for). One or both of the constraints may be binding, for a given individual. This formulation allows the analysis of an equilibrium with both constraints, with only one of them imposed or with no borrowing constraints.

The following notation is employed:

R_i = the total before tax rate of return on security i , equal to the ratio of the value of the security at the end of the period plus dividends over its current value, less one,

- d_i = the dividend yield on security i , equal to the dollar dividend divided by the current price,
- X_i^k = the fraction of the k th individual's wealth invested in the i th risky asset, $i = 1, 2, \dots, N$ (a negative value is a short sale),
- X_f^k = the fraction of the k th individual's wealth invested in the safe asset (a negative value indicates borrowing),
- \bar{R}_k = the before-tax rate of return on the k th individual's portfolio,
- W^k = the k th individual's initial wealth, and
- $f^k(\mu_k, \sigma_k^2)$ = the k th individual's expected utility function defined over the mean and variance of after-tax portfolio return, μ_k and σ_k^2 , respectively.

The k th individual's ordinary income is then

$$Y_i^k = W^k \left(\sum_i X_i^k d_i + X_f^k r_f \right) \quad (5)$$

The mean after-tax return on the individual's portfolio is

$$\mu_k = \sum_i X_i^k E(\bar{R}_i) + X_f^k r_f - t^k \left(\sum_i X_i^k d_i + X_f^k r_f \right) \quad (6)$$

and under assumption (A.7) the variance of after-tax return is

$$\begin{aligned} \sigma_k^2 &= \sum_i \sum_j X_i^k X_j^k \text{cov}(\bar{R}_i - d_i t^k, \bar{R}_j - d_j t^k) \\ &= \sum_i \sum_j X_i^k X_j^k \text{cov}(\bar{R}_i, \bar{R}_j) \end{aligned} \quad (7)$$

By assumption (A.10-4) the income constraint on borrowing is

$$W^k \left\{ \sum_i X_i^k d_i + X_f^k r_f \right\} \geq 0 \quad (8)$$

and the margin constraint on borrowing is

$$W^k \left\{ (1-x) \sum_i X_i^k + X_f^k \right\} \geq 0 \quad (9)$$

where x ; $0 < x < 1$, is the margin requirement on the individual. As pointed out earlier, one or both of these constraints may be binding.

The k th individual's optimization problem is stated in terms of the

following Lagrangian:

$$\begin{aligned} \mathcal{L}^k &\equiv f^k(\mu_k, \sigma_k^2) + \lambda_1^k \left[1 - \sum_i X_i^k - X_f^k \right] \\ &+ \lambda_2^k \left[\sum_i X_i^k d_i + X_f^k r_f - S_2^k \right] + \lambda_3^k \left[(1-x) \sum_i X_i^k + X_f^k - S_3^k \right] \end{aligned} \quad (10)$$

where

- λ_1^k = the Lagrange multiplier on the k th individual's budget,
- λ_2^k, S_2^k = the Lagrange multiplier and non-negative slack variable for the income related constraint on the k th individual's borrowing, respectively (when the constraint is binding $\lambda_2^k > 0$ and $S_2^k = 0$, and when it is not binding $\lambda_2^k = 0$ and $S_2^k \geq 0$), and
- λ_3^k, S_3^k = the Lagrange multiplier and non-negative slack variables for the margin constraint on the k th individual's borrowing, respectively; again if the constraint is binding (not binding), $\lambda_3^k > (=) 0$ and $S_3^k = (\geq) 0$.

The stationary points satisfy the following first order conditions:

$$\begin{aligned} \frac{\partial \mathcal{L}^k}{\partial X_i^k} &= f_1^k \{ E(\bar{R}_i) - [t^k + Y_1^k g'(Y_1^k)] d_i \} - \lambda_1^k + \lambda_2^k d_i \\ &+ \lambda_3^k (1-x) + 2f_2^k \sum_j X_j^k \text{cov}(\bar{R}_i, \bar{R}_j) = 0, \quad i = 1, 2, \dots, N, \end{aligned} \quad (11)$$

$$\frac{\partial \mathcal{L}^k}{\partial X_f^k} = f_1^k \{ r_f - [t^k + Y_1^k g'(Y_1^k)] r_f \} - \lambda_1^k + \lambda_2^k r_f + \lambda_3^k = 0 \quad (12)$$

where $f_1^k \equiv \partial f^k(\mu_k, \sigma_k^2) / \partial \mu_k$, $f_2^k \equiv \partial f^k(\mu_k, \sigma_k^2) / \partial \sigma_k^2$. The other first order conditions are the constraints and specify the signs of the Lagrangian multipliers and are omitted here. The progressive nature of the tax scheme [assumption (A.8)] ensures that the mean variance efficient frontier in after-tax terms is concave, and this together with risk aversion from assumption (A.8) is sufficient to guarantee the second order conditions for a maximum.

Recall the following relationships: (i) the marginal tax rate, $T^k = [t^k + Y_1^k g'(Y_1^k)]$, (ii) the covariance $\sum_j X_j^k \text{cov}(\bar{R}_i, \bar{R}_j) = \text{cov}(\bar{R}_k, \bar{R}_k^*)$, and (iii) the global risk tolerance $\theta^k = W^k (f_1^k / 2f_2^k)$. Subtracting relation (12) from relation (11) and re-arranging terms yields

$$\begin{aligned} [E(\bar{R}_i) - r_f] &= x(\lambda_3^k f_1^k) + (W^k \theta^k) \text{cov}(\bar{R}_i, \bar{R}_k^*) \\ &+ [T^k - (\lambda_2^k f_1^k)] (d_i - r_f) \end{aligned} \quad (13)$$

Relation (13) must be satisfied for the individual's portfolio optimum.

Market equilibrium requires that relation (13) holds for all individuals, and that markets clear. For markets to clear all assets have to be held which implies the conservation relation (14) that requires the value weighted average of all individuals' portfolios be equal to the market portfolio,

$$\sum_k (W^k/W^m) \bar{R}_p^k = \bar{R}_m \tag{14}$$

or

$$\sum_k W^k \bar{R}_p^k = W^m \bar{R}_m$$

where

$$\sum_k W^k \equiv W^m$$

Multiplying both sides of relation (13) by θ^k , summing over all individuals, using the conservation relation (14) and re-arranging terms yields

$$E(\bar{R}_p) - r_f = a + b\beta_1 + c(d_1 - r_f) \tag{15}$$

where

$$\beta_1 \equiv \text{cov}(\bar{R}_p, \bar{R}_m) / \text{var}(\bar{R}_m)$$

$$a \equiv \alpha \sum_k (\theta^k / \theta^m) (\lambda_2^k / f_1^k)$$

$$b \equiv \text{var}(\bar{R}_m) / (W^m \theta^m)$$

$$c \equiv \sum_k (\theta^k / \theta^m) (T^k - (\lambda_2^k / f_1^k))$$

$$\theta^m \equiv \sum_k \theta^k$$

The term 'a', the intercept of the implied security market plane, is the fractional margin requirement α times the weighted average of the ratios of individual shadow prices on the margin constraint and the expected marginal utility of mean return. The weights, (θ^k / θ^m) , are proportional to individuals' global risk tolerances. When $\alpha > 0$ and the constraint is binding for some individuals, $\lambda_2^k > 0$ for some k , a is positive. In the absence of margin requirements ($\alpha = 0$) or when the margin constraint is not binding for all individuals, ($\lambda_2^k = 0$ for all k), $a = 0$.

Interpreting eq. (15), 'a' is the excess return on a zero beta portfolio (relative to the market) whose dividend yield is equal to the riskless rate, i.e.,

$a = E(\bar{R}_p) - r_f$. The term 'b', the coefficient on beta is equal to the product of the variance of the rate of return on the market portfolio and global market relative risk aversion, i.e., $b = \text{var}(\bar{R}_m) / (W^m \theta^m)$. Since relation (15) also holds for the market portfolio, b may be alternatively expressed as $b = [E(\bar{R}_m) - r_f - c(d_m - r_f) - a]$. If 'c' is interpreted as a tax rate, b may be viewed as the expected after-tax rate of return on a hedge portfolio which is long the market portfolio and short a portfolio having a zero beta and a dividend yield equal to the riskless rate of interest; i.e., $b = [E(\bar{R}_m) - E(\bar{R}_z) - c(d_m - d_z)]$. The term 'c' is a weighted average of individual's marginal tax rates $(\sum_k (\theta^k / \theta^m) T^k)$, less the weighted average of the individual's ratios of the shadow price on the income related borrowing constraint and the expected marginal utility of mean portfolio return $(\sum_k (\theta^k / \theta^m) (\lambda_2^k / f_1^k))$. For the cases where the income related margin constraint is either non-existent or non-binding for all individuals, c is simply the weighted average of marginal tax rates, and is positive. Otherwise, the sign of 'c' depends on the magnitudes of these two terms. Define B as the set of indices of those individuals k for whom the income related constraint is binding; and define N (not B) as the set of indices for which the constraint is non-binding. Now for $k \in B$, $\lambda_2^k > 0$, $Y_1^k = 0$ and $T^k = r^k = 0$. And for $k \in N$, $\lambda_2^k = 0$, $Y_1^k \geq 0$ and $T^k \geq r^k \geq 0$. Hence

$$c = \sum_{k \in N} \frac{\theta^k}{\theta^m} T^k - \sum_{k \in B} \frac{\theta^k \lambda_2^k}{\theta^m f_1^k} \tag{16}$$

The individuals in N may be viewed as a clientele that prefers capital gains to dividends. The individuals in B may be viewed as a clientele that shows a preference for dividends; in the context of this model, these individuals wish to borrow more than the income related constraint allows them, and increased dividends serve to increase their debt capacity without additional tax obligations. To this point corporate dividend policies have been treated as exogenous in this model.

Now consider supply adjustments by value maximizing firms. If $c > 0$ ($c < 0$) firms could increase their market values by decreasing (increasing) cash dividends and increasing (decreasing) share repurchases or decreasing (increasing) external equity flotations. Value maximizing firms (in absence of any restrictions the IRS may impose) would adjust the supply of dividends until an equilibrium was obtained where

$$\sum_{k \in N} (\theta^k / \theta^m) T^k = \sum_{k \in B} (\theta^k / \theta^m) (\lambda_2^k / f_1^k) \tag{17}$$

When condition (17) is satisfied an individual firm's dividend decision does

not affect its market value, $c=0$ and dividend yield has no effect on the before tax rate of return on any security.²

Under unrestricted supply effects, $c=0$ and the equilibrium relationship (15) reduces to the before tax zero beta version of the Capital Asset Pricing Model:

$$E(\bar{R}_i) = (a + r_f)(1 - \beta_i) + E(\bar{R}_m)\beta_i \quad (18)$$

Note that this obtains in the presence of taxes. Long (1975) has studied conditions under which the before tax and after-tax mean variance efficient frontiers are identical for any individual. He does not, however, study the equilibrium as is done here: for even though the before tax and after-tax individual mean variance frontiers are not identical, (18) demonstrates that prices are found as if there is no tax effect.

In the case where there are no margin constraints, $a=0$, and relation (18) reduces to the before tax traditional Sharpe-Lintner version of the Capital Asset Pricing Model,

$$E(\bar{R}_i) = r_f + [E(\bar{R}_m) - r_f]\beta_i \quad (19)$$

Return now to the case where the income related borrowing constraint is absent. Then, in (16), $c = \sum T^t (\theta^t / \theta^m) \equiv T^m$, the 'market' marginal tax bracket: and the relation reduces to an after-tax version of the Black (1972), Lintner (1965), Vasicek (1971) zero beta model,

$$E(\bar{R}_i) - T^m d_i = [r_f(1 - T^m) + a](1 - \beta_i) + (E(\bar{R}_m) - T^m d_m)\beta_i \quad (20)$$

When there is no margin constraint or when it is non-binding for all individuals, $a=0$, and relation (20) reduced to an after-tax version of the Sharpe (1964), Lintner (1965) model,

$$E(\bar{R}_i) - T^m d_i = [r_f(1 - T^m)] + [E(\bar{R}_m) - T^m d_m - r_f(1 - T^m)]\beta_i \quad (21)$$

However, in none of these cases is T^m a weighted average of individual

²Note, however, that this equilibrium, where dividends do not affect before tax returns, may not exist. For example, the income constraint may be binding for no one even when dividends are zero. If all individuals had the same endowments and had the same utility functions this constraint would be non-binding for all individuals.

This argument is in the spirit of the 'supply effect' alluded to in Black and Scholes (1974). Unlike the recent argument in Miller and Scholes (1977) for a zero dividend effect, the present argument does not depend on an artificial segmentation of accumulators and non-accumulators, and the existence of tax-sheltered lending opportunities with zero administrative costs. The major problem with the argument here is that with the existence of two distinct clienteles, one preferring higher dividends and the other preferring lower dividends, shareholders would not agree on the direction in which firms should change their dividend. Thus the assertion of value maximizing behavior by firms does not have a strong theoretical basis.

average tax rates. It is only when taxes are simply proportional to income that $T^* = t^*$, and relation (21) is identical to the equilibrium implied by Brennan (1973), who assumes a constant tax rate that may differ across investors.

3. Empirical tests

From the theory, the equilibrium specification to be tested is

$$E(\bar{R}_i) - r_f = a + b\beta_i + c(d_i - r_f) \quad (22)$$

The hypotheses are $a > 0$, $b > 0$, and in the absence of the income related constraint on borrowing $c > 0$.

In obtaining econometric estimates of a , b and c , two problems arise. The first is that expectations are not directly observed. The usual procedure is to assume that expectations are rational and that the parameters a , b and c are constant over time; the realized returns are used on the left-hand side

$$\bar{R}_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (d_{it} - r_{ft}) + \bar{\epsilon}_{it}, \quad \begin{matrix} i = 1, 2, \dots, N_p \\ t = 1, 2, \dots, T \end{matrix} \quad (23)$$

where \bar{R}_{it} is the return of security i in period t , β_{it} and d_{it} are the systematic risk and the dividend yield of security i in period t , respectively. The disturbance term $\bar{\epsilon}_{it}$ is $\bar{R}_{it} - E(\bar{R}_{it})$, the deviation of the realized return from its expected value. The coefficients γ_0 , γ_1 and γ_2 correspond to a , b and c . The variance of the column vector of disturbance terms, $\bar{\epsilon} \equiv \{\bar{\epsilon}_{it}; i = 1, 2, \dots, N_p, t = 1, \dots, T\}$, is not proportional to the identity matrix, since contemporaneous covariances between security returns are non-zero, and return variances differ across securities. (Note that in order to conserve space $\bar{\epsilon}$ is used to denote a column vector.) This means that ordinary least squares (OLS) estimators are inefficient, for either a cross-sectional regression in month t , or a pooled time series and cross-sectional regression. The computed variance of the OLS estimator (based on the assumption that the variance of $\bar{\epsilon}$ is proportional to the identity matrix) is not equal to the true variance of the estimator.

The second problem is that the true population β_{it} 's are unobservable. The usual procedure uses an estimate from past data, and this estimate has an associated measurement error. This means that the OLS estimates will be biased and inconsistent. The method used in tackling these problems is discussed in this section.

To fix matters, assume that data exist for rates of return, true betas and for dividend yields in periods t , $i = 1, 2, \dots, N_p$, securities in each period t , $t = 1, \dots, T$. Define the vector of realized excess returns as

$$\bar{R} \equiv \{\bar{R}_1, \bar{R}_2, \dots, \bar{R}_n, \dots, \bar{R}_T\},$$

where

$$\bar{R}_t \equiv \{(\bar{R}_{1t} - r_{ft}), (\bar{R}_{2t} - r_{ft}), (\bar{R}_{3t} - r_{ft}), \dots, (\bar{R}_{N_t} - r_{ft})\},$$

and the matrices X of explanatory variables as

$$X_t \equiv \{X_{1t}, X_{2t}, \dots, X_{nt}, \dots, X_{Tt}\},$$

where

$$X_t \equiv \begin{bmatrix} 1 & \beta_{1t} & (d_{1t} - r_{ft}) \\ 1 & \beta_{2t} & (d_{2t} - r_{ft}) \\ \vdots & \vdots & \vdots \\ 1 & \beta_{N_t} & (d_{N_t} - r_{ft}) \end{bmatrix}$$

By defining the vector of regression coefficients as $\Gamma = \{\gamma_0, \gamma_1, \gamma_2\}$ one can write the pooled time series and cross-sectional regression as

$$\bar{R}_t = X_t \Gamma + \bar{\varepsilon}_t \quad (24)$$

where

$$\bar{\varepsilon}_t \equiv \{\bar{\varepsilon}_{1t}, \bar{\varepsilon}_{2t}, \dots, \bar{\varepsilon}_{nt}, \dots, \bar{\varepsilon}_{N_t}\},$$

and

$$\bar{\varepsilon}_t \equiv \{\bar{\varepsilon}_{1t}, \bar{\varepsilon}_{2t}, \dots, \bar{\varepsilon}_{nt}, \dots, \bar{\varepsilon}_{N_t}\}.$$

It is assumed that

$$E(\bar{\varepsilon}) = 0,$$

and that

$$E(\bar{\varepsilon}_t \bar{\varepsilon}_s) = V_t,$$

some symmetric positive definite matrix of order $(N_t \times N_t)$. It is also assumed that security returns are serially uncorrelated, so that

$$E(\bar{\varepsilon}_t \bar{\varepsilon}_s) = 0 \text{ for } t \neq s.$$

This means that the variance-covariance matrix $V \equiv E(\bar{\varepsilon} \bar{\varepsilon}')$ is block diagonal, with the off-diagonal blocks being zero. The matrices V_t appears along the diagonal of V .

It is well known that the estimator for Γ which is linear in \bar{R}_t , unbiased and has minimum variance is unique, and is given by the Aitken or Generalized Least Squares estimator (GLS),

$$\hat{\Gamma} = (X' V^{-1} X)^{-1} X' V^{-1} \bar{R} \quad (25)$$

From the block diagonal nature of V , it follows that V^{-1} is also block diagonal. The matrices V_t^{-1} , $t = 1, 2, \dots, T$, appear along the diagonal of V^{-1} , with the off-diagonal blocks being zero. Assuming that Γ is an intertemporal constant, $\hat{\Gamma}$ can be estimated by efficiently pooling T independent GLS estimates of Γ , namely $\hat{\Gamma}_1, \hat{\Gamma}_2, \dots, \hat{\Gamma}_t, \dots, \hat{\Gamma}_T$, obtained by using cross-sectional data in periods 1, 2, ..., t , ..., T ,

$$\hat{\Gamma}_t = (X_t' V_t^{-1} X_t)^{-1} X_t' V_t^{-1} \bar{R}_t, \quad t = 1, 2, \dots, T. \quad (26)$$

That is, the monthly estimators $\hat{\gamma}_k$ for γ_k , $k = 0, 1$ or 2 , are serially uncorrelated, and the pooled GLS estimator $\hat{\gamma}_k$ is found as the weighted mean of the monthly estimates, where the weights are inversely proportional to the variances of these estimates,

$$\hat{\gamma}_k = \sum_{t=1}^T Z_{kt} \hat{\gamma}_{kt} \quad (27)$$

$$\text{var}(\hat{\gamma}_k) = \sum_{t=1}^T Z_{kt}^2 \text{var}(\hat{\gamma}_{kt}) \quad (28)$$

$$Z_{kt} = [\text{var}(\hat{\gamma}_{kt})]^{-1} / \sum_t [\text{var}(\hat{\gamma}_{kt})]^{-1} \quad (29)$$

For some of the results presented in section 4 each $\hat{\gamma}_k$ is assumed to be drawn from a stationary distribution, and the estimates of $\hat{\gamma}_k$ and its variance are

$$\hat{\gamma}_k = \sum_{t=1}^T (\hat{\gamma}_{kt} / T), \quad (30)$$

$$\hat{\sigma}^2(\hat{\gamma}_k) = \left[\sum_{t=1}^T (\hat{\gamma}_{kt} - \hat{\gamma}_k)^2 / T(T-1) \right], \quad k = 0, 1, 2 \quad (31)$$

A useful portfolio interpretation can be given to each of the GLS estimators $\hat{\Gamma}_t$ in (26). Choose any matrix numbers of order $N_t \times N_t$, say W_t^{-1} ,

such that $(X_t' W_t^{-1} X_t)^{-1}$ exists. Construct an estimator, using cross-sectional data in period t , as

$$(X_t' W_t^{-1} X_t)^{-1} X_t' W_t^{-1} R_t \quad (32)$$

This estimator is linear in R_t and unbiased for Γ . This estimator is a linear combination of realized security excess returns in period t . From the fact that

$$(X_t' W_t^{-1} X_t)^{-1} X_t' W_t^{-1} X_t = I, \quad (33)$$

where I is the identity matrix, it follows that the estimator for γ_0 in (32) is the realized excess return on a zero beta portfolio having a dividend yield equal to the riskless rate. Similarly, the estimator for γ_1 is the realized excess return on a hedge portfolio that has a beta of one and dividend yield equal to zero; and that for γ_2 is the realized excess return on a hedge portfolio having a zero beta and a dividend yield equal to unity. This interpretation³ can be given to any estimator of the form (32). When W_t^{-1} (or, equivalently, the portfolio weights discussed above) is chosen so as to minimize the variance of the portfolio return, the resulting estimator is the GLS estimator. This is because portfolio estimates as in (32) are linear and unbiased by construction, and by the Gauss-Markov theorem the GLS estimator is the unique minimum variance estimator among linear unbiased estimators [see Amemiya (1972)].

It is not possible to specify the elements of the variance-covariance matrix V_t a priori. The task of estimating these elements is greatly simplified by assuming that the Sharpe single index model is a correct description of the return generating process. The process that generates returns at the beginning of period t is assumed to be as follows:

$$R_{it} = \alpha_{it} + \beta_{it} R_{mt} + \tilde{\epsilon}_{it} \quad i = 1, 2, \dots, N_t \quad (34)$$

$$\begin{aligned} \text{cov}(\tilde{\epsilon}_{it}, \tilde{\epsilon}_{jt}) &= 0, & i \neq j, \\ &= s_{it}, & i = j, \end{aligned} \quad (35)$$

$$\alpha_{it} = E(R_{it} | R_{mt} = 0).$$

With this specification the element in the i th row and the j th column of V_t , written as $V_t(i, j)$, is given by

$$\begin{aligned} V_t(i, j) &= \beta_{it} \beta_{jt} \sigma_{mm} & i \neq j, \\ &= \beta_{it}^2 \sigma_{mm} + s_{it} & i = j, \end{aligned} \quad i, j = 1, 2, \dots, N_t \quad (36)$$

³For a similar interpretation, see Rosenberg and Marathe (1978).

where

$$\sigma_{mm} \equiv \text{var}(R_{mt}).$$

Under these conditions the GLS estimator of Γ obtained by using data in period t reduces to

$$\hat{\Gamma}_t = (X_t' \Omega_t^{-1} X_t)^{-1} X_t' \Omega_t^{-1} R_t \quad (37)$$

where Ω_t is a diagonal matrix of order $(N_t \times N_t)$, whose element in the i th row and j th column is given by

$$\begin{aligned} \Omega_t(i, j) &= 0, & i \neq j, \\ &= s_{it}, & i = j, \end{aligned} \quad i, j = 1, 2, \dots, N_t \quad (38)$$

In appendix A it is shown that this estimator is the GLS estimator for F . That is, under the assumptions of the single index model, the estimator minimizes the 'residual risk' of three portfolio returns, subject to the constraint that the expected returns on these portfolios are γ_0 , γ_1 and γ_2 respectively. This estimator can be constructed as a heteroscedastic transformation on R_t and X_t . Define the matrix P_t of order $(N_t \times N_t)$ whose elements are given by

$$\begin{aligned} P_t(i, j) &= \phi/s_{it} \equiv \phi/\sqrt{s_{it}}, & i = j \\ &= 0, & i \neq j, \end{aligned} \quad (39)$$

where ϕ is a positive scalar. Then $\hat{\Gamma}_t$ can also be arrived at from the OLS regression on the transformed variables,

$$R_t^* = X_t^* \Gamma + \tilde{\epsilon}_t^* \quad (40)$$

where

$$R_t^* = P_t R_t \quad \text{and} \quad X_t^* = P_t X_t$$

This is equivalent to deflating the variables in the i th rows of R_t and X_t by a factor proportional to the residual standard error s_{it} . Note that Black and Scholes (1974), who used the portfolio approach, assumed in addition to the single index model that the 'residual' risks of all securities were equal; that is, they assumed that $s_{it} = s^2$ for all i . Therefore, the Black-Scholes estimator reduces to OLS on the untransformed variables.

Errors in variables. Since true population β_{it} variables are unobserved,

estimates of this variable, β_{it} are obtained from historical data. The estimated beta is assumed equal to the true beta plus a measurement error \tilde{v}_{it} ,

$$\hat{\beta}_{it} = \beta_{it} + \tilde{v}_{it} \quad (41)$$

The presence of measurement error causes misspecification in OLS and GLS estimators, and the resulting estimates of Γ are biased and inconsistent [see, for example, Johnston (1972), for a discussion of the bias in the coefficients of a variable without error, here dividend yield, see Fisher (1977)]. The estimates $\hat{\beta}_{it}$ are obtained from a regression of \hat{R}_{it} on the return of the market portfolio \hat{R}_{mt} from data prior to period t ,

$$\hat{R}_{it} = \alpha_{it} + \beta_{it} \hat{R}_{mt} + \tilde{e}_{it}, \quad \tau = t-60, t-59, \dots, t-1. \quad (42)$$

Since the single index model is assumed, $\text{cov}(\tilde{e}_{it}, \tilde{e}_{jt}) = 0$ and hence $\text{cov}(\tilde{v}_{it}, \tilde{v}_{jt}) = 0$. If the joint probability distribution between security rates of return and market return is stationary, the variance of the measurement error $\text{var}(\tilde{v}_{it})$ is proportional to the variance of the residual risk term $\text{var}(\tilde{e}_{it})$, for each i . Since month t is not used in this time series regression, $\text{cov}(\tilde{e}_{it}, \tilde{e}_{jt}) = 0$. Note that this time series regression yields a measured beta, $\hat{\beta}_{it}$, its variance $\text{var}(\tilde{v}_{it})$ and the variance of the residual risk term $\text{var}(\tilde{e}_{it}) = s_{it}$.

Consistent with prior empirical studies, the assumption $E(\tilde{e}_{it}) = 0$ has been made. However, it is recognized that if the 'market return' used in (42) is not the true market return, then the estimate of β_{it} may be biased, as has been observed by Sharpe (1977), Mayers (1972) and Roll (1977).

Because of errors in variables, most previous empirical tests have grouped stocks into portfolios. Since errors in measurement in betas for different securities are less than perfectly correlated, grouping risky assets into portfolios would reduce the asymptotic bias in OLS estimators. However, grouping results in a reduction of efficiency caused by the loss of information. The efficiency of the OLS estimator of the coefficient of a single independent variable is proportional to the cross sectional variation in that independent variable (beta). For the two independent variables case (dividend yield and beta), Stehle (1976) has shown that the efficiency of the OLS estimator of the coefficient of a given independent variable, using grouped data, is proportional to the cross-sectional variation in that variable unexplained by the variation in the other independent variable. Since the within group variation in dividend yield unexplained by beta is eliminated, the efficiency of the estimate of the dividend yield coefficient using grouped data is lower than that using all the data.⁴ For this reason the present study

⁴The variance of the OLS estimator of the second independent variable (dividend yield) is equal to the variance of the error term divided by the portion of its variation that is unexplained by the first independent variable (beta). Therefore, unless the independent variables are

does not use the grouping approach to errors in variables. Instead, use is made of the measurement error in beta to arrive at a consistent estimator for Γ .

In constructing the GLS estimator $\hat{\Gamma}_t$ in (37), each variable has been deflated by a factor proportional to the residual standard deviation. The factor of proportionality was an arbitrary positive scalar. The structure of our problem is such that the standard error of measurement in $\hat{\beta}_{it}$, $s_{it} = (\text{var}(\tilde{v}_{it}))^{1/2}$, is proportional to the standard deviation of residual risk, $s_{it} = (\text{var}(\tilde{e}_{it}))^{1/2}$. That is, if the time series regression model satisfies the OLS assumptions,

$$s_{it} = s_{it} / \left(\sum_{\tau=t-60}^{t-1} (\hat{R}_{m\tau} - \bar{R}_m)^2 \right)^{1/2}, \quad (43)$$

where \bar{R}_m is the sample mean of the market return in the prior 60 month period.⁵ Assume that s_{it} is known and let

$$\hat{\phi}_{it} = s_{it} / \beta_{it}, \quad (44)$$

in the definition of P in (39). Thus each variable in the rows of \hat{R}_t and X_t is now deflated by the standard deviation of the measurement error in $\hat{\beta}_{it}$. If $\hat{\beta}_{it}$ is used in place of β_{it} (unobserved), the measurement error in the deflated independent variable, $\hat{\beta}_{it}^* = \hat{\beta}_{it} / s_{it}$ will now have unit variance.

Call the matrix of regressors used X_t^* , which is simply X_t^* with $\hat{\beta}_{it}$ replacing β_{it} . Then

$$X_t^* = X_t^* + \begin{bmatrix} 0 & \tilde{v}_{1t}/s_{1t} & 0 \\ 0 & \tilde{v}_{2t}/s_{2t} & 0 \\ \vdots & \vdots & \vdots \\ 0 & \tilde{v}_{N_t}/s_{N_t} & 0 \end{bmatrix}, \quad (45)$$

where $\text{var}(\tilde{v}_{it}/s_{it}) = 1$. Then the computed overall estimator

uncorrelated sequential grouping procedures as used by Black and Scholes (1974) are inefficient relative to grouping procedures that maximize the between group variation in dividend yield that is unexplained by the between group variation in beta.

⁵In the actual estimation, risk premiums were used. That is, $R_{it} - r_{ft}$ was regressed on $R_{mt} - r_{ft}$ to estimate β_{it} as explained in section 4 below. Thus in the computation in (43), $(R_{mt} - r_{ft})^2$ is used in place of $(R_{mt} - R_m)^2$.

$$\hat{\Gamma} = \sum_{t=1}^T (\hat{\Gamma}_t/T), \quad (46)$$

where

$$\hat{\Gamma}_t = (\hat{X}_t^* \hat{X}_t^*)^{-1} \hat{X}_t^* \hat{R}_t^* \quad (47)$$

is inconsistent. This is because

$$\text{plim}_{N_t} \hat{\Gamma}_t = \left(\Sigma_{X_t^* X_t^*} + \begin{pmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{pmatrix} \right)^{-1} \frac{X_t^* \bar{R}_t}{N_t}, \quad (48)$$

where

$$\Sigma_{X_t^* X_t^*} = \text{plim}_{N_t} \frac{X_t^* X_t^*}{N_t}.$$

This says that each cross sectional estimator is biased even in large samples. Hence the overall estimator, being an arithmetic mean of the cross-sectional estimators, is inconsistent.

Consider the following estimator in each cross sectional month:

$$\hat{\Gamma}_t = \left(\frac{\hat{X}_t^* \hat{X}_t^*}{N_t} - \begin{pmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{pmatrix} \right)^{-1} \frac{\hat{X}_t^* \hat{R}_t^*}{N_t}, \quad (49)$$

Then

$$\text{plim}_{N_t} \hat{\Gamma}_t = \frac{X_t^* \bar{R}_t}{X_t^* X_t^*}, \quad (50)$$

and

$$E\left(\text{plim}_{N_t} \hat{\Gamma}_t\right) = \frac{X_t^* E(R_t^*)}{X_t^* X_t^*} = \Gamma. \quad (51)$$

Thus each cross-sectional estimator is unbiased, in large samples, for Γ .

Note that a portfolio interpretation can also be given to (47). Since

$$\text{plim}_{N_t} \left(\frac{\hat{X}_t^* \hat{X}_t^*}{N_t} - \begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix} \right)^{-1} \frac{\hat{X}_t^* \hat{X}_t^*}{N_t} = I, \quad (52)$$

it follows that the estimator for γ_0 in (47) is the realized excess return on a normal portfolio that has, in probability limit, a zero beta and a dividend yield equal to the riskless rate. Similarly the estimator for γ_1 (or γ_2) is the realized excess return on a hedge portfolio that has, in probability limit, a beta of one (or zero) and a dividend yield equal to zero (or unity).

The overall estimator,

$$\hat{\Gamma} = \sum_{t=1}^T (\hat{\Gamma}_t/T), \quad (53)$$

combines T independent estimates, and is consistent,

$$\text{plim}_{T} \left[\text{plim}_{N_t} \sum_{t=1}^T (\hat{\Gamma}_t/T) \right] = \Gamma. \quad (54)$$

It is shown in appendix B that, if \bar{v}_{it} and \bar{e}_{it} are jointly normal and independent, then $\hat{\Gamma}_t$ is the maximum likelihood estimator (MLE) for Γ , using data in period t .

4. Data and results

Data on security rates of return (R_{it}) were obtained from the monthly return tapes supplied by the Center for Research in Security Prices (CRSP) at the University of Chicago. The same service provides the monthly return on a value weighted index of all the securities on the tape, and this index was used as the market return (R_{mt}) for the time series regressions. From January 1931 until December 1951, the monthly return on high grade commercial paper was used as the return on the riskless asset (r_{ft}); from January 1952 until December 1977 the return on a Treasury Bill (with one month to maturity) was used for r_{ft} . Estimates of each security's beta, β_{it} , and its associated standard error were obtained from regressions of the security excess return on the market excess return for 60 months prior to t .

$$R_{it} - r_{ft} = \alpha_{it} + \beta_{it}(R_{mt} - r_{ft}) + \bar{e}_{it}, \quad \tau = t-60, t-59, \dots, t-1. \quad (55)$$

This was repeated for all securities on the CRSP tapes from $t=1$ (January 1936) to $t=T=504$ (December 1977). January 1936 was chosen as the initial month for (subsequent) cross-sectional regressions because that was when dividends first became taxable.

To conduct the cross-sectional regression, the dividend yield variable (d_{it}) was computed from the CRSP monthly master file. This is

$$d_{it} = 0,$$

if in month t , security i did not go ex-dividend; or if it did, it was a non-recurring dividend not announced prior to month t ;

$$d_{it} = D_{it}/P_{it-1},$$

if in month t , security i went ex-dividend, and the dollar taxable dividend D_{it} per share was announced prior to month t ; and

$$d_{it} = \hat{D}_{it}/P_{it-1},$$

if in month t security i went ex-dividend and this was a recurring dividend not previously announced. Here \hat{D}_{it} was the previous (going back at most 12 months), recurring, taxable dividend per share, adjusted for any changes in the number of shares outstanding in the interim; where P_{it-1} is the closing price in month $t-1$.

This construction assumes that the investor knows at the end of each month whether or not the subsequent month is an ex-dividend month for a recurring dividend. However, the surrogate for the dividend is based only on information that would have been available ex ante to the investor.

The cross-sectional regressions in each month provide a sequence of estimates $\{(\hat{\gamma}_{0t}, \hat{\gamma}_{1t}, \hat{\gamma}_{2t}), t=1, 2, \dots, 504\}$. Three such sequences are available: the first uses OLS, the second uses GLS and the third uses maximum likelihood estimation. The econometric procedures developed in section 3 apply equally well to the single variable regression, excess returns on beta alone. This corresponds to a test of the two factor Capital Asset Pricing Model, as in Black, Jensen and Scholes (1972) and Fama and MacBeth (1973).

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \tilde{u}_{it}, \quad i=1, 2, \dots, N_t, \quad t=1, 2, \dots, 504, \quad (56)$$

where \tilde{u}_{it} is the deviation of R_{it} from its expected value. These cross sectional regressions provide three sequences $\{(\hat{\gamma}_{0t}, \hat{\gamma}_{1t}), t=1, 2, \dots, 504\}$, the first using OLS, the second using GLS and the third using maximum likelihood estimation.

The estimated coefficients were shown to be realized excess rates of return on portfolios (with certain characteristics)⁶ in month t . It is assumed that the excess rates of return on these portfolios are stationary and serially uncorrelated. Under these conditions the most efficient estimators of the

⁶See section 3, and also appendix A.

expected excess return on these portfolios would be the unweighted means of the monthly realized excess returns. The sample variance of the mean is computed as the time series sample variance of the respective portfolio returns divided by the number of months,

$$\hat{\gamma}_k = \sum_{t=1}^{504} \hat{\gamma}_{kt} / 504, \quad k=0, 1, 2, \quad (57)$$

$$\text{var}(\hat{\gamma}_k) = \sum_{t=1}^{504} (\hat{\gamma}_{kt} - \hat{\gamma}_k)^2 / (504 \cdot 503). \quad (58)$$

A similar computation is made for $\hat{\gamma}_0$ and $\hat{\gamma}_1$.

The three sets of estimators of γ_0 , γ_1 and γ_2 (and of $\hat{\gamma}_0$ and $\hat{\gamma}_1$) and their respective t -statistics for the overall period January 1936 to December 1977 are provided in Panel A (Panel B) of table 1.

Table 1

Pooled time series and cross section estimates of the after-tax and the before-tax CAPM: 1936-1977.*

Procedure	Panel A: After-tax model			Panel B: Before-tax model	
	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}_0$	$\hat{\gamma}_1$
OLS	0.00616 (4.37)	0.00268 (1.51)	0.227 (6.33)	0.00681 (4.84)	0.00228 (1.26)
GLS	0.00446 (3.53)	0.00344 (1.87)	0.234 (8.24)	0.00516 (4.09)	0.00302 (1.63)
MLE	0.00363 (2.63)	0.00421 (1.86)	0.236 (8.62)	0.00443 (3.22)	0.00369 (1.62)

*Notes: The after-tax version corresponds to the regression

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (d_{it} - r_{ft}) + \tilde{u}_{it}, \quad i=1, 2, \dots, N_t, \quad t=1, 2, \dots, T.$$

The before-tax version corresponds to the regression

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \tilde{u}_{it}, \quad i=1, 2, \dots, N_t, \quad t=1, 2, \dots, T.$$

Each regression above is performed across securities in a given month. This gives estimates $\{\hat{\gamma}_{0t}, \hat{\gamma}_{1t}, \hat{\gamma}_{2t}, t=1, 2, \dots, T\}$ and $\{\hat{\gamma}_{0t}, \hat{\gamma}_{1t}, t=1, 2, \dots, T\}$. The reported coefficients are arithmetic averages of this time series; for example,

$$\hat{\gamma}_1 = \sum_{t=1}^T \hat{\gamma}_{1t} / T,$$

where $T=504$, t -statistics are in parentheses under each coefficient, and they refer to $H_{j,k}$ where $j=1, 2, 3$.

The OLS and GLS estimators are biased and inconsistent due to measurement error in beta. The maximum likelihood estimators are consistent: consistency is a large sample property and for this study the monthly cross sectional regressions have between 600 and 1200 firms, and there were 504 months.⁷ In Panel A, table 1, the MLE estimator of γ_1 is about 60 percent greater than the corresponding GLS estimator. Consistent with prior studies, the MLE estimator of γ_1 is significantly positive, indicating that investors are risk averse. Also consistent with prior studies, the MLE estimator of γ_0 is significantly positive. In Panel B, tests of the two factor model are presented. Note that in both panels, the GLS procedure results in an increase in the efficiency of the estimator of γ_1 , which is $\hat{\gamma}_1$ ($\hat{\gamma}'_1$) in Panel A (Panel B). Consistent with prior tests of the traditional version of the Capital Asset Pricing Model, the null hypothesis that $\gamma_0 = 0$ is rejected. Consistent with investor risk aversion $\hat{\gamma}'_1$ is significantly positive at the 0.1 level. Explanations for a positive intercept ($\gamma_0 > 0$) include, in addition to margin constraints on borrowing, misspecification of the market portfolio [see Mayers (1972), Sharpe (1977) and Roll (1977)], or beta serving as a surrogate for systematic skewness [see Kraus and Litzenger (1976)].

The coefficient of the excess dividend yield variable, $\hat{\gamma}_2$, (Panel A) is highly significant under all the estimating procedures. The standard errors of the GLS and maximum likelihood estimators of γ_2 are about 25 percent smaller than that of the OLS estimator. The magnitude of the coefficient indicates that for every dollar of taxable return investors require between 23 and 24 cents of additional before tax return.

While the finding of a significant dividend coefficient contrasts with the Black-Scholes (1974) finding of an insignificant dividend effect, the magnitude of the coefficient in table 1 is consistent with their study. The dividend yield (independent) variable they used was $(d_t - d_m)/d_m$, where d_m was the average dividend yield on stocks. Since the coefficient they found was 0.0009, and the average annual yield in their period of study (1936-1966) was 0.048, their estimate of γ_2 can be approximated by $0.0009/(0.048/12)$, or 0.225.

It has been assumed that the variance of the estimator of Γ is constant over time. If, due to the quarterly patterns in the incidence of dividend payments, the variances of the estimators are not constant, the equally weighted estimators in (50) are inefficient relative to an estimator that accounts for any seasonal pattern in the variance. Since dividends are usually paid once every quarter, it is possible to compute three independent estimates of Γ by averaging the coefficients obtained in only the first, only the second and only the third month of each quarter. These three estimates of Γ may be weighted by the inverse of their variances to obtain a more efficient estimator. This is provided in table 2. As can be seen from this table,

⁷Consistency here is with respect to the overall estimator so one takes probability limits with respect to t and with respect to N . See section 3.

the overall estimator for γ_2 is very close to the MLE estimate in table 1. The estimate of the standard error of $\hat{\gamma}_2$ is approximately the same for the first two months, but about 30 percent less for the third month.

Table 2

Pooled time series and cross section estimates of the after-tax CAPM: 1936-1977
(based on quarterly dividend patterns).^a

Month of quarter	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$
First	0.00748 (0.00234)	0.00770 (0.00379)	0.28932 (0.05418)
Second	0.00212 (0.00232)	0.00071 (0.00335)	0.23531 (0.05034)
Third	0.00134 (0.00248)	0.00399 (0.00453)	0.18940 (0.03534)
Overall estimate	0.00373 (0.00137)	0.00383 (0.00219)	0.22335 (0.02552)

^aNotes: The after-tax version corresponds to the regression

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (d_{it} - r_{ft}), \quad i = 1, 2, \dots, N_t$$

This regression is performed across securities in a given month t . Maximum likelihood estimation is used. The reported coefficients are arithmetic averages of the coefficients obtained over time (see note to table 1). The first three rows use the estimates from only the first, only the second and only the third months of each quarter. There are 168 months' estimates in each row. Standard errors are in parentheses under each coefficient. The 'overall estimates' use the estimates in each row above, weighted inversely by their variances.

It may be inappropriate to treat γ_2 as an intertemporal constant: in the absence of income related constraints on borrowing, γ_2 is a weighted average of individuals' marginal tax rates, which may have changed over time. Assume that investors have utility functions that display decreasing absolute risk aversion and non-decreasing relative risk aversion. Assume in addition that the distribution of wealth is independent of individual utility functions. Under these conditions the weight of the marginal tax rates of individuals in the higher tax brackets would be greater than that of individuals in lower tax brackets. Holland (1962) has shown that from 1938 to 1960 there was no pronounced upward trend in the marginal tax rates of individuals with taxable income in excess of \$25,000. To examine empirically whether there is evidence of an upward trend in γ_2 over time, the maximum likelihood results are presented for six subperiods in table 3. The estimators of γ_2 for the subperiods were consistently positive and, except for the 1/1955 to 12/1961 period, significantly different from zero. There does not appear to be a trend to the estimate.

Table 3

Pooled time series and cross section estimates of the after-tax CAPM (for 6 subperiods).^a

Period	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$
1/36-12/40	-0.00287 (-0.52)	0.00728 (0.65)	0.335 (2.64)
1/41-42/47	0.00454 (1.44)	0.00703 (1.59)	0.408 (7.35)
1/48-12/54	0.00528 (2.77)	0.00617 (1.45)	0.158 (4.37)
1/55-12/61	0.01355 (5.62)	-0.00316 (-0.78)	0.018 (0.32)
1/62-12/68	-0.00164 (-0.47)	0.01063 (1.95)	0.171 (2.33)
1/69-12/77	0.00166 (0.47)	-0.00045 (-0.09)	0.329 (6.00)

^aNotes: The after-tax version corresponds to the regression

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (d_{it} - r_{ft}) + \tilde{\epsilon}_{it} \quad i = 1, 2, \dots, N_t \quad t = 1, 2, \dots, T$$

Maximum likelihood estimation is used for the cross sectional regression. The reported coefficients are arithmetic averages of the coefficients estimated in the months in the period (see note to table 1). *t*-statistics are in parentheses under each coefficient.

It is possible that the positive coefficient on dividend yield is not a tax effect and that in non-ex-dividend months the effect completely reverses itself. If dividends are paid quarterly there would be twice as many non-ex-dividend months as ex-dividend months. Thus, a complete reversal would require a negative effect on returns in each non-ex-dividend month that is half the absolute size of the effect in an ex-dividend month. It is also possible that a stock's dividend yield is a proxy for the covariance of its return with classes of assets not included in the value weighted index of NYSE stocks used to calculate betas in the present study. If the coefficient on dividend yield is entirely due to the effects of omitted assets, the effect in non-ex-dividend months should be positive and the same size as the effect in ex-dividend months.

In order to test whether there is a reversal effect or a re-inforcing effect in non-ex-dividend months the following cross-sectional regression was estimated:

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (\delta_{it} d_{it}^0 - r_{ft}) + \gamma_3 [(1 - \delta_{it}) d_{it}^0] + \tilde{\epsilon}_{it} \quad i = 1, 2, \dots, N_t \quad (59)$$

where

$$d_{it}^0 = D_{it} / P_{it-1}$$

if a dividend was announced prior to month *t*, to go ex-dividend in month *t*;

$$d_{it}^0 = \hat{D}_{it} / P_{it-1}$$

otherwise; and

$$\delta_{it} = 1,$$

if month *t* was an ex-dividend month for a recurring dividend;

$$\delta_{it} = 0,$$

otherwise.

The variable $(1 - \delta_{it}) d_{it}^0$ is intended to pick up the effect of a dividend payment in subsequent, non-ex-dividend months. The variable $\delta_{it} d_{it}^0$ is identical to d_{it} , the variable used earlier. If dividends are paid quarterly, and γ_3 is negative and has an absolute value half the size of γ_2 , then one can conclude that there is a complete reversal over the course of the quarter so that there is no net tax effect. On the other hand, if there is no reversal, γ_3 should not be significantly negative.

The MLE estimates of the coefficients in (52) are presented in table 4. The estimated value of $\hat{\gamma}_3$ is positive and significantly different from zero: this rejects the hypothesis that there is complete reversal.

The significant positive γ_3 is evidence of a re-inforcing effect in non-ex-dividend months. If the coefficient on dividend yield is entirely attributable

Table 4

Pooled time series and cross section test of the reversal effect of dividend yield: 1936-1977.^a

$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}_3$
0.00184 (1.29)	0.00493 (2.17)	0.32784 (7.31)	0.10321 (2.87)

^aNotes: The regression performed in each month is

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (\delta_{it} d_{it}^0 - r_{ft}) + \gamma_3 [(1 - \delta_{it}) d_{it}^0] + \tilde{\epsilon}_{it} \quad i = 1, 2, \dots, N_t \quad t = 1, 2, \dots, T$$

Maximum likelihood estimation is used for the cross-sectional regression. The reported coefficients are arithmetic averages of the coefficients in each month (see note to table 1). *t*-statistics are in parentheses under each coefficient.

to the effect of omitted assets γ_3 should be the same order of magnitude as γ_2 . If the effect in ex-dividend months exceeds the combined effect in the subsequent two non-ex-dividend months γ_2 should be more than twice as large as γ_3 . $\hat{\gamma}_2 - 2\hat{\gamma}_3$ is 0.1214 and has a *t*-value of 2.79. Thus, the effect in an ex-dividend month is more than twice the size of the effect in a non-ex-dividend month. This evidence suggests that the coefficient on dividend yield in ex-dividend months is not solely attributable to the effects of missing assets and that the effect in an ex-dividend month exceeds the combined effect in the subsequent two non-ex-dividend months. If the effect in non-ex-dividend months is asserted to be entirely due to the effect of missing assets, the difference $\hat{\gamma}_2 - \hat{\gamma}_3 = 0.225$ is an estimate of the tax effect. However, further theoretical work on the combined effects of transaction costs and personal taxes in a multi-period valuation framework is required to be able to understand the cause of a significant yield effect in non-ex-dividend months. For the present it seems reasonable to conclude that 0.225 is a lower bound estimate of the tax effect.⁸

The empirical evidence presented by Elton and Gruber (1970) on the ex-dividend behavior of common stocks suggests that the coefficient on the excess dividend yield term may be a decreasing function of yield. The theoretical rationale for this effect is that investors in low (high) tax brackets invest in high (low) dividend yield stocks: a possible explanation is that institutional restrictions on short sales results in a segmentation of security holdings according to investors' tax brackets. To provide a simple test of this 'clienteles' effect, the coefficient *c* in (22) is hypothesized to be a linear decreasing function of the *i*th security's dividend yield. That is *c*, which is now dependent on *i*, is written *c_i* and given by

$$c_i = k - hd_i \tag{60}$$

where *k*, *h* > 0, and the hypothesized relationship is

$$E(R_i) - r_f = a + b\beta_i + (k - hd_i)(d_i - r_f) \tag{61}$$

The econometric model is

⁸It might be argued that the persistent dividend effect is due to the fact that the dividend variable used incorporates knowledge of the ex-dividend month, which the investor may not have. To test whether this introduces spurious correlations between yields and returns the variable ($d_{i,t-3}$) was used in the cross-sectional regression (23). The variable does not incorporate knowledge of the ex-dividend month except when it was announced. It is divided by 3 so as to distribute the yield over the three months of every quarter. The overall estimate (1936-1977) of γ_2 is 0.39, with a *t*-value of 3.57; one cannot attribute the earlier results due to knowledge of ex-dividend months. This is consistent with the Rosenberg and Marathe (1978) study. Note that this estimate is lower than the total effect in table 4, which is $\hat{\gamma}_2 + 2\hat{\gamma}_3 = 0.52$. The lower estimate is attributable to constraining the coefficient on yield to be the same in non-ex-dividend months and ex-dividend months.

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1\beta_{it} + \gamma_2(d_{it} - r_{ft}) + \gamma_4d_{it}(d_{it} - r_{ft}) + \bar{\epsilon}_{it} \quad i=1, 2, \dots, N_t \tag{62}$$

where the estimate of *k* is γ_2 and that for $-h$ is γ_4 . The maximum likelihood approach is used in each cross sectional regression, and the pooled estimates presented in table 5.

Table 5
Pooled time series and cross section test of the clientele effect: 1936-1977.*

$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}_4$
0.00365 (2.65)	0.00425 (1.88)	0.336 (6.60)	-6.92 (-1.70)

*Notes: This corresponds to the following cross-sectional regression in each month:

$$R_{it} - r_{ft} = \gamma_0 + \gamma_1\beta_{it} + \gamma_2(d_{it} - r_{ft}) + \gamma_4d_{it}(d_{it} - r_{ft}) + \bar{\epsilon}_{it} \quad i=1, 2, \dots, N_t$$

$$t=1, 2, \dots, T$$

Maximum likelihood estimation is used for the cross-sectional regression. The reported coefficients are arithmetic averages of the coefficients in each month (see note in table 1). *t*-statistics are in parentheses under each coefficient.

Consistent with the existence of a clientele effect, the maximum likelihood estimate of γ_2 is significantly positive and that of γ_4 is significantly negative, both at the 0.05 level. The magnitude of $\hat{\gamma}_4$ suggests that for every percentage point in yield the implied tax rate for ex-dividend months declines by 0.069. For example, if the annual yield was 4 percent, the implied tax rate would be approximately $0.336 - 6.92(0.04/4) = 0.268$, assuming quarterly payments. The empirical evidence supporting a clientele effect suggests the need for further research that rigorously derives an equilibrium model that incorporates institutional restrictions on short sales, along with personal taxes.

5. Conclusion

In this paper, an after-tax version of the Capital Asset Pricing Model is derived. The model extends the Brennan after-tax version of the CAPM to incorporate wealth and income related constraints on borrowing along with a progressive tax scheme. The wealth related constraint on borrowing causes the expected return on a zero-beta portfolio (having a dividend yield equal to the riskless rate) to exceed the riskless rate of interest. The income related constraint tends to offset the effect that personal taxes have on the

equilibrium structure of share prices. The equilibrium relationship indicates that the before tax expected return on a security is linearly related to its systematic risk and to its dividend yield. Unrestricted supply adjustments in corporate dividends would result in the before tax version of the CAPM, in a world where dividends and interest are taxed as ordinary income. If income related constraints are non-binding and/or corporate supply adjustments are restricted, the before tax return on a security would be an increasing linear function of its dividend yield.

Unlike prior tests of the CAPM that used grouping or instrumental variables to correct for measurement error in beta, this paper uses the sample estimate of the variance of observed betas to arrive at maximum likelihood estimates of the coefficients in the relations tested. Unlike prior studies of the effect of dividend yields on asset prices, which used average monthly yields as a surrogate for the expected yield in both ex-dividend and non-ex-dividend months, the expected dividend yield based on prior information is used for ex-dividend months and is set to zero for other months.

The results indicate that there is a strong positive relationship between before tax expected returns and dividend yields of common stocks. The coefficient of the dividend yield variable was positive, less than unity, and significantly different from zero. The data indicates that for every dollar increase in return in the form of dividends, investors require an additional 23 cents in before tax return. There was no noticeable trend in the coefficient over time. A test was constructed to determine whether the effect of dividend yield reverses itself in non-ex-dividend months, and this hypothesis was rejected. Indeed, the data indicates that the effect of a dividend payment on before tax expected returns is positive in both the ex-dividend month and in the subsequent non-ex-dividend months. However, the combined effect in the subsequent non-ex-dividend months is significantly less than the effect in the ex-dividend month.

Evidence is also presented for a clientele effect: that is, that stockholders in higher tax brackets choose stocks with low yields, and vice versa. Further work is needed to derive a model that implies the existence of such clienteles and to test its implications.

Appendix A

In this appendix it is shown that the estimator for Γ , given by

$$\Gamma_t = (X_t' \Omega_t^{-1} X_t)^{-1} X_t' \Omega_t^{-1} R_t$$

using data in period t , is the Generalized Least Squares (GLS) estimator for Γ under the assumption of the single index model. It was shown in section 3 of the paper that each estimated coefficient corresponds to the realized excess

return of a specific portfolio. Suppose portfolio weights $\{h_{it}, i=1, 2, \dots, N_t\}$ are chosen in each period, for investment in assets $i=1, 2, \dots, N_t$. Using eq. (23) from the text the excess return on such a portfolio is given by

$$\sum_i h_{it} (R_{it} - r_{ft}) = \gamma_0 \left(\sum_i h_{it} \right) + \gamma_1 \left(\sum_i h_{it} \beta_{it} \right) + \gamma_2 \left[\sum_i h_{it} (d_{it} - r_{ft}) \right] + \sum_i h_{it} \epsilon_{it}$$

The expected excess return on this portfolio is

$$\begin{aligned} \gamma_0 & \text{ if } \sum_i h_{it} = 1, \quad \sum_i h_{it} \beta_{it} = 0, \quad \sum_i h_{it} (d_{it} - r_{ft}) = 0, \\ \gamma_1 & \text{ if } \sum_i h_{it} = 0, \quad \sum_i h_{it} \beta_{it} = 1, \quad \sum_i h_{it} (d_{it} - r_{ft}) = 0, \\ \gamma_2 & \text{ if } \sum_i h_{it} = 0, \quad \sum_i h_{it} \beta_{it} = 0, \quad \sum_i h_{it} (d_{it} - r_{ft}) = 1. \end{aligned}$$

Under the assumption of the single index model, the variance of the return on such a portfolio is, from eq. (36) in the text,

$$\text{var} \left(\sum_i h_{it} (R_{it} - r_{ft}) \right) = \left(\sum_i h_{it} \beta_{it} \right)^2 \sigma_{m^2} + \sum_i h_{it}^2 s_{it}$$

Suppose one wishes to minimize the variance of the excess return on such a portfolio subject to the condition that the expected excess return on the portfolio is, in turn, γ_0 , γ_1 or γ_2 . This condition enforces $\sum_i h_{it} \beta_{it}$ to be either zero or unity. Hence minimizing

$$\left(\sum_i h_{it} \beta_{it} \right)^2 \sigma_{m^2} + \sum_i h_{it}^2 s_{it}$$

subject to the unbiasedness condition, is equivalent to minimizing

$$\sum_i h_{it}^2 s_{it}$$

the 'residual risk' of the portfolio subject to the unbiasedness condition. Thus, one is using the residual risk of the portfolio as the minimand and enforcing the unbiasedness condition. By construction, Ω_t is the diagonal matrix of the residual variances s_{it} , and by construction, Γ_t is linear and unbiased for Γ . The variance of the estimator has been minimized under the

single index model. But by the Gauss-Markov theorem, the GLS estimator [using the full matrix V_t in (36) as the variance-covariance matrix] is the unique minimum variance estimator among linear and unbiased estimators. Hence $\hat{\Gamma}_t$ is the GLS estimator for Γ , under the assumption of the single index model.

Appendix B

In this section, it is shown that under certain conditions, $\hat{\Gamma}_t$ in (49) is the maximum likelihood estimator for Γ in period t .

First, note that there are no errors in the measurement of β , then if security returns are multivariate normal, then the GLS estimator in (37) is also the maximum likelihood estimator [see Johnston (1972)].

Suppose now there are errors in the measurement of β . Then one can use the transformation P defined in (39), with $\phi = s_u/s_p$, to write the model as

$$R_u^* = \gamma_0 p_u^* + \gamma_1 \beta_u^* + \gamma_2 d_u^* + \tilde{e}_u^* \tag{B.1}$$

and the observed beta as

$$\hat{\beta}_u^* = \beta_u^* + \tilde{e}_u^* \tag{B.2}$$

where

$$R_u^* = (R_u - r_{ft})/s_u, \quad p_u^* = 1/s_u, \quad \beta_u^* = \beta_u/s_u, \\ \hat{\beta}_u^* = \hat{\beta}_u/s_u, \quad d_u^* = (d_u - r_{ft})/s_u, \quad \tilde{e}_u^* = \tilde{e}_u/s_u$$

and

$$\tilde{e}_u^* = \tilde{e}_u/s_u$$

Define the variable

$$m_{xy} = \sum_{i=1}^{N_t} x_i y_i / N_t \tag{B.3}$$

as the raw co-moment for a given sequence $\{(x_i, y_i), i=1, 2, \dots, N_t\}$. Then from (B.1) and (B.2),

$$m_{R^* p^*} = \gamma_0 m_{p^* p^*} + \gamma_1 m_{\beta^* p^*} + \gamma_2 m_{d^* p^*} + m_{\tilde{e}^* p^*} \tag{B.4}$$

$$m_{R^* \hat{\beta}^*} = \gamma_0 [m_{p^* p^*} + m_{\tilde{e}^* p^*}] + \gamma_1 [m_{\beta^* p^*} + m_{\tilde{e}^* p^*}] \\ + \gamma_2 [m_{d^* p^*} + m_{\tilde{e}^* p^*}] + m_{\beta^* p^*} + m_{\tilde{e}^* p^*} \tag{B.5}$$

$$m_{R^* d^*} = \gamma_0 m_{p^* d^*} + \gamma_1 m_{\beta^* d^*} + \gamma_2 m_{d^* d^*} + m_{\tilde{e}^* d^*} \tag{B.6}$$

$$m_{R^* \hat{\beta}^*} = m_{R^* p^*} + m_{\tilde{e}^* p^*} \tag{B.7}$$

$$m_{R^* \hat{\beta}^*} = m_{R^* p^*} + 2m_{\tilde{e}^* p^*} + m_{\tilde{e}^* \tilde{e}^*} \tag{B.8}$$

$$m_{d^* \hat{\beta}^*} = m_{d^* p^*} + m_{\tilde{e}^* p^*} \tag{B.9}$$

In these six equations, take expectations and use the fact that

$$E(\tilde{v}_u^*) = E(\tilde{e}_u^*) = 0,$$

$$E(\tilde{v}_u^* \tilde{e}_u^*) = 0, \tag{B.10}$$

$$E(\tilde{v}_u^* \tilde{v}_u^*) = E[\tilde{v}_u^2 / s_u^2] = 1.$$

The left-hand side of each of (B.4) through (B.9), after taking expectations, corresponds to the population co-moments of the subscripted variables.

If \tilde{v}_u and \tilde{e}_u are independently normally distributed, then the corresponding sample moment is a maximum likelihood estimator of the population parameter. Replace these expected values by their maximum likelihood estimates. There are now six equations for the six unknown parameters $\gamma_0, \gamma_1, \gamma_2, m_{p^* p^*}, m_{\beta^* p^*}$, and $m_{p^* \tilde{e}^*}$. They can be solved for the coefficients of interest from the following 'normal' equations, which are in terms of observed sample estimates.

$$m_{R^* p^*} = \gamma_0 m_{p^* p^*} + \gamma_1 m_{\beta^* p^*} + \gamma_2 m_{d^* p^*} \tag{B.11}$$

$$m_{R^* \hat{\beta}^*} = \gamma_0 m_{p^* \hat{\beta}^*} + \gamma_1 (m_{\beta^* \hat{\beta}^*} - 1) + \gamma_2 m_{d^* \hat{\beta}^*} \tag{B.12}$$

$$m_{d^* \hat{\beta}^*} = \gamma_0 m_{p^* \hat{\beta}^*} + \gamma_1 m_{\beta^* \hat{\beta}^*} + \gamma_2 m_{d^* \hat{\beta}^*} \tag{B.13}$$

and are themselves maximum likelihood [see Mood et al. (1974, p. 285)].

The solution to this set gives estimates $\hat{\gamma}_k, k=0, 1, 2$, which are embodied in (49). They are functions of maximum likelihood estimates. Note that in addition to (B.4) through (B.9), one could write an equation for $m_{R^* R^*}$.

$$m_{R^* R^*} = \gamma_0^2 m_{p^* p^*} + \gamma_1^2 m_{\beta^* p^*} + \gamma_2^2 m_{d^* p^*} + 2\gamma_0 \gamma_1 m_{p^* \beta^*} \\ + 2\gamma_0 \gamma_2 m_{p^* d^*} + 2\gamma_1 \gamma_2 m_{\beta^* d^*} + 2\gamma_0 m_{p^* \tilde{e}^*} + 2\gamma_1 m_{\beta^* \tilde{e}^*} \\ + 2\gamma_2 m_{d^* \tilde{e}^*} + m_{\tilde{e}^* \tilde{e}^*} \tag{B.14}$$

If we take expectations, using (B.10) and the fact that

$$E(m_{i,t}) = E\left(\sum_{i=1}^{N_t} \frac{\tilde{\epsilon}_{it}^2}{\sigma_i^2 N_t}\right) \\ = \frac{1}{N_t} \sum_{i=1}^{N_t} \frac{E(\tilde{\epsilon}_{it}^2)}{\sigma_i^2} = \frac{1}{N_t} \cdot N_t \phi^2 = \phi^2,$$

we have

$$E(m_{R^*}) = \gamma_0^2 m_{p^*} + \gamma_1^2 m_{p^*} + \gamma_2^2 m_{p^*} + 2\gamma_0\gamma_1 m_{p^*} \\ + 2\gamma_0\gamma_2 m_{p^*} + 2\gamma_1\gamma_2 m_{p^*} + \phi^2, \quad (B.15)$$

where ϕ^2 is assumed known.

By writing down the likelihood function and maximizing it for an analogous case, Johnston (1963) demonstrates a maximum likelihood estimator over the parameter space $(\gamma_0, \gamma_1, \gamma_2, \beta_i \text{ for } i=1, 2, \dots, N, \phi)$. This has the undesirable characteristic that the parameter space grows with the sample size.⁹ It turns out in our problem that ϕ is assumed known. If this ϕ satisfies (B.15), when in (B.15) we use the sample co-moment estimates for the population parameters, then Johnston's M.L. procedure coincides with the solution to (B.11) through (B.13). Whereas our estimators are linear in the returns and can be interpreted as portfolios, the expanded parameter space estimator in Johnston is non-linear and has no such analog to theory. Thus conditional on ϕ^2 coinciding with the residual variation in the sample, using our estimates, the estimator in (49) is a maximum likelihood estimator over the parameter space $(\gamma_0, \gamma_1, \gamma_2)$.

⁹See Kendall and Stuart (1973, especially pp. 62 and 402).

References

- Amemiyu, T., 1972, Theory of econometrics: Lecture notes, Unpublished manuscript (Department of Economics, Stanford University, Stanford, CA).
- Bailey, M.J., 1969, Capital gains and income taxation, in: A.C. Harberger and M.J. Bailey, The taxation of income from capital (Brookings Institution, Washington, DC) 11-49.
- Black, F., 1972, Capital market equilibrium with restricted borrowing, *Journal of Business* 45, 444-454.
- Black, F., M. Jensen and M. Scholes, 1972, The capital asset pricing model: Some empirical tests, in: M. Jensen, ed., *Studies in the theory of capital markets* (Praeger, New York) 79-121.
- Black, F. and M. Scholes, 1974, The effects of dividend yield and dividend policy on common stock prices and returns, *Journal of Financial Economics* 1, 1-22.
- Blume, M. and I. Friend, 1973, A new look at the capital asset pricing model, *Journal of Finance* 28, 19-33.
- Brennan, M.J., 1973, Taxes, market valuation and corporate financial policy, *National Tax Journal* 23, 417-427.
- Brennan, M.J., 1970, Investor taxes, market equilibrium and corporation finance, Unpublished Ph.D. Dissertation (Massachusetts Institute of Technology, Cambridge, MA).

- Cottle, S., D.L. Dodd and B. Graham, 1962, *Security analysis: Principles and techniques* (McGraw-Hill, New York).
- Elton, E. and Gruber, 1970, Marginal stockholder tax rates and the clientele effect, *Review of Economics and Statistics* 52, 68-74.
- Fama, E.F. and J.D. MacBeth, 1973, Risk, return and equilibrium: Empirical tests, *Journal of Political Economy* 71, 607-636.
- Fama, E.F. and M.H. Miller, 1972, *The theory of finance* (Holt, Rinehart and Winston, New York).
- Fisher, F.M., 1977, The effect of simple specification error on the coefficients of 'unaffected' variables, Working Paper no. 194 (Department of Economics, Massachusetts Institute of Technology, Cambridge, MA).
- Friend, I. and M. Blume, 1970, Measurement of portfolio performance under uncertainty, *American Economic Review*, 561-575.
- Gonzalez-Gaverra, N.G., 1973, Inflation and capital asset market prices: Theory and tests, Unpublished Ph.D. Dissertation (Graduate School of Business, Stanford University, Stanford, CA).
- Gordon, M.J., 1963, Optimal investment and financing policy, *Journal of Finance* 18, 264-272.
- Hoffand, D.M., 1962, Dividends under the income tax (NBER, Princeton, NJ).
- Johnston, J., 1963, *Econometric methods* (McGraw-Hill, New York).
- Johnston, J., 1972, *Econometric methods* (McGraw-Hill, New York).
- Kendall, M.G. and A. Stuart, 1973, *The advanced theory of statistics* (Hafner, New York).
- Kraus, A. and R.H. Litzenger, 1976, Skewness preference and the valuation of risk assets, *Journal of Finance* 31, 1085-1100.
- Lintner, J., 1965, The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets, *Review of Economics and Statistics* 47, 13-37.
- Litzenger, R.H. and J.C. Van Horne, 1978, Elimination of the double taxation of dividends and corporate financial policy, *Journal of Finance* 34, 737-749.
- Long, J., 1975, Efficient portfolio choice with differential taxation of dividends and capital gains, *Journal of Financial Economics* 5, 25-53.
- Mayers, D., 1972, Non-market assets and capital market equilibrium under uncertainty, in: M.C. Jensen, ed., *Studies in the theory of capital markets* (Praeger, New York).
- Miller, M. and M. Modigliani, 1961, Dividend policy growth, and the valuation of shares, *Journal of Business* 4, 411-433.
- Miller, M. and M. Scholes, 1972, Rates of return in relation to risk: A re-examination of some recent findings, in: M. Jensen, ed., *Studies in the theory of capital markets* (Praeger, New York).
- Miller, M. and M. Scholes, 1977, Dividends and taxes, Working Paper no. 8 (University of Chicago, Chicago, IL).
- Mood, A., F.S. Graybill and D.C. Boes, 1974, *Introduction to the theory of statistics* (McGraw-Hill, New York).
- Roll, R., 1977, A critique of the asset pricing theory's tests, *Journal of Financial Economics* 4, 129-176.
- Rosenberg, B. and V. Marathe, 1978, Test of capital asset pricing hypotheses, *Journal of Financial Research*, forthcoming.
- Rubinstein, M., 1973, A comparative statics analysis of risk premiums, *Journal of Business* 46.
- Sharpe, W.F., 1964, Capital asset prices: A theory of market equilibrium under conditions of risk, *Journal of Finance* 19, 425-442.
- Sharpe, W.F., 1977, The capital asset pricing model: A multi-beta interpretation, in: H. Levy and M. Sarnat, eds., *Financial decision making under uncertainty* (Academic Press, New York).
- Stehle, R.D., 1976, The valuation of risk assets in an international capital market: Theory and tests, Unpublished Ph.D. Dissertation (Graduate School of Business, Stanford, CA).
- Vasicek, O., 1971, Capital market equilibrium with no riskless borrowing, Wells Fargo Bank Memorandum (San Francisco, CA).

The Cross-Section of Expected Stock Returns

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ABSTRACT

Two easily measured variables, size and book-to-market equity, combine to capture the cross-sectional variation in average stock returns associated with market β , size, leverage, book-to-market equity, and earnings-price ratios. Moreover, when the tests allow for variation in β that is unrelated to size, the relation between market β and average return is flat, even when β is the only explanatory variable.

THE ASSET-PRICING MODEL OF Sharpe (1964), Lintner (1965), and Black (1972) has long shaped the way academics and practitioners think about average returns and risk. The central prediction of the model is that the market portfolio of invested wealth is mean-variance efficient in the sense of Markowitz (1959). The efficiency of the market portfolio implies that (a) expected returns on securities are a positive linear function of their market β s (the slope in the regression of a security's return on the market's return), and (b) market β s suffice to describe the cross-section of expected returns.

There are several empirical contradictions of the Sharpe-Lintner-Black (SLB) model. The most prominent is the size effect of Banz (1981). He finds that market equity, ME (a stock's price times shares outstanding), adds to the explanation of the cross-section of average returns provided by market β s. Average returns on small (low ME) stocks are too high given their β estimates, and average returns on large stocks are too low.

Another contradiction of the SLB model is the positive relation between leverage and average return documented by Bhandari (1988). It is plausible that leverage is associated with risk and expected return, but in the SLB model, leverage risk should be captured by market β . Bhandari finds, however, that leverage helps explain the cross-section of average stock returns in tests that include size (ME) as well as β .

Stattman (1980) and Rosenberg, Reid, and Lanstein (1985) find that average returns on U.S. stocks are positively related to the ratio of a firm's book value of common equity, BE, to its market value, ME. Chan, Hamao, and Lakonishok (1991) find that book-to-market equity, BE/ME, also has a strong role in explaining the cross-section of average returns on Japanese stocks.

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Finally, Basu (1983) shows that earnings-price ratios (E/P) help explain the cross-section of average returns on U.S. stocks in tests that also include size and market β . Ball (1978) argues that E/P is a catch-all proxy for unnamed factors in expected returns; E/P is likely to be higher (prices are lower relative to earnings) for stocks with higher risks and expected returns, whatever the unnamed sources of risk.

Ball's proxy argument for E/P might also apply to size (ME), leverage, and book-to-market equity. All these variables can be regarded as different ways to scale stock prices, to extract the information in prices about risk and expected returns (Keim (1988)). Moreover, since E/P, ME, leverage, and BE/ME are all scaled versions of price, it is reasonable to expect that some of them are redundant for describing average returns. Our goal is to evaluate the joint roles of market β , size, E/P, leverage, and book-to-market equity in the cross-section of average returns on NYSE, AMEX, and NASDAQ stocks.

Black, Jensen, and Scholes (1972) and Fama and MacBeth (1973) find that, as predicted by the SLB model, there is a positive simple relation between average stock returns and β during the pre-1969 period. Like Reinganum (1981) and Lakonishok and Shapiro (1986), we find that the relation between β and average return disappears during the more recent 1963-1990 period, even when β is used alone to explain average returns. The appendix shows that the simple relation between β and average return is also weak in the 50-year 1941-1990 period. In short, our tests do not support the most basic prediction of the SLB model, that average stock returns are positively related to market β s.

Unlike the simple relation between β and average return, the univariate relations between average return and size, leverage, E/P, and book-to-market equity are strong. In multivariate tests, the negative relation between size and average return is robust to the inclusion of other variables. The positive relation between book-to-market equity and average return also persists in competition with other variables. Moreover, although the size effect has attracted more attention, book-to-market equity has a consistently stronger role in average returns. Our bottom-line results are: (a) β does not seem to help explain the cross-section of average stock returns, and (b) the combination of size and book-to-market equity seems to absorb the roles of leverage and E/P in average stock returns, at least during our 1963-1990 sample period.

If assets are priced rationally, our results suggest that stock risks are multidimensional. One dimension of risk is proxied by size, ME. Another dimension of risk is proxied by BE/ME, the ratio of the book value of common equity to its market value.

It is possible that the risk captured by BE/ME is the relative distress factor of Chan and Chen (1991). They postulate that the earning prospects of firms are associated with a risk factor in returns. Firms that the market judges to have poor prospects, signaled here by low stock prices and high ratios of book-to-market equity, have higher expected stock returns (they are penalized with higher costs of capital) than firms with strong prospects. It is

also possible, however, that BE/ME just captures the unraveling (regression toward the mean) of irrational market whims about the prospects of firms.

Whatever the underlying economic causes, our main result is straightforward. Two easily measured variables, size (ME) and book-to-market equity (BE/ME), provide a simple and powerful characterization of the cross-section of average stock returns for the 1963–1990 period.

In the next section we discuss the data and our approach to estimating β . Section II examines the relations between average return and β and between average return and size. Section III examines the roles of E/P, leverage, and book-to-market equity in average returns. In sections IV and V, we summarize, interpret, and discuss applications of the results.

I. Preliminaries

A. Data

We use all nonfinancial firms in the intersection of (a) the NYSE, AMEX, and NASDAQ return files from the Center for Research in Security Prices (CRSP) and (b) the merged COMPUSTAT annual industrial files of income-statement and balance-sheet data, also maintained by CRSP. We exclude financial firms because the high leverage that is normal for these firms probably does not have the same meaning as for nonfinancial firms, where high leverage more likely indicates distress. The CRSP returns cover NYSE and AMEX stocks until 1973 when NASDAQ returns also come on line. The COMPUSTAT data are for 1962–1989. The 1962 start date reflects the fact that book value of common equity (COMPUSTAT item 60), is not generally available prior to 1962. More important, COMPUSTAT data for earlier years have a serious selection bias; the pre-1962 data are tilted toward big historically successful firms.

To ensure that the accounting variables are known before the returns they are used to explain, we match the accounting data for all fiscal yearends in calendar year $t - 1$ (1962–1989) with the returns for July of year t to June of $t + 1$. The 6-month (minimum) gap between fiscal yearend and the return tests is conservative. Earlier work (e.g., Basu (1983)) often assumes that accounting data are available within three months of fiscal yearends. Firms are indeed required to file their 10-K reports with the SEC within 90 days of their fiscal yearends, but on average 19.8% do not comply. In addition, more than 40% of the December fiscal yearend firms that do comply with the 90-day rule file on March 31, and their reports are not made public until April. (See Alford, Jones, and Zmijewski (1992).)

We use a firm's market equity at the end of December of year $t - 1$ to compute its book-to-market, leverage, and earnings-price ratios for $t - 1$, and we use its market equity for June of year t to measure its size. Thus, to be included in the return tests for July of year t , a firm must have a CRSP stock price for December of year $t - 1$ and June of year t . It must also have monthly returns for at least 24 of the 60 months preceding July of year t (for

“pre-ranking” β estimates, discussed below). And the firm must have COMPUSTAT data on total book assets (A), book equity (BE), and earnings (E), for its fiscal year ending in (any month of) calendar year $t - 1$.

Our use of December market equity in the E/P, BE/ME, and leverage ratios is objectionable for firms that do not have December fiscal yearends because the accounting variable in the numerator of a ratio is not aligned with the market value in the denominator. Using ME at fiscal yearends is also problematic; then part of the cross-sectional variation of a ratio for a given year is due to market-wide variation in the ratio during the year. For example, if there is a general fall in stock prices during the year, ratios measured early in the year will tend to be lower than ratios measured later. We can report, however, that the use of fiscal-yearend MEs, rather than December MEs, in the accounting ratios has little impact on our return tests.

Finally, the tests mix firms with different fiscal yearends. Since we match accounting data for all fiscal yearends in calendar year $t - 1$ with returns for July of t to June of $t + 1$, the gap between the accounting data and the matching returns varies across firms. We have done the tests using the smaller sample of firms with December fiscal yearends with similar results.

B. Estimating Market β s

Our asset-pricing tests use the cross-sectional regression approach of Fama and MacBeth (1973). Each month the cross-section of returns on stocks is regressed on variables hypothesized to explain expected returns. The time-series means of the monthly regression slopes then provide standard tests of whether different explanatory variables are on average priced.

Since size, E/P, leverage, and BE/ME are measured precisely for individual stocks, there is no reason to smear the information in these variables by using portfolios in the Fama-MacBeth (FM) regressions. Most previous tests use portfolios because estimates of market β s are more precise for portfolios. Our approach is to estimate β s for portfolios and then assign a portfolio's β to each stock in the portfolio. This allows us to use individual stocks in the FM asset-pricing tests.

B.1. β Estimation: Details

In June of each year, all NYSE stocks on CRSP are sorted by size (ME) to determine the NYSE decile breakpoints for ME. NYSE, AMEX, and NASDAQ stocks that have the required CRSP-COMPUSTAT data are then allocated to 10 size portfolios based on the NYSE breakpoints. (If we used stocks from all three exchanges to determine the ME breakpoints, most portfolios would include only small stocks after 1973, when NASDAQ stocks are added to the sample.)

We form portfolios on size because of the evidence of Chan and Chen (1988) and others that size produces a wide spread of average returns and β s. Chan and Chen use only size portfolios. The problem this creates is that size and the β s of size portfolios are highly correlated (-0.988 in their data), so

asset-pricing tests lack power to separate size from β effects in average returns.

To allow for variation in β that is unrelated to size, we subdivide each size decile into 10 portfolios on the basis of pre-ranking β s for individual stocks. The pre-ranking β s are estimated on 24 to 60 monthly returns (as available) in the 5 years before July of year t . We set the β breakpoints for each size decile using only NYSE stocks that satisfy our COMPUSTAT-CRSP data requirements for year $t - 1$. Using NYSE stocks ensures that the β breakpoints are not dominated after 1973 by the many small stocks on NASDAQ. Setting β breakpoints with stocks that satisfy our COMPUSTAT-CRSP data requirements guarantees that there are firms in each of the 100 size- β portfolios.

After assigning firms to the size- β portfolios in June, we calculate the equal-weighted monthly returns on the portfolios for the next 12 months, from July to June. In the end, we have post-ranking monthly returns for July 1963 to December 1990 on 100 portfolios formed on size and pre-ranking β s. We then estimate β s using the full sample (330 months) of post-ranking returns on each of the 100 portfolios, with the CRSP value-weighted portfolio of NYSE, AMEX, and (after 1972) NASDAQ stocks used as the proxy for the market. We have also estimated β s using the value-weighted or the equal-weighted portfolio of NYSE stocks as the proxy for the market. These β s produce inferences on the role of β in average returns like those reported below.

We estimate β as the sum of the slopes in the regression of the return on a portfolio on the current and prior month's market return. (An additional lead and lag of the market have little effect on these sum β s.) The sum β s are meant to adjust for nonsynchronous trading (Dimson (1979)). Fowler and Rorke (1983) show that sum β s are biased when the market return is autocorrelated. The 1st- and 2nd-order autocorrelations of the monthly market returns for July 1963 to December 1990 are 0.06 and -0.05 , both about 1 standard error from 0. If the Fowler-Rorke corrections are used, they lead to trivial changes in the β s. We stick with the simpler sum β s. Appendix Table AI shows that using sum β s produces large increases in the β s of the smallest ME portfolios and small declines in the β s of the largest ME portfolios.

Chan and Chen (1988) show that full-period β estimates for portfolios can work well in tests of the SLB model, even if the true β s of the portfolios vary through time, if the variation in the β s is proportional,

$$\beta_{j,t} - \beta_j = k_t(\beta_j - \beta), \quad (1)$$

where $\beta_{j,t}$ is the true β for portfolio j at time t , β_j is the mean of $\beta_{j,t}$ across t , and β is the mean of the β_j . The Appendix argues that (1) is a good approximation for the variation through time in the true β s of portfolios (j) formed on size and β . For diehard β fans, sure to be skeptical of our results on the weak role of β in average stock returns, we can also report that the results stand up to robustness checks that use 5-year pre-ranking β s, or 5-year post-ranking β s, instead of the full-period post-ranking β s.

We allocate the full-period post-ranking β of a size- β portfolio to each stock in the portfolio. These are the β s that will be used in the Fama-MacBeth cross-sectional regressions for individual stocks. We judge that the precision of the full-period post-ranking portfolio β s, relative to the imprecise β estimates that would be obtained for individual stocks, more than makes up for the fact that true β s are not the same for all stocks in a portfolio. And note that assigning full-period portfolio β s to stocks does not mean that a stock's β is constant. A stock can move across portfolios with year-to-year changes in the stock's size (ME) and in the estimates of its β for the preceding 5 years.

B.2. β Estimates

Table I shows that forming portfolios on size and pre-ranking β s, rather than on size alone, magnifies the range of full-period post-ranking β s. Sorted on size alone, the post-ranking β s range from 1.44 for the smallest ME portfolio to 0.92 for the largest. This spread of β s across the 10 size deciles is smaller than the spread of post-ranking β s produced by the β sort of *any* size decile. For example, the post-ranking β s for the 10 portfolios in the smallest size decile range from 1.05 to 1.79. Across all 100 size- β portfolios, the post-ranking β s range from 0.53 to 1.79, a spread 2.4 times the spread, 0.52, obtained with size portfolios alone.

Two other facts about the β s are important. First, in each size decile the post-ranking β s closely reproduce the ordering of the pre-ranking β s. We take this to be evidence that the pre-ranking β sort captures the ordering of true post-ranking β s. (The appendix gives more evidence on this important issue.) Second, the β sort is not a refined size sort. In any size decile, the average values of $\ln(\text{ME})$ are similar across the β -sorted portfolios. Thus the pre-ranking β sort achieves its goal. It produces strong variation in post-ranking β s that is unrelated to size. This is important in allowing our tests to distinguish between β and size effects in average returns.

II. β and Size

The Sharpe-Lintner-Black (SLB) model plays an important role in the way academics and practitioners think about risk and the relation between risk and expected return. We show next that when common stock portfolios are formed on size alone, there seems to be evidence for the model's central prediction: average return is positively related to β . The β s of size portfolios are, however, almost perfectly correlated with size, so tests on size portfolios are unable to disentangle β and size effects in average returns. Allowing for variation in β that is unrelated to size breaks the logjam, but at the expense of β . Thus, when we subdivide size portfolios on the basis of pre-ranking β s, we find a strong relation between average return and size, but no relation between average return and β .

A. Informal Tests

Table II shows post-ranking average returns for July 1963 to December 1990 for portfolios formed from one-dimensional sorts of stocks on size or β . The portfolios are formed at the end of June each year and their equal-weighted returns are calculated for the next 12 months. We use returns for July to June to match the returns in later tests that use the accounting data. When we sort on just size or 5-year pre-ranking β s, we form 12 portfolios. The middle 8 cover deciles of size or β . The 4 extreme portfolios (1A, 1B, 10A, and 10B) split the bottom and top deciles in half.

Table II shows that when portfolios are formed on size alone, we observe the familiar strong negative relation between size and average return (Banz (1981)), and a strong positive relation between average return and β . Average returns fall from 1.64% per month for the smallest ME portfolio to 0.90% for the largest. Post-ranking β s also decline across the 12 size portfolios, from 1.44 for portfolio 1A to 0.90 for portfolio 10B. Thus, a simple size sort seems to support the SLB prediction of a positive relation between β and average return. But the evidence is muddled by the tight relation between size and the β s of size portfolios.

The portfolios formed on the basis of the ranked market β s of stocks in Table II produce a wider range of β s (from 0.81 for portfolio 1A to 1.73 for 10B) than the portfolios formed on size. Unlike the size portfolios, the β -sorted portfolios do not support the SLB model. There is little spread in average returns across the β portfolios, and there is no obvious relation between β and average returns. For example, although the two extreme portfolios, 1A and 10B, have much different β s, they have nearly identical average returns (1.20% and 1.18% per month). These results for 1963–1990 confirm Reinganum's (1981) evidence that for β -sorted portfolios, there is no relation between average return and β during the 1964–1979 period.

The 100 portfolios formed on size and then pre-ranking β in Table I clarify the contradictory evidence on the relation between β and average return produced by portfolios formed on size or β alone. Specifically, the two-pass sort gives a clearer picture of the separate roles of size and β in average returns. Contrary to the central prediction of the SLB model, the second-pass β sort produces little variation in average returns. Although the post-ranking β s in Table I increase strongly in each size decile, average returns are flat or show a slight tendency to decline. In contrast, within the columns of the average return and β matrices of Table I, average returns and β s decrease with increasing size.

The two-pass sort on size and β in Table I says that variation in β that is tied to size is positively related to average return, but variation in β unrelated to size is not compensated in the average returns of 1963–1990. The proper inference seems to be that there is a relation between size and average return, but controlling for size, there is no relation between β and average return. The regressions that follow confirm this conclusion, and they produce another that is stronger. The regressions show that when one allows

Table I
**Average Returns, Post-Ranking β s and Average Size For Portfolios Formed on
 Size and then β : Stocks Sorted on ME (Down) then Pre-Ranking β (Across):
 July 1963 to December 1990**

Portfolios are formed yearly. The breakpoints for the size (ME, price times shares outstanding) deciles are determined in June of year t ($t = 1963-1990$) using all NYSE stocks on CRSP. All NYSE, AMEX, and NASDAQ stocks that meet the CRSP-COMPUSTAT data requirements are allocated to the 10 size portfolios using the NYSE breakpoints. Each size decile is subdivided into 10 β portfolios using pre-ranking β s of individual stocks, estimated with 2 to 5 years of monthly returns (as available) ending in June of year t . We use only NYSE stocks that meet the CRSP-COMPUSTAT data requirements to establish the β breakpoints. The equal-weighted monthly returns on the resulting 100 portfolios are then calculated for July of year t to June of year $t + 1$.

The post-ranking β s use the full (July 1963 to December 1990) sample of post-ranking returns for each portfolio. The pre- and post-ranking β s (here and in all other tables) are the sum of the slopes from a regression of monthly returns on the current and prior month's returns on the value-weighted portfolio of NYSE, AMEX, and (after 1972) NASDAQ stocks. The average return is the time-series average of the monthly equal-weighted portfolio returns, in percent. The average size of a portfolio is the time-series average of monthly averages of $\ln(\text{ME})$ for stocks in the portfolio at the end of June of each year, with ME denominated in millions of dollars.

The average number of stocks per month for the size- β portfolios in the smallest size decile varies from 70 to 177. The average number of stocks for the size- β portfolios in size deciles 2 and 3 is between 15 and 41, and the average number for the largest 7 size deciles is between 11 and 22.

The All column shows statistics for equal-weighted size-decile (ME) portfolios. The All row shows statistics for equal-weighted portfolios of the stocks in each β group.

	All	Low- β	β -2	β -3	β -4	β -5	β -6	β -7	β -8	β -9	High- β
All	1.25	1.34	1.29	1.36	1.31	1.33	1.28	1.24	1.21	1.25	1.14
Small-ME	1.52	1.71	1.57	1.79	1.61	1.50	1.50	1.37	1.63	1.50	1.42
ME-2	1.29	1.25	1.42	1.36	1.39	1.65	1.61	1.37	1.31	1.34	1.11
ME-3	1.24	1.12	1.31	1.17	1.70	1.29	1.10	1.31	1.36	1.26	0.76
ME-4	1.25	1.27	1.13	1.54	1.06	1.34	1.06	1.41	1.17	1.35	0.98
ME-5	1.29	1.34	1.42	1.39	1.48	1.42	1.18	1.13	1.27	1.18	1.08
ME-6	1.17	1.08	1.53	1.27	1.15	1.20	1.21	1.18	1.04	1.07	1.02
ME-7	1.07	0.95	1.21	1.26	1.09	1.18	1.11	1.24	0.62	1.32	0.76
ME-8	1.10	1.09	1.05	1.37	1.20	1.27	0.98	1.18	1.02	1.01	0.94
ME-9	0.95	0.98	0.88	1.02	1.14	1.07	1.23	0.94	0.82	0.88	0.59
Large-ME	0.89	1.01	0.93	1.10	0.94	0.93	0.89	1.03	0.71	0.74	0.56

Panel A: Average Monthly Returns (in Percent)

The Cross-Section of Expected Stock Returns

Table I—Continued

	All	Low- β	β -2	β -3	β -4	β -5	β -6	β -7	β -8	β -9	High- β
Panel B: Post-Ranking β s											
All		0.87	0.99	1.09	1.16	1.26	1.29	1.35	1.45	1.52	1.72
Small-ME	1.44	1.05	1.18	1.28	1.32	1.40	1.40	1.49	1.61	1.64	1.79
ME-2	1.39	0.91	1.15	1.17	1.24	1.36	1.41	1.43	1.50	1.66	1.76
ME-3	1.35	0.97	1.13	1.13	1.21	1.26	1.28	1.39	1.50	1.51	1.75
ME-4	1.34	0.78	1.03	1.17	1.16	1.29	1.37	1.46	1.51	1.64	1.71
ME-5	1.25	0.66	0.85	1.12	1.15	1.16	1.26	1.30	1.43	1.59	1.68
ME-6	1.23	0.61	0.78	1.05	1.16	1.22	1.28	1.36	1.46	1.49	1.70
ME-7	1.17	0.57	0.92	1.01	1.11	1.14	1.26	1.24	1.39	1.34	1.60
ME-8	1.09	0.53	0.74	0.94	1.02	1.13	1.12	1.18	1.26	1.35	1.52
ME-9	1.03	0.58	0.74	0.80	0.95	1.06	1.15	1.14	1.21	1.22	1.42
Large-ME	0.92	0.57	0.71	0.78	0.89	0.95	0.92	1.02	1.01	1.11	1.32
Panel C: Average Size (ln(ME))											
All	4.11	3.86	4.26	4.33	4.41	4.27	4.32	4.26	4.19	4.03	3.77
Small-ME	2.24	2.12	2.27	2.30	2.30	2.28	2.29	2.30	2.32	2.25	2.15
ME-2	3.63	3.65	3.68	3.70	3.72	3.69	3.70	3.69	3.69	3.70	3.68
ME-3	4.10	4.14	4.18	4.12	4.15	4.16	4.16	4.18	4.14	4.15	4.15
ME-4	4.50	4.53	4.53	4.57	4.54	4.56	4.55	4.52	4.58	4.52	4.56
ME-5	4.89	4.91	4.91	4.93	4.95	4.93	4.92	4.93	4.92	4.92	4.95
ME-6	5.30	5.30	5.33	5.34	5.34	5.33	5.33	5.33	5.33	5.34	5.36
ME-7	5.73	5.73	5.75	5.77	5.76	5.73	5.77	5.77	5.76	5.72	5.76
ME-8	6.24	6.26	6.27	6.26	6.24	6.24	6.27	6.24	6.24	6.24	6.26
ME-9	6.82	6.82	6.84	6.82	6.82	6.81	6.81	6.81	6.81	6.80	6.83
Large-ME	7.93	7.94	8.04	8.10	8.04	8.02	8.02	7.94	7.80	7.75	7.62

Table II
**Properties of Portfolios Formed on Size or Pre-Ranking β :
 July 1963 to December 1990**

At the end of June of each year t , 12 portfolios are formed on the basis of ranked values of size (ME) or pre-ranking β . The pre-ranking β s use 2 to 5 years (as available) of monthly returns ending in June of t . Portfolios 2-9 cover deciles of the ranking variables. The bottom and top 2 portfolios (1A, 1B, 10A, and 10B) split the bottom and top deciles in half. The breakpoints for the ME portfolios are based on ranked values of ME for all NYSE stocks on CRSP. NYSE breakpoints for pre-ranking β s are also used to form the β portfolios. NYSE, AMEX, and NASDAQ stocks are then allocated to the size or β portfolios using the NYSE breakpoints. We calculate each portfolio's monthly equal-weighted return for July of year t to June of year $t + 1$, and then reform the portfolios in June of $t + 1$.

BE is the book value of common equity plus balance-sheet deferred taxes, A is total book assets, and E is earnings (income before extraordinary items, plus income-statement deferred taxes, minus preferred dividends). BE, A, and E are for each firm's latest fiscal year ending in calendar year $t - 1$. The accounting ratios are measured using market equity ME in December of year $t - 1$. Firm size $\ln(\text{ME})$ is measured in June of year t , with ME denominated in millions of dollars.

The average return is the time-series average of the monthly equal-weighted portfolio returns, in percent. $\ln(\text{ME})$, $\ln(\text{BE}/\text{ME})$, $\ln(\text{A}/\text{ME})$, $\ln(\text{A}/\text{BE})$, E/P, and E/P dummy are the time-series averages of the monthly average values of these variables in each portfolio. Since the E/P dummy is 0 when earnings are positive, and 1 when earnings are negative, E/P dummy gives the average proportion of stocks with negative earnings in each portfolio.

β is the time-series average of the monthly portfolio β s. Stocks are assigned the post-ranking β of the size- β portfolio they are in at the end of June of year t (Table I). These individual-firm β s are averaged to compute the monthly β s for each portfolio for July of year t to June of year $t + 1$.

Firms is the average number of stocks in the portfolio each month.

	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Return	1.64	1.16	1.29	1.24	1.25	1.29	1.17	1.07	1.10	0.95	0.88	0.90
β	1.44	1.44	1.39	1.34	1.33	1.24	1.22	1.16	1.08	1.02	0.95	0.90
$\ln(\text{ME})$	1.98	3.18	3.63	4.10	4.50	4.89	5.30	5.73	6.24	6.82	7.39	8.44
$\ln(\text{BE}/\text{ME})$	-0.01	-0.21	-0.23	-0.26	-0.32	-0.36	-0.36	-0.44	-0.40	-0.42	-0.51	-0.65
$\ln(\text{A}/\text{ME})$	0.73	0.50	0.46	0.43	0.37	0.32	0.32	0.24	0.29	0.27	0.17	-0.03
$\ln(\text{A}/\text{BE})$	0.75	0.71	0.69	0.69	0.68	0.67	0.68	0.67	0.69	0.70	0.68	0.62
E/P dummy	0.26	0.14	0.11	0.09	0.06	0.04	0.04	0.03	0.03	0.02	0.02	0.01
E(+)/P	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09
Firms	772	189	236	170	144	140	128	125	119	114	60	64

Panel A: Portfolios Formed on Size

Table II—Continued

	1A	1B	2	3	4	5	6	7	8	9	10A	10B
	Panel B: Portfolios Formed on Pre-Ranking β											
Return	1.20	1.20	1.32	1.26	1.31	1.30	1.30	1.23	1.23	1.33	1.34	1.18
β	0.81	0.79	0.92	1.04	1.13	1.19	1.26	1.32	1.41	1.52	1.63	1.73
$\ln(\text{ME})$	4.21	4.86	4.75	4.68	4.59	4.48	4.36	4.25	3.97	3.78	3.52	3.15
$\ln(\text{BE}/\text{ME})$	-0.18	-0.13	-0.22	-0.21	-0.23	-0.22	-0.22	-0.25	-0.23	-0.27	-0.31	-0.50
$\ln(\text{A}/\text{ME})$	0.60	0.66	0.49	0.45	0.42	0.42	0.45	0.42	0.47	0.46	0.46	0.31
$\ln(\text{A}/\text{BE})$	0.78	0.79	0.71	0.66	0.64	0.65	0.67	0.67	0.70	0.73	0.77	0.81
E/P dummy	0.12	0.06	0.09	0.09	0.08	0.09	0.10	0.10	0.12	0.14	0.17	0.23
E(+)/P	0.11	0.12	0.10	0.10	0.10	0.10	0.10	0.09	0.10	0.09	0.09	0.08
Firms	116	80	185	181	179	182	185	205	227	267	165	291

for variation in β that is unrelated to size, the relation between β and average return is flat, even when β is the only explanatory variable.

B. Fama-MacBeth Regressions

Table III shows time-series averages of the slopes from the month-by-month Fama-MacBeth (FM) regressions of the cross-section of stock returns on size, β , and the other variables (leverage, E/P, and book-to-market equity) used to explain average returns. The average slopes provide standard FM tests for determining which explanatory variables on average have non-zero expected premiums during the July 1963 to December 1990 period.

Like the average returns in Tables I and II, the regressions in Table III say that size, $\ln(\text{ME})$, helps explain the cross-section of average stock returns. The average slope from the monthly regressions of returns on size alone is -0.15% , with a t -statistic of -2.58 . This reliable negative relation persists no matter which other explanatory variables are in the regressions; the average slopes on $\ln(\text{ME})$ are always close to or more than 2 standard errors from 0. The size effect (smaller stocks have higher average returns) is thus robust in the 1963–1990 returns on NYSE, AMEX, and NASDAQ stocks.

In contrast to the consistent explanatory power of size, the FM regressions show that market β does not help explain average stock returns for 1963–1990. In a shot straight at the heart of the SLB model, the average slope from the regressions of returns on β alone in Table III is 0.15% per month and only 0.46 standard errors from 0. In the regressions of returns on size and β , size has explanatory power (an average slope -3.41 standard errors from 0), but the average slope for β is negative and only 1.21 standard errors from 0. Lakonishok and Shapiro (1986) get similar results for NYSE stocks for 1962–1981. We can also report that β shows no power to explain average returns (the average slopes are typically less than 1 standard error from 0) in FM regressions that use various combinations of β with size, book-to-market equity, leverage, and E/P.

C. Can β Be Saved?

What explains the poor results for β ? One possibility is that other explanatory variables are correlated with true β s, and this obscures the relation between average returns and measured β s. But this line of attack cannot explain why β has no power when used alone to explain average returns. Moreover, leverage, book-to-market equity, and E/P do not seem to be good proxies for β . The averages of the monthly cross-sectional correlations between β and the values of these variables for individual stocks are all within 0.15 of 0.

Another hypothesis is that, as predicted by the SLB model, there is a positive relation between β and average return, but the relation is obscured by noise in the β estimates. However, our full-period post-ranking β s do not seem to be imprecise. Most of the standard errors of the β s (not shown) are

Table III

Average Slopes (*t*-Statistics) from Month-by-Month Regressions of Stock Returns on β , Size, Book-to-Market Equity, Leverage, and E/P: July 1963 to December 1990

Stocks are assigned the post-ranking β of the size- β portfolio they are in at the end of June of year t (Table I). BE is the book value of common equity plus balance-sheet deferred taxes, A is total book assets, and E is earnings (income before extraordinary items, plus income-statement deferred taxes, minus preferred dividends) BE, A, and E are for each firm's latest fiscal year ending in calendar year $t - 1$. The accounting ratios are measured using market equity ME in December of year $t - 1$. Firm size $\ln(\text{ME})$ is measured in June of year t . In the regressions, these values of the explanatory variables for individual stocks are matched with CRSP returns for the months from July of year t to June of year $t + 1$. The gap between the accounting data and the returns ensures that the accounting data are available prior to the returns. If earnings are positive, $E(+)/P$ is the ratio of total earnings to market equity and E/P dummy is 0. If earnings are negative, $E(+)/P$ is 0 and E/P dummy is 1.

The average slope is the time-series average of the monthly regression slopes for July 1963 to December 1990, and the *t*-statistic is the average slope divided by its time-series standard error.

On average, there are 2267 stocks in the monthly regressions. To avoid giving extreme observations heavy weight in the regressions, the smallest and largest 0.5% of the observations on $E(+)/P$, BE/ME, A/ME, and A/BE are set equal to the next largest or smallest values of the ratios (the 0.005 and 0.995 fractiles). This has no effect on inferences.

β	$\ln(\text{ME})$	$\ln(\text{BE}/\text{ME})$	$\ln(\text{A}/\text{ME})$	$\ln(\text{A}/\text{BE})$	E/P Dummy	$E(+)/P$
0.15 (0.46)						
	-0.15 (-2.58)					
-0.37 (-1.21)	-0.17 (-3.41)					
		0.50 (5.71)				
			0.50 (5.69)	-0.57 (-5.34)		
					0.57 (2.28)	4.72 (4.57)
	-0.11 (-1.99)	0.35 (4.44)				
	-0.11 (-2.06)		0.35 (4.32)	-0.50 (-4.56)		
	-0.16 (-3.06)				0.06 (0.38)	2.99 (3.04)
	-0.13 (-2.47)	0.33 (4.46)			-0.14 (-0.90)	0.87 (1.23)
	-0.13 (-2.47)		0.32 (4.28)	-0.46 (-4.45)	-0.08 (-0.56)	1.15 (1.57)

0.05 or less, only 1 is greater than 0.1, and the standard errors are small relative to the range of the β s (0.53 to 1.79).

The β -sorted portfolios in Tables I and II also provide strong evidence against the β -measurement-error story. When portfolios are formed on pre-ranking β s alone (Table II), the post-ranking β s for the portfolios almost perfectly reproduce the ordering of the pre-ranking β s. Only the β for portfolio 1B is out of line, and only by 0.02. Similarly, when portfolios are formed on size and then pre-ranking β s (Table I), the post-ranking β s in each size decile closely reproduce the ordering of the pre-ranking β s.

The correspondence between the ordering of the pre-ranking and post-ranking β s for the β -sorted portfolios in Tables I and II is evidence that the post-ranking β s are informative about the ordering of the true β s. The problem for the SLB model is that there is no similar ordering in the average returns on the β -sorted portfolios. Whether one looks at portfolios sorted on β alone (Table II) or on size and then β (Table I), average returns are flat (Table II) or decline slightly (Table I) as the post-ranking β s increase.

Our evidence on the robustness of the size effect and the absence of a relation between β and average return is so contrary to the SLB model that it behooves us to examine whether the results are special to 1963–1990. The appendix shows that NYSE returns for 1941–1990 behave like the NYSE, AMEX, and NASDAQ returns for 1963–1990; there is a reliable size effect over the full 50-year period, but little relation between β and average return. Interestingly, there is a reliable simple relation between β and average return during the 1941–1965 period. These 25 years are a major part of the samples in the early studies of the SLB model of Black, Jensen, and Scholes (1972) and Fama and MacBeth (1973). Even for the 1941–1965 period, however, the relation between β and average return disappears when we control for size.

III. Book-to-Market Equity, E/P, and Leverage

Tables I to III say that there is a strong relation between the average returns on stocks and size, but there is no reliable relation between average returns and β . In this section we show that there is also a strong cross-sectional relation between average returns and book-to-market equity. If anything, this book-to-market effect is more powerful than the size effect. We also find that the combination of size and book-to-market equity absorbs the apparent roles of leverage and E/P in average stock returns.

A. Average Returns

Table IV shows average returns for July 1963 to December 1990 for portfolios formed on ranked values of book-to-market equity (BE/ME) or earnings-price ratio (E/P). The BE/ME and E/P portfolios in Table IV are formed in the same general way (one-dimensional yearly sorts) as the size and β portfolios in Table II. (See the tables for details.)

The relation between average return and E/P has a familiar U-shape (e.g., Jaffe, Keim, and Westerfield (1989) for U.S. data, and Chan, Hamao, and Lakonishok (1991) for Japan). Average returns decline from 1.46% per month for the negative E/P portfolio to 0.93% for the firms in portfolio 1B that have low but positive E/P. Average returns then increase monotonically, reaching 1.72% per month for the highest E/P portfolio.

The more striking evidence in Table IV is the strong positive relation between average return and book-to-market equity. Average returns rise from 0.30% for the lowest BE/ME portfolio to 1.83% for the highest, a difference of 1.53% per month. This spread is twice as large as the difference of 0.74% between the average monthly returns on the smallest and largest size portfolios in Table II. Note also that the strong relation between book-to-market equity and average return is unlikely to be a β effect in disguise; Table IV shows that post-ranking market β s vary little across portfolios formed on ranked values of BE/ME.

On average, only about 50 (out of 2317) firms per year have negative book equity, BE. The negative BE firms are mostly concentrated in the last 14 years of the sample, 1976–1989, and we do not include them in the tests. We can report, however, that average returns for negative BE firms are high, like the average returns of high BE/ME firms. Negative BE (which results from persistently negative earnings) and high BE/ME (which typically means that stock prices have fallen) are both signals of poor earning prospects. The similar average returns of negative and high BE/ME firms are thus consistent with the hypothesis that book-to-market equity captures cross-sectional variation in average returns that is related to relative distress.

B. Fama-MacBeth Regressions

B.1. BE/ME

The FM regressions in Table III confirm the importance of book-to-market equity in explaining the cross-section of average stock returns. The average slope from the monthly regressions of returns on $\ln(\text{BE}/\text{ME})$ alone is 0.50%, with a t -statistic of 5.71. This book-to-market relation is stronger than the size effect, which produces a t -statistic of -2.58 in the regressions of returns on $\ln(\text{ME})$ alone. But book-to-market equity does not replace size in explaining average returns. When both $\ln(\text{ME})$ and $\ln(\text{BE}/\text{ME})$ are included in the regressions, the average size slope is still -1.99 standard errors from 0; the book-to-market slope is an impressive 4.44 standard errors from 0.

B.2. Leverage

The FM regressions that explain returns with leverage variables provide interesting insight into the relation between book-to-market equity and average return. We use two leverage variables, the ratio of book assets to market equity, A/ME , and the ratio of book assets to book equity, A/BE . We interpret A/ME as a measure of market leverage, while A/BE is a measure

Table IV
Properties of Portfolios Formed on Book-to-Market Equity (BE/ME) and Earnings-Price Ratio (E/P): July 1963 to December 1990

At the end of each year $t - 1$, 12 portfolios are formed on the basis of ranked values of BE/ME or E/P. Portfolios 2-9 cover deciles of the ranking variables. The bottom and top 2 portfolios (1A, 1B, 10A, and 10B) split the bottom and top deciles in half. For E/P, there are 13 portfolios; portfolio 0 is stocks with negative E/P. Since BE/ME and E/P are not strongly related to exchange listing, their portfolio breakpoints are determined on the basis of the ranked values of the variables for all stocks that satisfy the CRSP-COMPUSTAT data requirements. BE is the book value of common equity plus balance-sheet deferred taxes, A is total book assets, and E is earnings (income before extraordinary items, plus income-statement deferred taxes, minus preferred dividends). BE, A, and E are for each firm's latest fiscal year ending in calendar year $t - 1$. The accounting ratios are measured using market equity ME in December of year $t - 1$. Firm size $\ln(\text{ME})$ is measured in June of year t , with ME denominated in millions of dollars. We calculate each portfolio's monthly equal-weighted return for July of year t to June of year $t + 1$, and then reform the portfolios at the end of year t .

Return is the time-series average of the monthly equal-weighted portfolio returns (in percent). $\ln(\text{ME})$, $\ln(\text{BE}/\text{ME})$, $\ln(\text{A}/\text{BE})$, $\text{E}(+)/\text{P}$, and E/P dummy are the time-series averages of the monthly average values of these variables in each portfolio. Since the E/P dummy is 0 when earnings are positive, and 1 when earnings are negative, E/P dummy gives the average proportion of stocks with negative earnings in each portfolio.

β is the time-series average of the monthly portfolio β s. Stocks are assigned the post-ranking β of the size- β portfolio they are in at the end of June of year t (Table I). These individual-firm β s are averaged to compute the monthly β s for each portfolio for July of year t to June of year $t + 1$. Firms is the average number of stocks in the portfolio each month.

Portfolio	0	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Return	0.30	0.67	0.87	0.87	0.97	1.04	1.17	1.30	1.44	1.50	1.59	1.92	1.83
β	1.36	1.34	1.32	1.32	1.30	1.28	1.27	1.27	1.27	1.27	1.29	1.33	1.35
$\ln(\text{ME})$	4.53	4.67	4.69	4.69	4.56	4.47	4.38	4.23	4.06	3.85	3.51	3.06	2.65
$\ln(\text{BE}/\text{ME})$	-2.22	-1.51	-1.09	-1.09	-0.75	-0.51	-0.32	-0.14	0.03	0.21	0.42	0.66	1.02
$\ln(\text{A}/\text{ME})$	-1.24	-0.79	-0.40	-0.40	-0.05	0.20	0.40	0.56	0.71	0.91	1.12	1.35	1.75
$\ln(\text{A}/\text{BE})$	0.94	0.71	0.68	0.68	0.70	0.71	0.71	0.70	0.68	0.70	0.70	0.70	0.73
E/P dummy	0.29	0.15	0.10	0.10	0.08	0.08	0.08	0.09	0.09	0.11	0.15	0.22	0.36
$\text{E}(+)/\text{P}$	0.03	0.04	0.06	0.06	0.08	0.09	0.10	0.11	0.11	0.12	0.12	0.11	0.10
Firms	89	98	209	209	222	226	230	235	237	239	239	120	117

Panel A: Stocks Sorted on Book-to-Market Equity (BE/ME)

The Cross-Section of Expected Stock Returns

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Table IV—Continued

Portfolio	0	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Panel B: Stocks Sorted on Earnings-Price Ratio (E/P)													
Return	1.46	1.04	0.93	0.94	1.03	1.18	1.22	1.33	1.42	1.46	1.57	1.74	1.72
β	1.47	1.40	1.35	1.31	1.28	1.26	1.25	1.26	1.24	1.23	1.24	1.28	1.31
$\ln(\text{ME})$	2.48	3.64	4.33	4.61	4.64	4.63	4.58	4.49	4.37	4.28	4.07	3.82	3.52
$\ln(\text{BE}/\text{ME})$	-0.10	-0.76	-0.91	-0.79	-0.61	-0.47	-0.33	-0.21	-0.08	0.02	0.15	0.26	0.40
$\ln(\text{A}/\text{ME})$	0.90	-0.05	-0.27	-0.16	0.03	0.18	0.31	0.44	0.58	0.70	0.85	1.01	1.25
$\ln(\text{A}/\text{BE})$	0.99	0.70	0.63	0.63	0.64	0.65	0.64	0.65	0.66	0.68	0.71	0.75	0.86
E/P dummy	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E(+)/P	0.00	0.01	0.03	0.05	0.06	0.08	0.09	0.11	0.12	0.14	0.16	0.20	0.28
Firms	355	88	90	182	190	193	196	194	197	195	195	95	91

of book leverage. The regressions use the natural logs of the leverage ratios, $\ln(A/ME)$ and $\ln(A/BE)$, because preliminary tests indicated that logs are a good functional form for capturing leverage effects in average returns. Using logs also leads to a simple interpretation of the relation between the roles of leverage and book-to-market equity in average returns.

The FM regressions of returns on the leverage variables (Table III) pose a bit of a puzzle. The two leverage variables are related to average returns, but with opposite signs. As in Bhandari (1988), higher market leverage is associated with higher average returns; the average slopes for $\ln(A/ME)$ are always positive and more than 4 standard errors from 0. But higher book leverage is associated with lower average returns; the average slopes for $\ln(A/BE)$ are always negative and more than 4 standard errors from 0.

The puzzle of the opposite slopes on $\ln(A/ME)$ and $\ln(A/BE)$ has a simple solution. The average slopes for the two leverage variables are opposite in sign but close in absolute value, e.g., 0.50 and -0.57 . Thus it is the difference between market and book leverage that helps explain average returns. But the difference between market and book leverage is book-to-market equity, $\ln(BE/ME) = \ln(A/ME) - \ln(A/BE)$. Table III shows that the average book-to-market slopes in the FM regressions are indeed close in absolute value to the slopes for the two leverage variables.

The close links between the leverage and book-to-market results suggest that there are two equivalent ways to interpret the book-to-market effect in average returns. A high ratio of book equity to market equity (a low stock price relative to book value) says that the market judges the prospects of a firm to be poor relative to firms with low BE/ME . Thus BE/ME may capture the relative-distress effect postulated by Chan and Chen (1991). A high book-to-market ratio also says that a firm's market leverage is high relative to its book leverage; the firm has a large amount of market-imposed leverage because the market judges that its prospects are poor and discounts its stock price relative to book value. In short, our tests suggest that the relative-distress effect, captured by BE/ME , can also be interpreted as an involuntary leverage effect, which is captured by the difference between A/ME and A/BE .

B.3. E/P

Ball (1978) posits that the earnings-price ratio is a catch-all for omitted risk factors in expected returns. If current earnings proxy for expected future earnings, high-risk stocks with high expected returns will have low prices relative to their earnings. Thus, E/P should be related to expected returns, whatever the omitted sources of risk. This argument only makes sense, however, for firms with positive earnings. When current earnings are negative, they are not a proxy for the earnings forecasts embedded in the stock price, and E/P is not a proxy for expected returns. Thus, the slope for E/P in the FM regressions is based on positive values; we use a dummy variable for E/P when earnings are negative.

The U-shaped relation between average return and E/P observed in Table IV is also apparent when the E/P variables are used alone in the FM regressions in Table III. The average slope on the E/P dummy variable (0.57% per month, 2.28 standard errors from 0) confirms that firms with negative earnings have higher average returns. The average slope for stocks with positive E/P (4.72% per month, 4.57 standard errors from 0) shows that average returns increase with E/P when it is positive.

Adding size to the regressions kills the explanatory power of the E/P dummy. Thus the high average returns of negative E/P stocks are better captured by their size, which Table IV says is on average small. Adding both size and book-to-market equity to the E/P regressions kills the E/P dummy and lowers the average slope on E/P from 4.72 to 0.87 ($t = 1.23$). In contrast, the average slopes for $\ln(\text{ME})$ and $\ln(\text{BE}/\text{ME})$ in the regressions that include E/P are similar to those in the regressions that explain average returns with only size and book-to-market equity. The results suggest that most of the relation between (positive) E/P and average return is due to the positive correlation between E/P and $\ln(\text{BE}/\text{ME})$, illustrated in Table IV; firms with high E/P tend to have high book-to-market equity ratios.

IV. A Parsimonious Model for Average Returns

The results to here are easily summarized:

- (1) When we allow for variation in β that is unrelated to size, there is no reliable relation between β and average return.
- (2) The opposite roles of market leverage and book leverage in average returns are captured well by book-to-market equity.
- (3) The relation between E/P and average return seems to be absorbed by the combination of size and book-to-market equity.

In a nutshell, market β seems to have no role in explaining the average returns on NYSE, AMEX, and NASDAQ stocks for 1963–1990, while size and book-to-market equity capture the cross-sectional variation in average stock returns that is related to leverage and E/P.

A. Average Returns, Size and Book-to-Market Equity

The average return matrix in Table V gives a simple picture of the two-dimensional variation in average returns that results when the 10 size deciles are each subdivided into 10 portfolios based on ranked values of BE/ME for individual stocks. Within a size decile (across a row of the average return matrix), returns typically increase strongly with BE/ME: on average, the returns on the lowest and highest BE/ME portfolios in a size decile differ by 0.99% (1.63% – 0.64%) per month. Similarly, looking down the columns of the average return matrix shows that there is a negative relation between average return and size: on average, the spread of returns across the size portfolios in a BE/ME group is 0.58% per month. The average return matrix gives life to the conclusion from the regressions that,

Table V

**Average Monthly Returns on Portfolios Formed on Size and
Book-to-Market Equity; Stocks Sorted by ME (Down) and then
BE/ME (Across): July 1963 to December 1990**

In June of each year t , the NYSE, AMEX, and NASDAQ stocks that meet the CRSP-COMPUSTAT data requirements are allocated to 10 size portfolios using the NYSE size (ME) breakpoints. The NYSE, AMEX, and NASDAQ stocks in each size decile are then sorted into 10 BE/ME portfolios using the book-to-market ratios for year $t - 1$. BE/ME is the book value of common equity plus balance-sheet deferred taxes for fiscal year $t - 1$, over market equity for December of year $t - 1$. The equal-weighted monthly portfolio returns are then calculated for July of year t to June of year $t + 1$.

Average monthly return is the time-series average of the monthly equal-weighted portfolio returns (in percent).

The All column shows average returns for equal-weighted size decile portfolios. The All row shows average returns for equal-weighted portfolios of the stocks in each BE/ME group.

	Book-to-Market Portfolios										
	All	Low	2	3	4	5	6	7	8	9	High
All	1.23	0.64	0.98	1.06	1.17	1.24	1.26	1.39	1.40	1.50	1.63
Small-ME	1.47	0.70	1.14	1.20	1.43	1.56	1.51	1.70	1.71	1.82	1.92
ME-2	1.22	0.43	1.05	0.96	1.19	1.33	1.19	1.58	1.28	1.43	1.79
ME-3	1.22	0.56	0.88	1.23	0.95	1.36	1.30	1.30	1.40	1.54	1.60
ME-4	1.19	0.39	0.72	1.06	1.36	1.13	1.21	1.34	1.59	1.51	1.47
ME-5	1.24	0.88	0.65	1.08	1.47	1.13	1.43	1.44	1.26	1.52	1.49
ME-6	1.15	0.70	0.98	1.14	1.23	0.94	1.27	1.19	1.19	1.24	1.50
ME-7	1.07	0.95	1.00	0.99	0.83	0.99	1.13	0.99	1.16	1.10	1.47
ME-8	1.08	0.66	1.13	0.91	0.95	0.99	1.01	1.15	1.05	1.29	1.55
ME-9	0.95	0.44	0.89	0.92	1.00	1.05	0.93	0.82	1.11	1.04	1.22
Large-ME	0.89	0.93	0.88	0.84	0.71	0.79	0.83	0.81	0.96	0.97	1.18

controlling for size, book-to-market equity captures strong variation in average returns, and controlling for book-to-market equity leaves a size effect in average returns.

B. The Interaction between Size and Book-to-Market Equity

The average of the monthly correlations between the cross-sections of $\ln(\text{ME})$ and $\ln(\text{BE}/\text{ME})$ for individual stocks is -0.26 . The negative correlation is also apparent in the average values of $\ln(\text{ME})$ and $\ln(\text{BE}/\text{ME})$ for the portfolios sorted on ME or BE/ME in Tables II and IV. Thus, firms with low market equity are more likely to have poor prospects, resulting in low stock prices and high book-to-market equity. Conversely, large stocks are more likely to be firms with stronger prospects, higher stock prices, lower book-to-market equity, and lower average stock returns.

The correlation between size and book-to-market equity affects the regressions in Table III. Including $\ln(\text{BE}/\text{ME})$ moves the average slope on $\ln(\text{ME})$ from -0.15 ($t = -2.58$) in the univariate regressions to -0.11 ($t = -1.99$) in the bivariate regressions. Similarly, including $\ln(\text{ME})$ in the regressions

lowers the average slope on $\ln(\text{BE}/\text{ME})$ from 0.50 to 0.35 (still a healthy 4.44 standard errors from 0). Thus, part of the size effect in the simple regressions is due to the fact that small ME stocks are more likely to have high book-to-market ratios, and part of the simple book-to-market effect is due to the fact that high BE/ME stocks tend to be small (they have low ME).

We should not, however, exaggerate the links between size and book-to-market equity. The correlation (-0.26) between $\ln(\text{ME})$ and $\ln(\text{BE}/\text{ME})$ is not extreme, and the average slopes in the bivariate regressions in Table III show that $\ln(\text{ME})$ and $\ln(\text{BE}/\text{ME})$ are both needed to explain the cross-section of average returns. Finally, the 10×10 average return matrix in Table V provides concrete evidence that, (a) controlling for size, book-to-market equity captures substantial variation in the cross-section of average returns, and (b) within BE/ME groups average returns are related to size.

C. Subperiod Averages of the FM Slopes

The message from the average FM slopes for 1963–1990 (Table III) is that size on average has a negative premium in the cross-section of stock returns, book-to-market equity has a positive premium, and the average premium for market β is essentially 0. Table VI shows the average FM slopes for two roughly equal subperiods (July 1963–December 1976 and January 1977–December 1990) from two regressions: (a) the cross-section of stock returns on size, $\ln(\text{ME})$, and book-to-market equity, $\ln(\text{BE}/\text{ME})$, and (b) returns on β , $\ln(\text{ME})$, and $\ln(\text{BE}/\text{ME})$. For perspective, average returns on the value-weighted and equal-weighted (VW and EW) portfolios of NYSE stocks are also shown.

In FM regressions, the intercept is the return on a standard portfolio (the weights on stocks sum to 1) in which the weighted averages of the explanatory variables are 0 (Fama (1976), chapter 9). In our tests, the intercept is weighted toward small stocks (ME is in millions of dollars so $\ln(\text{ME}) = 0$ implies $\text{ME} = \$1$ million) and toward stocks with relatively high book-to-market ratios (Table IV says that $\ln(\text{BE}/\text{ME})$ is negative for the typical firm, so $\ln(\text{BE}/\text{ME}) = 0$ is toward the high end of the sample ratios). Thus it is not surprising that the average intercepts are always large relative to their standard errors and relative to the returns on the NYSE VW and EW portfolios.

Like the overall period, the subperiods do not offer much hope that the average premium for β is economically important. The average FM slope for β is only slightly positive for 1963–1976 (0.10% per month, $t = 0.25$), and it is negative for 1977–1990 (-0.44% per month, $t = -1.17$). There is a hint that the size effect is weaker in the 1977–1990 period, but inferences about the average size slopes for the subperiods lack power.

Unlike the size effect, the relation between book-to-market equity and average return is so strong that it shows up reliably in both the 1963–1976 and the 1977–1990 subperiods. The average slopes for $\ln(\text{BE}/\text{ME})$ are all more than 2.95 standard errors from 0, and the average slopes for the

Table VI
Subperiod Average Monthly Returns on the NYSE
Equal-Weighted and Value-Weighted Portfolios and Subperiod
Means of the Intercepts and Slopes from the Monthly FM
Cross-Sectional Regressions of Returns on (a) Size (ln(ME)) and
Book-to-Market Equity (ln(BE/ME)), and (b) β , ln(ME), and
ln(BE/ME)

Mean is the time-series mean of a monthly return, Std is its time-series standard deviation, and $t(\text{Mn})$ is Mean divided by its time-series standard error.

Variable	7/63-12/90 (330 Mos.)			7/63-12/76 (162 Mos.)			1/77-12/90 (168 Mos.)		
	Mean	Std	$t(\text{Mn})$	Mean	Std	$t(\text{Mn})$	Mean	Std	$t(\text{Mn})$
NYSE Value-Weighted (VW) and Equal-Weighted (EW) Portfolio Returns									
VW	0.81	4.47	3.27	0.56	4.26	1.67	1.04	4.66	2.89
EW	0.97	5.49	3.19	0.77	5.70	1.72	1.15	5.28	2.82
$R_{it} = a + b_{2t}\ln(\text{ME}_{it}) + b_{3t}\ln(\text{BE}/\text{ME}_{it}) + e_{it}$									
a	1.77	8.51	3.77	1.86	10.10	2.33	1.69	6.67	3.27
b_2	-0.11	1.02	-1.99	-0.16	1.25	-1.62	-0.07	0.73	-1.16
b_3	0.35	1.45	4.43	0.36	1.53	2.96	0.35	1.37	3.30
$R_{it} = a + b_{1t}\beta_{it} + b_{2t}\ln(\text{ME}_{it}) + b_{3t}\ln(\text{BE}/\text{ME}_{it}) + e_{it}$									
a	2.07	5.75	6.55	1.73	6.22	3.54	2.40	5.25	5.92
b_1	-0.17	5.12	-0.62	0.10	5.33	0.25	-0.44	4.91	-1.17
b_2	-0.12	0.89	-2.52	-0.15	1.03	-1.91	-0.09	0.74	-1.64
b_3	0.33	1.24	4.80	0.34	1.36	3.17	0.31	1.10	3.67

subperiods (0.36 and 0.35) are close to the average slope (0.35) for the overall period. The subperiod results thus support the conclusion that, among the variables considered here, book-to-market equity is consistently the most powerful for explaining the cross-section of average stock returns.

Finally, Roll (1983) and Keim (1983) show that the size effect is stronger in January. We have examined the monthly slopes from the FM regressions in Table VI for evidence of a January seasonal in the relation between book-to-market equity and average return. The average January slopes for ln(BE/ME) are about twice those for February to December. Unlike the size effect, however, the strong relation between book-to-market equity and average return is not special to January. The average monthly February-to-December slopes for ln(BE/ME) are about 4 standard errors from 0, and they are close to (within 0.05 of) the average slopes for the whole year. Thus, there is a January seasonal in the book-to-market equity effect, but the positive relation between BE/ME and average return is strong throughout the year.

D. β and the Market Factor: Caveats

Some caveats about the negative evidence on the role of β in average returns are in order. The average premiums for β , size, and book-to-market

equity depend on the definitions of the variables used in the regressions. For example, suppose we replace book-to-market equity ($\ln(\text{BE}/\text{ME})$) with book equity ($\ln(\text{BE})$). As long as size ($\ln(\text{ME})$) is also in the regression, this change will not affect the intercept, the fitted values or the R^2 . But the change, in variables increases the average slope (and the t -statistic) on $\ln(\text{ME})$. In other words, it increases the risk premium associated with size. Other redefinitions of the β , size, and book-to-market variables will produce different regression slopes and perhaps different inferences about average premiums, including possible resuscitation of a role for β . And, of course, at the moment, we have no theoretical basis for choosing among different versions of the variables.

Moreover, the tests here are restricted to stocks. It is possible that including other assets will change the inferences about the average premiums for β , size, and book-to-market equity. For example, the large average intercepts for the FM regressions in Table VI suggest that the regressions will not do a good job on Treasury bills, which have low average returns and are likely to have small loadings on the underlying market, size, and book-to-market factors in returns. Extending the tests to bills and other bonds may well change our inferences about average risk premiums, including the revival of a role for market β .

We emphasize, however, that different approaches to the tests are not likely to revive the Sharpe-Lintner-Black model. Resuscitation of the SLB model requires that a better proxy for the market portfolio (a) overturns our evidence that the simple relation between β and average stock returns is flat and (b) leaves β as the only variable relevant for explaining average returns. Such results seem unlikely, given Stambaugh's (1982) evidence that tests of the SLB model do not seem to be sensitive to the choice of a market proxy. Thus, if there is a role for β in average returns, it is likely to be found in a multi-factor model that transforms the flat simple relation between average return and β into a positively sloped conditional relation.

V. Conclusions and Implications

The Sharpe-Lintner-Black model has long shaped the way academics and practitioners think about average return and risk. Black, Jensen, and Scholes (1972) and Fama and MacBeth (1973) find that, as predicted by the model, there is a positive simple relation between average return and market β during the early years (1926–1968) of the CRSP NYSE returns file. Like Reinganum (1981) and Lakonishok and Shapiro (1986), we find that this simple relation between β and average return disappears during the more recent 1963–1990 period. The appendix that follows shows that the relation between β and average return is also weak in the last half century (1941–1990) of returns on NYSE stocks. In short, our tests do not support the central prediction of the SLB model, that average stock returns are positively related to market β .

Banz (1981) documents a strong negative relation between average return and firm size. Bhandari (1988) finds that average return is positively related to leverage, and Basu (1983) finds a positive relation between average return

and E/P. Stattman (1980) and Rosenberg, Reid, and Lanstein (1985) document a positive relation between average return and book-to-market equity for U.S. stocks, and Chan, Hamao, and Lakonishok (1992) find that BE/ME is also a powerful variable for explaining average returns on Japanese stocks.

Variables like size, E/P, leverage, and book-to-market equity are all scaled versions of a firm's stock price. They can be regarded as different ways of extracting information from stock prices about the cross-section of expected stock returns (Ball (1978), Keim (1988)). Since all these variables are scaled versions of price, it is reasonable to expect that some of them are redundant for explaining average returns. Our main result is that for the 1963–1990 period, size and book-to-market equity capture the cross-sectional variation in average stock returns associated with size, E/P, book-to-market equity, and leverage.

A. Rational Asset-Pricing Stories

Are our results consistent with asset-pricing theory? Since the FM intercept is constrained to be the same for all stocks, FM regressions always impose a linear factor structure on returns and expected returns that is consistent with the multifactor asset-pricing models of Merton (1973) and Ross (1976). Thus our tests impose a rational asset-pricing framework on the relation between average return and size and book-to-market equity.

Even if our results are consistent with asset-pricing theory, they are not economically satisfying. What is the economic explanation for the roles of size and book-to-market equity in average returns? We suggest several paths of inquiry.

- (a) The intercepts and slopes in the monthly FM regressions of returns on $\ln(\text{ME})$ and $\ln(\text{BE}/\text{ME})$ are returns on portfolios that mimic the underlying common risk factors in returns proxied by size and book-to-market equity (Fama (1976), chapter 9). Examining the relations between the returns on these portfolios and economic variables that measure variation in business conditions might help expose the nature of the economic risks captured by size and book-to-market equity.
- (b) Chan, Chen, and Hsieh (1985) argue that the relation between size and average return proxies for a more fundamental relation between expected returns and economic risk factors. Their most powerful factor in explaining the size effect is the difference between the monthly returns on low- and high-grade corporate bonds, which in principle captures a kind of default risk in returns that is priced. It would be interesting to test whether loadings on this or other economic factors, such as those of Chen, Roll, and Ross (1986), can explain the roles of size and book-to-market equity in our tests.
- (c) In a similar vein, Chan and Chen (1991) argue that the relation between size and average return is a relative-prospects effect. The earning prospects of distressed firms are more sensitive to economic

conditions. This results in a distress factor in returns that is priced in expected returns. Chan and Chen construct two mimicking portfolios for the distress factor, based on dividend changes and leverage. It would be interesting to check whether loadings on their distress factors absorb the size and book-to-market equity effects in average returns that are documented here.

- (d) In fact, if stock prices are rational, BE/ME, the ratio of the book value of a stock to the market's assessment of its value, should be a direct indicator of the relative prospects of firms. For example, we expect that high BE/ME firms have low earnings on assets relative to low BE/ME firms. Our work (in progress) suggests that there is indeed a clean separation between high and low BE/ME firms on various measures of economic fundamentals. Low BE/ME firms are persistently strong performers, while the economic performance of high BE/ME firms is persistently weak.

B. Irrational Asset-Pricing Stories

The discussion above assumes that the asset-pricing effects captured by size and book-to-market equity are rational. For BE/ME, our most powerful expected-return variable, there is an obvious alternative. The cross-section of book-to-market ratios might result from market overreaction to the relative prospects of firms. If overreaction tends to be corrected, BE/ME will predict the cross-section of stock returns.

Simple tests do not confirm that the size and book-to-market effects in average returns are due to market overreaction, at least of the type posited by DeBondt and Thaler (1985). One overreaction measure used by DeBondt and Thaler is a stock's most recent 3-year return. Their overreaction story predicts that 3-year losers have strong post-ranking returns relative to 3-year winners. In FM regressions (not shown) for individual stocks, the 3-year lagged return shows no power even when used alone to explain average returns. The univariate average slope for the lagged return is negative, -6 basis points per month, but less than 0.5 standard errors from 0.

C. Applications

Our main result is that two easily measured variables, size and book-to-market equity, seem to describe the cross-section of average stock returns. Prescriptions for using this evidence depend on (a) whether it will persist, and (b) whether it results from rational or irrational asset-pricing.

It is possible that, by chance, size and book-to-market equity happen to describe the cross-section of average returns in our sample, but they were and are unrelated to expected returns. We put little weight on this possibility, especially for book-to-market equity. First, although BE/ME has long been touted as a measure of the return prospects of stocks, there is no evidence that its explanatory power deteriorates through time. The 1963-1990 relation between BE/ME and average return is strong, and remarkably similar

for the 1963–1976 and 1977–1990 subperiods. Second, our preliminary work on economic fundamentals suggests that high-BE/ME firms tend to be persistently poor earners relative to low-BE/ME firms. Similarly, small firms have a long period of poor earnings during the 1980s not shared with big firms. The systematic patterns in fundamentals give us some hope that size and book-to-market equity proxy for risk factors in returns, related to relative earning prospects, that are rationally priced in expected returns.

If our results are more than chance, they have practical implications for portfolio formation and performance evaluation by investors whose primary concern is long-term average returns. If asset-pricing is rational, size and BE/ME must proxy for risk. Our results then imply that the performance of managed portfolios (e.g., pension funds and mutual funds) can be evaluated by comparing their average returns with the average returns of benchmark portfolios with similar size and BE/ME characteristics. Likewise, the expected returns for different portfolio strategies can be estimated from the historical average returns of portfolios with matching size and BE/ME properties.

If asset-pricing is irrational and size and BE/ME do not proxy for risk, our results might still be used to evaluate portfolio performance and measure the expected returns from alternative investment strategies. If stock prices are irrational, however, the likely persistence of the results is more suspect.

Appendix **Size Versus β : 1941–1990**

Our results on the absence of a relation between β and average stock returns for 1963–1990 are so contrary to the tests of the Sharpe-Lintner-Black model by Black, Jensen, and Scholes (1972), Fama and MacBeth (1973), and (more recently) Chan and Chen (1988), that further tests are appropriate. We examine the roles of size and β in the average returns on NYSE stocks for the half-century 1941–1990, the longest available period that avoids the high volatility of returns in the Great Depression. We do not include the accounting variables in the tests because of the strong selection bias (toward successful firms) in the COMPUSTAT data prior to 1962.

We first replicate the results of Chan and Chen (1988). Like them, we find that when portfolios are formed on size alone, there are strong relations between average return and either size or β ; average return increases with β and decreases with size. For size portfolios, however, size ($\ln(\text{ME})$) and β are almost perfectly correlated (-0.98), so it is difficult to distinguish between the roles of size and β in average returns.

One way to generate strong variation in β that is unrelated to size is to form portfolios on size and then on β . As in Tables I to III, we find that the resulting independent variation in β just about washes out the positive simple relation between average return and β observed when portfolios are formed on size alone. The results for NYSE stocks for 1941–1990 are thus much like those for NYSE, AMEX, and NASDAQ stocks for 1963–1990.

This appendix also has methodological goals. For example, the FM regressions in Table III use returns on individual stocks as the dependent variable. Since we allocate portfolio β s to individual stocks but use firm-specific values of other variables like size, β may be at a disadvantage in the regressions for individual stocks. This appendix shows, however, that regressions for portfolios, which put β and size on equal footing, produce results comparable to those for individual stocks.

A. Size Portfolios

Table AI shows average monthly returns and market β s for 12 portfolios of NYSE stocks formed on the basis of size (ME) at the end of each year from 1940 to 1989. For these size portfolios, there is a strong positive relation between average return and β . Average returns fall from 1.96% per month for the smallest ME portfolio (1A) to 0.93% for the largest (10B) and β falls from 1.60 to 0.95. (Note also that, as claimed earlier, estimating β as the sum of the slopes in the regression of a portfolio's return on the current and prior month's NYSE value-weighted return produces much larger β s for the smallest ME portfolios and slightly smaller β s for the largest ME portfolios.)

The FM regressions in Table AI confirm the positive simple relation between average return and β for size portfolios. In the regressions of the size-portfolio returns on β alone, the average premium for a unit of β is 1.45% per month. In the regressions of individual stock returns on β (where stocks are assigned the β of their size portfolio), the premium for a unit of β is 1.39%. Both estimates are about 3 standard errors from 0. Moreover, the β s of size portfolios do not leave a residual size effect; the average residuals from the simple regressions of returns on β in Table AI show no relation to size. These positive SLB results for 1941–1990 are like those obtained by Chan and Chen (1988) in tests on size portfolios for 1954–1983.

There is, however, evidence in Table AI that all is not well with the β s of the size portfolios. They do a fine job on the relation between size and average return, but they do a lousy job on their main task, the relation between β and average return. When the residuals from the regressions of returns on β are grouped using the pre-ranking β s of individual stocks, the average residuals are strongly positive for low- β stocks (0.51% per month for group 1A) and negative for high- β stocks (–1.05% for 10B). Thus the market lines estimated with size-portfolio β s exaggerate the tradeoff of average return for β ; they underestimate average returns on low- β stocks and overestimate average returns on high- β stocks. This pattern in the β -sorted average residuals for individual stocks suggests that (a) there is variation in β across stocks that is lost in the size portfolios, and (b) this variation in β is not rewarded as well as the variation in β that is related to size.

B. Two-Pass Size- β Portfolios

Like Table I, Table AII shows that subdividing size deciles using the (pre-ranking) β s of individual stocks results in strong variation in β that is

Table A1
Average Returns, Post-Ranking β s and Fama-MacBeth Regression Slopes for Size Portfolios of NYSE Stocks: 1941–1990

At the end of each year $t - 1$, stocks are assigned to 12 portfolios using ranked values of ME. Included are all NYSE stocks that have a CRSP price and shares for December of year $t - 1$ and returns for at least 24 of the 60 months ending in December of year $t - 1$ (for pre-ranking β estimates). The middle 8 portfolios cover size deciles 2 to 9. The 4 extreme portfolios (1A, 1B, 10A, and 10B) split the smallest and largest deciles in half. We compute equal-weighted returns on the portfolios for the 12 months of year t using all surviving stocks. Average Return is the time-series average of the monthly portfolio returns for 1941–1990, in percent. Average firms is the average number of stocks in the portfolios each month. The simple β s are estimated by regressing the 1941–1990 sample of post-ranking monthly returns for a size portfolio on the current month's value-weighted NYSE portfolio return. The sum β s are the sum of the slopes from a regression of the post-ranking monthly returns on the current and prior month's VW NYSE returns.

The independent variables in the Fama-MacBeth regressions are defined for each firm at the end of December of each year $t - 1$. Stocks are assigned to the post-ranking (sum) β of the size portfolio they are in at the end of year $t - 1$. ME is price times shares outstanding at the end of year $t - 1$. In the individual-stock regressions, these values of the explanatory variables are matched with CRSP returns for each of the 12 months of year t . The portfolio regressions match the equal-weighted portfolio returns with the equal-weighted averages of β and $\ln(\text{ME})$ for the surviving stocks in each month of year t . Slope is the average of the (600) monthly FM regression slopes and SE is the standard error of the average slope. The residuals from the monthly regressions for year t are grouped into 12 portfolios on the basis of size (ME) or pre-ranking β (estimated with 24 to 60 months of data, as available) at the end of year $t - 1$. The average residuals are the time-series averages of the monthly equal-weighted portfolio residuals, in percent. The average residuals for regressions (1) and (2) (not shown) are quite similar to those for regressions (4) and (5) (shown).

	Portfolios Formed on Size											
	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Ave. return	1.96	1.59	1.44	1.36	1.28	1.24	1.23	1.17	1.15	1.13	0.97	0.93
Ave. firms	57	56	110	107	107	108	111	113	115	118	59	59
Simple β	1.29	1.24	1.21	1.19	1.16	1.13	1.13	1.12	1.09	1.05	1.00	0.98
Standard error	0.07	0.05	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
Sum β	1.60	1.44	1.37	1.32	1.26	1.23	1.19	1.17	1.12	1.06	0.99	0.95
Standard error	0.10	0.06	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01

The Cross-Section of Expected Stock Returns

Table AI—Continued

	Portfolio Regressions			Individual Stock Regressions								
	(1) β	(2) ln(ME)	(3) β and ln(ME)	(4) β	(5) ln(ME)	(6) β and ln(ME)						
Slope	1.45	-0.137	3.05	0.149	1.39	-0.133	0.71	-0.060				
SE	0.47	0.044	1.51	0.115	0.46	0.043	0.81	0.062				
	Average Residuals for Stocks Grouped on Size											
	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	0.17	0.00	-0.04	-0.06	-0.05	-0.04	0.00	-0.03	0.03	0.08	0.01	0.04
Standard error	0.11	0.06	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.05	0.06
Regression (5)	0.30	0.02	-0.05	-0.06	-0.08	-0.07	-0.03	-0.04	0.02	0.08	0.01	0.13
Standard error	0.14	0.07	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.04	0.07
Regression (6)	0.20	0.02	-0.05	-0.07	-0.08	-0.06	-0.01	-0.02	0.04	0.09	0.00	0.06
Standard error	0.10	0.06	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.05	0.05
	Average Residuals for Stocks Grouped on Pre-Ranking β											
	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	0.51	0.61	0.38	0.32	0.16	0.12	0.03	-0.10	-0.27	-0.31	-0.66	-1.05
Standard error	0.21	0.19	0.13	0.08	0.04	0.03	0.04	0.05	0.09	0.11	0.18	0.23
Regression (5)	-0.10	0.00	0.02	0.09	0.05	0.07	0.05	0.00	-0.03	-0.01	-0.11	-0.33
Standard error	0.11	0.10	0.07	0.05	0.04	0.03	0.03	0.04	0.05	0.07	0.10	0.13
Regression (6)	0.09	0.25	0.13	0.19	0.11	0.14	0.09	0.01	-0.11	-0.12	-0.38	-0.70
Standard error	0.41	0.37	0.24	0.14	0.07	0.04	0.04	0.09	0.16	0.21	0.34	0.43

Table AII
Properties of Portfolios Formed on Size and Pre-Ranking β : NYSE Stocks Sorted by ME (Down) then Pre-Ranking β (Across): 1941-1990

At the end of year $t - 1$, the NYSE stocks on CRSP are assigned to 10 size (ME) portfolios. Each size decile is subdivided into 10 β portfolios using pre-ranking β s of individual stocks, estimated with 24 to 60 monthly returns (as available) ending in December of year $t - 1$. The equal-weighted monthly returns on the resulting 100 portfolios are then calculated for year t . The average returns are the time-series averages of the monthly returns, in percent. The post-ranking β s use the full 1941-1990 sample of post-ranking returns for each portfolio. The pre- and post-ranking β s are the sum of the slopes from a regression of monthly returns on the current and prior month's NYSE value-weighted market return. The average size for a portfolio is the time-series average of each month's average value of $\ln(\text{ME})$ for stocks in the portfolio. ME is denominated in millions of dollars. There are, on average, about 10 stocks in each size- β portfolio each month. The All column shows parameter values for equal-weighted size-decile (ME) portfolios. The All rows show parameter values for equal-weighted portfolios of the stocks in each β group.

	All	Low- β	β -2	β -3	β -4	β -5	β -6	β -7	β -8	β -9	High- β
Panel A: Average Monthly Return (in Percent)											
All		1.22	1.30	1.32	1.35	1.36	1.34	1.29	1.34	1.14	1.10
Small-ME	1.78	1.74	1.76	2.08	1.91	1.92	1.72	1.77	1.91	1.56	1.46
ME-2	1.44	1.41	1.35	1.33	1.61	1.72	1.59	1.40	1.62	1.24	1.11
ME-3	1.36	1.21	1.40	1.22	1.47	1.34	1.51	1.33	1.57	1.33	1.21
ME-4	1.28	1.26	1.29	1.19	1.27	1.51	1.30	1.19	1.56	1.18	1.00
ME-5	1.24	1.22	1.30	1.28	1.33	1.21	1.37	1.41	1.31	0.92	1.06
ME-6	1.23	1.21	1.32	1.37	1.09	1.34	1.10	1.40	1.21	1.22	1.08
ME-7	1.17	1.08	1.23	1.37	1.27	1.19	1.34	1.10	1.11	0.87	1.17
ME-8	1.15	1.06	1.18	1.26	1.25	1.26	1.17	1.16	1.05	1.08	1.04
ME-9	1.13	0.99	1.13	1.00	1.24	1.28	1.31	1.15	1.11	1.09	1.05
Large-ME	0.95	0.99	1.01	1.12	1.01	0.89	0.95	0.95	1.00	0.90	0.68

The Cross-Section of Expected Stock Returns

Table AII—Continued

All	Low- β	β -2	β -3	β -4	β -5	β -6	β -7	β -8	β -9	High- β
Panel B: Post-Ranking β										
All	0.76	0.95	1.05	1.14	1.22	1.26	1.34	1.38	1.49	1.69
Small-ME	1.52	1.40	1.31	1.50	1.46	1.50	1.69	1.60	1.75	1.92
ME-2	1.37	1.09	1.12	1.24	1.39	1.42	1.48	1.60	1.69	1.91
ME-3	1.32	0.88	0.96	1.19	1.33	1.40	1.43	1.56	1.64	1.74
ME-4	1.26	0.69	0.95	1.15	1.24	1.29	1.46	1.43	1.64	1.83
ME-5	1.23	0.70	1.04	1.10	1.22	1.32	1.34	1.41	1.56	1.72
ME-6	1.19	0.68	1.04	1.13	1.20	1.20	1.35	1.36	1.48	1.70
ME-7	1.17	0.67	0.88	0.95	1.14	1.18	1.27	1.32	1.44	1.68
ME-8	1.12	0.64	0.83	0.99	1.14	1.14	1.21	1.26	1.39	1.58
ME-9	1.06	0.68	0.81	0.96	1.06	1.11	1.18	1.22	1.25	1.46
Large-ME	0.97	0.65	0.90	0.91	0.97	1.01	1.01	1.07	1.12	1.38
Panel C: Average Size (ln(ME))										
All	4.39	4.89	4.40	4.40	4.39	4.40	4.38	4.37	4.37	4.34
Small-ME	1.93	2.04	2.00	1.96	1.92	1.92	1.91	1.90	1.87	1.80
ME-2	2.80	2.81	2.79	2.83	2.80	2.79	2.80	2.80	2.79	2.79
ME-3	3.27	3.28	3.28	3.27	3.27	3.28	3.29	3.27	3.27	3.26
ME-4	3.67	3.67	3.67	3.68	3.68	3.67	3.68	3.66	3.67	3.67
ME-5	4.06	4.07	4.05	4.06	4.07	4.06	4.05	4.05	4.06	4.06
ME-6	4.45	4.45	4.44	4.44	4.45	4.45	4.45	4.44	4.45	4.45
ME-7	4.87	4.86	4.86	4.87	4.87	4.88	4.87	4.87	4.85	4.87
ME-8	5.36	5.38	5.38	5.35	5.36	5.37	5.37	5.36	5.35	5.34
ME-9	5.98	5.96	5.98	6.00	5.98	5.98	5.97	5.95	5.96	5.96
Large-ME	7.12	7.10	7.16	7.17	7.20	7.29	7.14	7.09	7.04	6.83

independent of size. The β sort of a size decile always produces portfolios with similar average $\ln(\text{ME})$ but much different (post-ranking) β s. Table AII also shows, however, that investors are not compensated for the variation in β that is independent of size. Despite the wide range of β s in each size decile, average returns show no tendency to increase with β . AII

The FM regressions in Table AIII formalize the roles of size and β in NYSE average returns for 1941–1990. The regressions of returns on β alone show that using the β s of the portfolios formed on size and β , rather than size alone, causes the average slope on β to fall from about 1.4% per month (Table AI) to about 0.23% (about 1 standard error from 0). Thus, allowing for variation in β that is unrelated to size flattens the relation between average return and β , to the point where it is indistinguishable from no relation at all.

The flatter market lines in Table AIII succeed, however, in erasing the negative relation between β and average residuals observed in the regressions of returns on β alone in Table AI. Thus, forming portfolios on size and β (Table AIII) produces a better description of the simple relation between average return and β than forming portfolios on size alone (Table AI). This improved description of the relation between average return and β is evidence that the β estimates for the two-pass size- β portfolios capture variation in true β s that is missed when portfolios are formed on size alone.

Unfortunately, the flatter market lines in Table AIII have a cost, the emergence of a residual size effect. Grouped on the basis of ME for individual stocks, the average residuals from the univariate regressions of returns on the β s of the 100 size- β portfolios are strongly positive for small stocks and negative for large stocks (0.60% per month for the smallest ME group, 1A, and -0.27% for the largest, 10B). Thus, when we allow for variation in β that is independent of size, the resulting β s leave a large size effect in average returns. This residual size effect is much like that observed by Banz (1981) with the β s of portfolios formed on size and β .

The correlation between size and β is -0.98 for portfolios formed on size alone. The independent variation in β obtained with the second-pass sort on β lowers the correlation to -0.50 . The lower correlation means that bivariate regressions of returns on β and $\ln(\text{ME})$ are more likely to distinguish true size effects from true β effects in average returns.

The bivariate regressions (Table AIII) that use the β s of the size- β portfolios are more bad news for β . The average slopes for $\ln(\text{ME})$ are close to the values in the univariate size regressions, and almost 4 standard errors from 0, but the average slopes for β are negative and less than 1 standard error from 0. The message from the bivariate regressions is that there is a strong relation between size and average return. But like the regressions in Table AIII that explain average returns with β alone, the bivariate regressions say that there is no reliable relation between β and average returns when the tests use β s that are not close substitutes for size. These uncomfortable SLB results for NYSE stocks for 1941–1990 are much like those for NYSE, AMEX, and NASDAQ stocks for 1963–1990 in Table III.

C. Subperiod Diagnostics

Our results for 1941–1990 seem to contradict the evidence in Black, Jensen, and Scholes (BJS) (1972) and Fama and MacBeth (FM) (1973) that there is a reliable positive relation between average return and β . The β s in BJS and FM are from portfolios formed on β alone, and the market proxy is the NYSE equal-weighted portfolio. We use the β s of portfolios formed on size and β , and our market is the value-weighted NYSE portfolio. We can report, however, that our inference that there isn't much relation between β and average return is unchanged when (a) the market proxy is the NYSE EW portfolio, (b) portfolios are formed on just (pre-ranking) β s, or (c) the order of forming the size- β portfolios is changed from size then β to β then size.

A more important difference between our results and the earlier studies is the sample periods. The tests in BJS and FM end in the 1960s. Table AIV shows that when we split the 50-year 1941–1990 period in half, the univariate FM regressions of returns on β produce an average slope for 1941–1965 (0.50% per month, $t = 1.82$) more like that of the earlier studies. In contrast, the average slope on β for 1966–1990 is close to 0 (-0.02 , $t = 0.06$).

But Table AIV also shows that drawing a distinction between the results for 1941–1965 and 1966–1990 is misleading. The stronger tradeoff of average return for β in the simple regressions for 1941–1965 is due to the first 10 years, 1941–1950. This is the only period in Table AIV that produces an average premium for β (1.26% per month) that is both positive and more than 2 standard errors from 0. Conversely, the weak relation between β and average return for 1966–1990 is largely due to 1981–1990. The strong negative average slope in the univariate regressions of returns on β for 1981–1990 (-1.01 , $t = -2.10$) offsets a positive slope for 1971–1980 (0.82, $t = 1.27$).

The subperiod variation in the average slopes from the FM regressions of returns on β alone seems moot, however, given the evidence in Table AIV that adding size always kills any positive tradeoff of average return for β in the subperiods. Adding size to the regressions for 1941–1965 causes the average slope for β to drop from 0.50 ($t = 1.82$) to 0.07 ($t = 0.28$). In contrast, the average slope on size in the bivariate regressions (-0.16 , $t = -2.97$) is close to its value (-0.17 , $t = -2.88$) in the regressions of returns on $\ln(\text{ME})$ alone. Similar comments hold for 1941–1950. In short, any evidence of a positive average premium for β in the subperiods seems to be a size effect in disguise.

D. Can the SLB Model Be Saved?

Before concluding that β has no explanatory power, it is appropriate to consider other explanations for our results. One possibility is that the variation in β produced by the β sorts of size deciles in just sampling error. If so, it is not surprising that the variation in β within a size decile is unrelated to average return, or that size dominates β in bivariate tests. The standard errors of the β s suggest, however, that this explanation cannot save the SLB

Table AIII
Average Slopes, Their Standard Errors (SE), and Average Residuals from Monthly FM Regressions for Individual NYSE Stocks and for Portfolios Formed on Size and Pre-Ranking β : 1941 - 1990

Stocks are assigned the post-ranking β of the size- β portfolio they are in at the end of year $t - 1$ (Table AII). $\ln(\text{ME})$ is the natural log of price times shares outstanding at the end of year $t - 1$. In the individual-stock regressions, these values of the explanatory variables are matched with CRSP returns for each of the 12 months in year t . The portfolio regressions match the equal-weighted portfolio returns for the size- β portfolios (Table AII) with the equal-weighted averages of β and $\ln(\text{ME})$ for the surviving stocks in each month of year t . Slope is the time-series average of the monthly regression slopes from 1941-1990 (600 months); SE is the time-series standard error of the average slope.

The residuals from the monthly regressions in year t are grouped into 12 portfolios on the basis of size or pre-ranking β (estimated with 24 to 60 months of returns, as available) as of the end of year $t - 1$. The average residuals are the time-series averages of the monthly equal-weighted averages of the residuals in percent. The average residuals (not shown) from the FM regressions (1) to (3) that use the returns on the 100 size- β portfolios as the dependent variable are always within 0.01 of those from the regressions for individual stock returns. This is not surprising given that the correlation between the time-series of 1941-1990 monthly FM slopes on β or $\ln(\text{ME})$ for the comparable portfolio and individual stock regressions is always greater than 0.99.

	Portfolio Regressions			Individual Stock Regressions								
	(1) β	(2) $\ln(\text{ME})$	(3) β and $\ln(\text{ME})$	(4) β	(5) $\ln(\text{ME})$	(6) β and $\ln(\text{ME})$	7	8	9	10A	10B	
Slope	0.22	-0.128	-0.13	-0.143	0.24	-0.133	-0.14	-0.147				
SE	0.24	0.043	0.21	0.039	0.23	0.043	0.21	0.039				
Average Residuals for Stocks Grouped on Size												
	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	0.60	0.26	0.13	0.06	-0.01	-0.03	-0.03	-0.03	-0.09	-0.10	-0.11	-0.25
Standard error	0.21	0.10	0.06	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.06
Regression (5)	0.30	0.02	-0.05	-0.06	-0.08	-0.07	-0.03	-0.04	0.02	0.08	0.01	0.13
Standard error	0.14	0.07	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.04	0.07
Regression (6)	0.31	0.02	-0.05	-0.06	-0.09	-0.07	-0.03	-0.04	0.02	0.08	0.01	0.13
Standard error	0.14	0.07	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.04	0.07

Table AIII—Continued

	Portfolio Regressions			Individual Stock Regressions								
	(1) β	(2) $\ln(\text{ME})$	(3) β and $\ln(\text{ME})$	(4) β	(5) $\ln(\text{ME})$	(6) β and $\ln(\text{ME})$						
	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	-0.08	0.03	-0.01	0.08	0.04	0.08	0.04	0.02	-0.03	0.02	-0.11	-0.32
Standard error	0.07	0.05	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.06	0.07
Regression (5)	-0.10	0.00	0.02	0.09	0.05	0.07	0.05	0.00	-0.03	-0.01	-0.11	-0.33
Standard error	0.11	0.10	0.07	0.05	0.04	0.03	0.03	0.04	0.05	0.07	0.10	0.13
Regression (6)	-0.17	-0.07	-0.02	0.07	0.04	0.06	0.05	0.03	0.00	0.04	-0.04	-0.23
Standard error	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.07

Average Residuals for Stocks Grouped on Pre-Ranking β

Table AIV
Subperiod Average Returns on the NYSE Value-Weighted and Equal-Weighted Portfolios and Average Values of the Intercepts and Slopes for the FM Cross-Sectional Regressions of Individual Stock Returns on β and Size ($\ln(ME)$)

Mean is the average VW or EW return or an average slope from the monthly cross-sectional regressions of individual stock returns on β and/or $\ln(ME)$. Std is the standard deviation of the time-series of returns or slopes, and $t(Mn)$ is Mean over its time-series standard error. The average slopes (not shown) from the FM regressions that use the returns on the 100 size- β portfolios of Table AII as the dependent variable are quite close to those for individual stock returns. (The correlation between the 1941-1990 month-by-month slopes on β or $\ln(ME)$ for the comparable portfolio and individual stock regressions is always greater than 0.99.)

Variable	1941-1990 (600 Mos.)			1941-1965 (300 Mos.)			1966-1990 (300 Mos.)		
	Mean	Std	$t(Mn)$	Mean	Std	$t(Mn)$	Mean	Std	$t(Mn)$
	NYSE Value-Weighted (VW) and Equal-Weighted (EW) Portfolio Returns								
VW	0.93	4.15	5.49	1.10	3.58	5.30	0.76	4.64	2.85
EW	1.12	5.10	5.37	1.33	4.42	5.18	0.91	5.70	2.77
a	0.98	3.93	6.11	0.84	3.18	4.56	1.13	4.57	4.26
b ₁	0.24	5.52	1.07	0.50	4.75	1.82	-0.02	6.19	-0.06
a	1.70	8.24	5.04	1.88	6.43	5.06	1.51	9.72	2.69
b ₂	-0.13	1.06	-3.07	-0.17	1.01	-2.88	-0.10	1.11	-1.54
a	1.97	6.16	7.84	1.80	4.77	6.52	2.14	7.29	5.09
b ₁	-0.14	5.05	-0.66	0.07	4.15	0.28	-0.34	5.80	-1.01
b ₂	-0.15	0.96	-3.75	-0.16	0.94	-2.97	-0.13	0.99	-2.34

Panel A

$$R_{i,t} = a + b_{1,t}\beta_{i,t} + e_{i,t}$$

$$R_{i,t} = a + b_{2,t}\ln(ME_{i,t}) + e_{i,t}$$

Table AIV—Continued

Return	1941–1950		1951–1960		1961–1970		1971–1980		1981–1990	
	Mean	t(Mn)	Mean	t(Mn)	Mean	t(Mn)	Mean	t(Mn)	Mean	t(Mn)
	Panel B:									
	NYSE Value-Weighted (VW) and Equal-Weighted (EW) Portfolio Returns									
VW	1.05	2.88	1.18	3.95	0.66	1.84	0.72	1.67	1.04	2.40
EW	1.59	3.16	1.13	3.76	0.88	1.96	1.04	1.82	0.95	2.01
a	0.24	0.66	1.41	6.36	0.64	1.94	0.27	0.62	2.35	5.99
b ₁	1.26	2.20	-0.19	-0.63	0.32	0.72	0.82	1.27	-1.01	-2.10
	$R_{it} = a + b_1 \beta_{it} + e_{it}$									
a	2.63	3.47	1.08	2.73	1.78	2.50	2.18	2.03	0.82	1.20
b ₂	-0.37	-2.90	0.03	0.53	-0.17	-2.19	-0.20	-1.57	0.04	0.57
	$R_{it} = a + b_2 \ln(ME_{it}) + e_{it}$									
a	2.14	3.93	1.38	4.03	2.01	4.16	1.50	2.12	2.84	4.25
b ₁	0.34	0.75	-0.17	-0.53	-0.11	-0.27	0.41	0.75	-1.14	-2.16
b ₂	-0.34	-2.92	0.01	0.20	-0.18	-2.89	-0.16	-1.50	-0.07	-0.84

model. The standard errors for portfolios formed on size and β are only slightly larger (0.02 to 0.11) than those for portfolios formed on size alone (0.01 to 0.10, Table AI). And the range of the post-ranking β s within a size decile is always large relative to the standard errors of the β s.

Another possibility is that the proportionality condition (1) for the variation through time in true β s, that justifies the use of full-period post-ranking β s in the FM tests, does not work well for portfolios formed on size and β . If this is a problem, post-ranking β s for the size- β portfolios should not be highly correlated across subperiods. The correlation between the half-period (1941–1965 and 1966–1990) β s of the size- β portfolios is 0.91, which we take to be good evidence that the full-period β estimates for these portfolios are informative about true β s. We can also report that using 5-year β s (pre- or post-ranking) in the FM regressions does not change our negative conclusions about the role of β in average returns, as long as portfolios are formed on β as well as size, or on β alone.

Any attempt to salvage the simple positive relation between β and average return predicted by the SLB model runs into three damaging facts, clear in Table AII. (a) Forming portfolios on size and pre-ranking β s produces a wide range of post-ranking β s in every size decile. (b) The post-ranking β s closely reproduce (in deciles 2 to 10 they exactly reproduce) the ordering of the pre-ranking β s used to form the β -sorted portfolios. It seems safe to conclude that the increasing pattern of the post-ranking β s in every size decile captures the ordering of the true β s. (c) Contrary to the SLB model, the β sorts do not produce a similar ordering of average returns. Within the rows (size deciles) of the average return matrix in Table AII, the high- β portfolios have average returns that are close to or less than the low- β portfolios.

But the most damaging evidence against the SLB model comes from the univariate regressions of returns on β in Table AIII. They say that when the tests allow for variation in β that is unrelated to size, the relation between β and average return for 1941–1990 is weak, perhaps nonexistent, even when β is the only explanatory variable. We are forced to conclude that the SLB model does not describe the last 50 years of average stock returns.

REFERENCES

- Alford, Andrew, Jennifer J. Jones, and Mark E. Zmijewski, 1992, Extensions and violations of the statutory SEC Form 10-K filing date, Unpublished manuscript, University of Chicago, Chicago, IL.
- Ball, Ray, 1978, Anomalies in relationships between securities' yields and yield-surrogates, *Journal of Financial Economics* 6, 103–126.
- Banz, Rolf W., 1981, The relationship between return and market value of common stocks, *Journal of Financial Economics* 9, 3–18.
- Basu, Sanjoy, 1983, The relationship between earnings yield, market value, and return for NYSE common stocks: Further evidence, *Journal of Financial Economics* 12, 129–156.
- Bhandari, Laxmi Chand, 1988, Debt/Equity ratio and expected common stock returns: Empirical evidence, *Journal of Finance* 43, 507–528.
- Black, Fischer, 1972, Capital market equilibrium with restricted borrowing, *Journal of Business* 45, 444–455.

- , Michael C. Jensen, and Myron Scholes, 1972, The capital asset pricing model: some empirical tests, in M. Jensen, ed.: *Studies in the Theory of Capital Markets* (Praeger).
- Chan, Louis K., Yasushi Hamao, and Josef Lakonishok, 1991, Fundamentals and stock returns in Japan, *Journal of Finance* 46, 1739-1789
- Chan, K. C. and Nai-fu Chen, 1988, An unconditional asset-pricing test and the role of firm size as an instrumental variable for risk, *Journal of Finance* 43, 309-325.
- , and Nai-fu Chen, 1991, Structural and return characteristics of small and large firms, *Journal of Finance* 46, 1467-1484.
- , Nai-fu Chen, and David A. Hsieh, 1985, An exploratory investigation of the firm size effect, *Journal of Financial Economics* 14, 451-471.
- Chen, Nai-fu, Richard Roll, and Stephen A. Ross, 1986, Economic forces and the stock market, *Journal of Business* 56, 383-403.
- DeBondt, Werner F. M., and Richard H. Thaler, 1985, Does the stock market overreact, *Journal of Finance* 40, 557-581.
- Dimson, Elroy, 1979, Risk measurement when shares are subject to infrequent trading, *Journal of Financial Economics* 7, 197-226.
- Fama, Eugene F., 1976, *Foundations of Finance* (Basic Books, New York).
- , and James MacBeth, 1973, Risk, return and equilibrium: Empirical tests, *Journal of Political Economy* 81, 607-636.
- Fowler, David J. and C. Harvey Rorke, 1983, Risk measurement when shares are subject to infrequent trading: Comment, *Journal of Financial Economics* 12, 279-283.
- Jaffe, Jeffrey, Donald B. Keim, and Randolph Westerfield, 1989, Earnings yields, market values, and stock returns, *Journal of Finance* 44, 135-148.
- Keim, Donald B., 1983, Size-related anomalies and stock return seasonality, *Journal of Financial Economics* 12, 13-32.
- , 1988, Stock market regularities: A synthesis of the evidence and explanations, in Elroy Dimson, ed.: *Stock Market Anomalies* (Cambridge University Press, Cambridge).
- Lakonishok, Josef, and Alan C. Shapiro, 1986, Systematic risk, total risk and size as determinants of stock market returns, *Journal of Banking and Finance* 10, 115-132.
- Lintner, John, 1965, The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets, *Review of Economics and Statistics* 47, 13-37.
- Markowitz, Harry, 1959, *Portfolio Selection: Efficient Diversification of Investments* (Wiley, New York).
- Merton, Robert C., 1973, An intertemporal capital asset pricing model, *Econometrica* 41, 867-887.
- Reinganum, Marc R., 1981, A new empirical perspective on the CAPM, *Journal of Financial and Quantitative Analysis* 16, 439-462.
- Roll, Richard, 1983, Was ist Das? The turn-of-the-year effect and the return premia of small firms, *Journal of Portfolio Management* 9, 18-28.
- Rosenberg, Barr, Kenneth Reid, and Ronald Lanstein, 1985, Persuasive evidence of market inefficiency, *Journal of Portfolio Management* 11, 9-17.
- Ross, Stephen A., 1976, The arbitrage theory of capital asset pricing, *Journal of Economic Theory* 13, 341-360.
- Sharpe, William F., 1964, Capital asset prices: a theory of market equilibrium under conditions of risk, *Journal of Finance* 19, 425-442.
- Stambaugh, Robert F., 1982, On the exclusion of assets from tests of the two-parameter model: A sensitivity analysis, *Journal of Financial Economics* 10, 237-268.
- Stattman, Dennis, 1980, Book values and stock returns, *The Chicago MBA: A Journal of Selected Papers* 4, 25-45.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: James H. Vander Weide

5. CC – Reference: Vander Weide Testimony. Please provide an electronic copy of Schedules of Dr. James H. Vander Weide in Microsoft Excel, with all data and equations left intact.

Response:

Please see the attached Excel file.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: James H. Vander Weide

6. CC – Reference: Vander Weide Testimony. Please provide:
- a. Microsoft Excel copies of all data, tables, charts, source documents, regression results and statistical tests, and work papers used in the development and preparation of the Schedules of the testimony and appendices of Dr. James H. Vander Weide; and
 - b. An index with files names and/or page or tab numbers associated with the materials provided in response to part (a), above. For the Microsoft Excel copies of the data, work papers, regressions, and statistical tests, please keep all formulas intact.

Response:

Please see response to Item 4 and Item 5 of this same data request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **James H. Vander Weide**

7. CC – Reference: Vander Weide Testimony. With respect to page 20, lines 4-23, and Appendix 2, please provide copies of all theoretical and empirical studies known to Dr. Vander Weide which compare and contrast the quarterly and annual DCF models.

Response:

Dr. Vander Weide's use of the quarterly DCF model is based on the theoretical discussion contained in Appendix 2 of his direct testimony. Although Dr. Vander Weide does not rely on any other studies that compare quarterly and annual DCF models, he is aware of several articles that discuss the use of quarterly versus annual DCF models. Please see the attached articles.

THE FINANCIAL REVIEW VOL. 25 NO. 4 NOVEMBER 1990 PP. 651-657

An N-Stage, Fractional Period, Quarterly Dividend Discount Model

*Robert Brooks and Billy Helms**

Abstract

This paper develops a dividend discount model that will allow as many growth stages as desired. The model is directly applicable to most common stocks in that quarterly dividends are assumed and you need not be on a dividend payment date. The equation is easily programmed into a computer and is computationally very fast. The Newton-Rhapson algorithm is suggested as a means for estimating the required rate of return.

Introduction

The development of dividend discount models (DDMs) beyond the constant growth model has been limited to the two- and three-stage models. The two-stage model was developed by Malkiel [13], and the three-stage model was developed by Molodovsky [14]. The primary reason for not going further than three stages has been the difficulty of estimating the appropriate parameters. (See, for example, Elton and Gruber [5].) Another reason for limiting the development of the DDMs to three or fewer stages is the computational difficulty. The literature related to DDMs is vast. A brief summary includes [1, 3, 6-10, 15, 16].

The purpose of this paper is to provide a simple analytical equation that can handle as many stages as the analyst will brave to estimate. Thus, the analyst can decide the limits with regard to the number of stages rather than being constrained by the model. Also, the model presented here is directly applicable to actual stock price data as it assumes quarterly dividends and fractional periods.

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The Model

The N -stage model presented is based on the assumption that the stages are of the Malkiel type [13] and not of the Molodovsky type [14]. That is, within each stage, dividends grow at a constant rate. The N -stage model is also based on the assumption that dividends are adjusted once a year with the first adjustment beginning h quarters from now, and quarterly compounding as opposed to annual compounding is assumed.

If dividends are paid quarterly, it is imperative that quarterly compounding be used in any model. Therefore, if annual rate k is used, the appropriate rate on a quarterly basis is

$$r = (1 + k)^{1/4} - 1.$$

The errors associated with using $k/4$ instead of r are well documented by Chew and Clayton [2], Horvath [11], and Lindley, Helms, and Haddad [12]. That is, if k is indeed the annual rate of return, large errors result from not using a model that assumes quarterly compounding.

The N -stage, fractional period, quarterly dividend discount model is as follows: (The derivation of this model is available from the authors upon request.)

$$P = Q(DF^{-f}) \left[T + (DF^h)Z \left\{ \sum_{m=1}^N \left(\pi \sum_{j=1}^{m-1} B_j^{n_j} \right) S_m \right\} \right] \quad (1)$$

where

$$Q = \text{last quarterly dividend paid,}$$

$$DF = 1/(1 + k)^{1/4} \text{ (the discount factor for one quarter)}$$

where

$$k = \text{required rate of return (annual),}$$

$$f = \text{fraction of current quarter elapsed since last dividend payment,}$$

$$T = (1 - DF^h)/[(1 + k)^{1/4} - 1],$$

$$h = \text{number of quarters until a change in dividend policy,}$$

$$N = \text{number of growth stages,}$$

$$Z = DF^{-3} + DF^{-2} + DF^{-1} + 1,$$

$$B_j = (1 + g_j)DF^4 = (1 + g_j)/(1 + k),$$

$$\begin{aligned}
 g_j &= \text{growth rate of dividends for stage } j, j = 1, \\
 &\quad 2, \dots, N, \\
 n_j &= \text{number of years for the } j\text{th stage growth rate,} \\
 S_N &= (1 + g_N)/(k - g_N) \\
 S_m &= n_m I(B_m = 1.0) + NE_m I(B_m \neq 1.0) \text{ for } m = \\
 &\quad 1, 2, \dots, N - 1,
 \end{aligned}$$

where $I(\cdot)$ is an indicator function—if the statement within the parentheses is true, then $I = 1.0$, otherwise $I = 0.0$,

$$NE_m = (1 - B_m^{n_m}) (1 + g_m)/(k - g_m).$$

Also, assume $\prod_{j=1}^0 B_j^{n_j} = 1.0$.

If $N = 0$, then dividends will remain constant, and thus $h = \infty$ and $DF^h = 0.0$. Therefore, equation (1) reduces to

$$\begin{aligned}
 P &= Q(DF^{-f})T \\
 P &= Q(DF^{-f})/[(1 + k)^{1/4} - 1].
 \end{aligned}$$

If $N = 1$, then $k > g_1$ (or else the price is infinite), and $n_1 = \infty$; thus $S_1 = NE_1 = (1 + g_1)/(k - g_1)$ and equation (1) reduces to

$$\begin{aligned}
 P &= Q(DF^{-f}) [T + (DF^h) Z(S_1)] \\
 P &= Q(DF^{-f}) [T + (DF^h)Z(1 + g_1)/(k - g_1)].
 \end{aligned}$$

If $N = 2$, then $k > g_2$, thus $S_2 = (1 + g_2)/(k - g_2)$ and

$$P = Q(DF^{-f}) [T + (DF^h)Z\{S_1 + B_1 (1 + g_2)/(k - g_2)\}].$$

For $N > 2$, then $k > g_N$, and equation (1) can be applied.

The Required Rate of Return

When implementing this model, the current market price is easily observable. In this section, we sketch the methodology for estimating k (the annual required rate of return) using the standard Newton-Rhapson method. The Newton-Rhapson method (see Ellis [4]) is an iterative technique that is easily programmable. The following is an outline of the Newton-Rhapson approach to solving for k in our model.

Step 1. Estimate $k_i = (4Q/P) + g_N$, which is the first estimate of k where $i = 1$ (i is a counter). Any rea-

sonable estimate of k is acceptable. This estimate assures $k_1 > g_N$.

Step 2. Calculate $P(k_i)$, the price based on k_i .

Step 3. Calculate

$$\left. \frac{dP}{dk} \right|_{k=k_i} \equiv P'(k_i),$$

which is the first derivative of price with respect to k and evaluated at k_i . The appropriate derivative is given in equation (2) below.

Step 4. Calculate $k_{i+1} = k_i - ((P(k_i) - P)/P'(k_i))$, an improved estimate of k .

Step 5. Test to make sure $k_{i+1} > 0$ for $N = 0$ and $k_{i+1} > g_N$ for $N > 0$, a rational estimate of k . The Newton-Rhapon method works well as long as the price based on k_{i+1} is not too small or too large.

Step 6. Calculate $P(k_{i+1})$, the price based on k_{i+1} and test accuracy of k_{i+1} to compute the observed price. That is,

IF $(|P(k_{i+1}) - P| < \epsilon)$ THEN
 $k = k_{i+1}$ and quit for acceptable ϵ (say $\epsilon = 0.001$).

Step 7. If k_{i+1} is not precise enough, then set $i = i + 1$ and go to Step 3.

The only problem in implementing the Newton-Rhapon method is solving for $P'(k_i)$.

$$\begin{aligned} \frac{dP}{dk} = & [Qf(DF^{4-f})/4] \left[T + (DF^h)Z \left\{ \sum_{m=1}^N \left(\pi B_j^j \right) S_m \right\} \right] \\ & + Q(DF^{-f}) \left[\{h(DF^{h+4})[(1+k)^{1/4} - 1] \right. \\ & \left. - (1 - DF^h)(1+k)^{-3/4}\} / (4[(1+k)^{1/4} - 1]^2) \right] \\ & - \left(h(DF^{h+4})/4 \right) Z \sum_{m=1}^N \left(\pi B_j^j \right) S_m \\ & - (DF^h)(DF^6/4)(3DF^2 + 2DF + 1) \sum_{m=1}^N \left(\pi B_j^j \right) S_m \end{aligned} \quad (2)$$

$$\begin{aligned}
 & + (DF^n)Z \left(\sum_{m-1}^N \left(\frac{\pi}{j-1} (1+g)^{n_j} \right) \right) \\
 & \times \left\{ - \left(\sum_{i=1}^{m-1} n_i \right) (1+k)^{-\left(\sum_{i=1}^{m-1} n_i \right)-1} S_m \right. \\
 & + (1+k)^{-\left(\sum_{i=1}^{m-1} n_i \right)-1} \left[OI(B_m = 1.0) \right. \\
 & + (1+g_m) \left\{ n_m B_m^{n_m-1} (1+k)^{-2}(k-g) \right. \\
 & \left. \left. \left. \left. - (1-B_m^{n_m}) \right\} / (k-g_m)^2 I(B_m \neq 1.0) \right] \right\} \right\}.
 \end{aligned}$$

Example

Consider the case of Commonwealth Edison Company (CWE), which supplies electricity to an estimated population of 8,000,000 in an 11,525 square mile area in northern Illinois. Approximately 33 percent of sales are derived from the Chicago area with 77 percent of the power generated by nuclear and 22 percent by coal. (See *Valueline*, April 21, 1989). CWE has paid quarterly dividends of \$0.75 since 1982. The closing price on June 9, 1989, was 37 5/8, the last dividend was paid on May 1, 1989, and the next dividend will be paid on August 1, 1989. (See *Barron's*, June 12, 1989.)

Three estimates are made of the required rate of return to illustrate the advantage of the dividend discount model presented here: (a) annual dividends, no fractional periods; (b) quarterly dividends, no fractional periods; and (c) quarterly dividends, fractional periods (the model presented here).

Case 1: No Growth. If we assume that CWE will only be able to maintain their \$3.00 per year dividend and thus no growth in dividends is anticipated, the required rates of return are as follows: (Note that $f = 39/92$, $Q = \$0.75$, and $P = \$37 \frac{5}{8}$.)

Compound Period	Fractional Periods?	Required Rate of Return
(a) Annual	No	7.973%
(b) Quarterly	No	8.215%
(c) Quarterly	Yes	8.287%

Thus, we see that by assuming annual periods and ignoring the fractional period, we produce an estimate of the required rate of return that is off by 31.4 basis points $((8.287 - 7.973) \times 100)$. Assuming quarterly compounding but ignoring the fractional period produced an error of 7.2 basis points $((8.287 - 8.215) \times 100)$. This error is not that great partly due to being only 39 days through the quarter.

Case 2: Constant Growth. If we assume that CWE's dividends will grow at 3 percent per year ($g = 0.03$) after year end ($h = 2$), then we have the following required rates of return:

Compound Period	Fractional Periods?	Required Rate of Return
(a) Annual	No	11.213%
(b) Quarterly	No	11.429%
(c) Quarterly	Yes	11.530%

Again, we see the downward bias of ignoring quarterly compounding as well as fractional periods. The exact downward bias of more complex cases is a function of the parameters selected.

Summary

The dividend discount model developed incorporates quarterly dividends, fractional periods, and N stages. This model alleviates the need to use a one- or two-stage model to estimate future dividends for the more realistic cases where expected changes in dividend policy do not occur at convenient annual time periods and dividend policy is expected to change more than once or twice. The N -stage, fractional period, quarterly dividend discount model presented provides greater precision and more flexibility than previous models. In addition, an efficient procedure is given for estimating the required rate of return.

References

- [1] Bing, Ralph. "Survey of Practitioners' Stock Evaluation Methods." *Financial Analysts Journal* 27(May/June 1971):55-69.

- [2] Chew, I. Keong, and Ronnie J. Clayton. "Bond Valuation: A Clarification." *The Financial Review* 18(May 1983):234–236.
- [3] Donnelly, Barbara. "The Dividend Discount Model Comes into Its Own." *Institutional Investor* 19 (March 1985):77–82.
- [4] Ellis, Robert, and Denny Gulick. *Calculus with Analytic Geometry*. 2d ed. New York: Harcourt Brace Jovanovich, 1982.
- [5] Elton, Edwin J., and Martin J. Gruber. *Modern Portfolio Theory and Investment Analysis*. 2d ed. New York: Wiley, 1984.
- [6] Ferguson, Robert. "A Monograph for Valuing Growth Stocks." *Financial Analysts Journal* 17(May/June 1961):29–34.
- [7] Fuller, Russell J., and Chi-Cheng Hsia. "A Simplified Common Stock Valuation Model." *Financial Analysts Journal* 40(September/October 1984):49–56.
- [8] Gordon, Myron. *The Investment, Financing and Valuation of the Corporation*. Homewood, IL: Richard D. Irwin, 1962.
- [9] Gordon, M. J., and E. Shapiro. "Capital Equipment Analysis: The Required Rate of Profit." *Management Science* 3(October 1956):104–106.
- [10] Hayes, Douglas A., C.F.A. "Some Reflections on Techniques for Appraising Growth Rates." *Financial Analysts Journal* 20(July/August 1964):96–101.
- [11] Horvath, Philip A. "A Pedagogic Note on Intra-Period Compounding and Discounting." *The Financial Review* 20(February 1985):116–118.
- [12] Lindley, James T., Billy P. Helms, and Mahmoud Haddad. "A Measurement of Errors in Intra-Period Compounding and Bond Valuation." *The Financial Review* 22(February 1987):33–51.
- [13] Malkiel, Burton G. "Equity Yields, Growth and Structure of Share Prices." *American Economic Review* 53(December 1963):1004–1031.
- [14] Molodovsky, Nicholas, C. May, and S. Chottinger. "Common Stock Valuation." *Financial Analysts Journal* 20(March/April 1965):104–123.
- [15] Walter, James E. "Dividend Policy and Common Stock Prices." *Journal of Finance* 11(March 1956):29–42.
- [16] Williams, John Burr. *The Theory of Investment Value*. Amsterdam, Netherlands: North-Holland, 1938.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: James H. Vander Weide

8. CC – Reference: Vander Weide Testimony. With respect to pages 21-22, please:
- a. Indicate why Dr. Vander Weide has chosen to use the earnings forecasts reported by I/B/E/S and not another service like Zack's or First Call?;
 - b. Indicate how does the analysts coverage of I/B/E/S compare to the analysts coverage of the other major earnings reporting services?;
 - c. Indicate if I/B/E/S earnings forecasts available free of charge on the Internet and, if so, where?; and
 - d. Provide copies of all empirical studies which compare the accuracy of I/B/E/S EPS growth rates with those of investor information services.

Response:

- a. Dr. Vander Weide chooses to use the I/B/E/S earnings growth forecasts rather than those of another service such as Zack's or First Call because: (1) he has performed statistical studies that demonstrate that the I/B/E/S growth estimates are highly correlated with companies' stock prices; (2) in his experience over the past thirty years, the I/B/E/S forecasts have superior availability of historical coverage, estimates for more companies, and more contributing analysts' estimates; (3) the I/B/E/S data have been more widely studied in the academic literature; and (4) I/B/E/S also provides other financial information such as revenue/sales, net income, pre-tax profit, and operating profit. Dr. Vander Weide does not include Zack's or First Call in addition to I/B/E/S because there is considerable overlap in the analysts contributing to the I/B/E/S, Zack's, and First Call surveys, and because I/B/E/S and First Call are now owned by the same firm, Thomson Financial; thus, I/B/E/S and First Call long-term growth estimates should be identical.
- b. The I/B/E/S data represents a consensus of annual and long-term forecasts collected from 60 data researchers and 9,000 contributing analysts, and the I/B/E/S data contain historical earnings estimates for more than 35,000 companies worldwide, with U.S. data beginning in 1976 and international data beginning in 1987. Detailed First Call consensus estimate data is confined to U.S. and Canadian companies. Dr. Vander Weide has been unable to find current information from Zack's on the numbers of analysts' providing long-term earnings growth forecasts.

- c. Yahoo Finance reports earnings estimates free of charge that it lists as being obtained from Thomson Financial. However, these data do not include detailed information relating to whether the estimates are means or medians; the time the estimates are supplied; the number of or identity of the analysts contributing to the estimates; the value of each analyst's estimate; or the standard deviation or coefficient of variation among the estimates. Analysts' long-term earnings growth estimates are also available at Reuters.com. Reuters identifies the estimates as being mean estimates, provides the number of analysts contributing to the estimate, and the high and low estimates.

- d. Dr. Vander Weide is not aware of studies that compare the accuracy of I/B/E/S growth estimates to the accuracy of other growth estimates. For the purpose of using the DCF model to estimate the cost of equity, the relevant question is whether the growth forecasts are used by investors, not the ex post accuracy of particular growth forecasts. Dr. Vander Weide's studies indicate that the I/B/E/S growth forecasts are more highly correlated with stock prices than other growth forecasts such as historical growth rates and retention growth rates. This evidence is consistent with the conclusion that investors use the I/B/E/S growth forecasts in making stock buy and sell decisions and that the I/B/E/S growth forecasts are incorporated in stock prices.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **James H. Vander Weide**

9. CC – Reference: Vander Weide Testimony. With respect to page 23, please provide a copy of the article written by Dr. Vander Weide from the *Journal of Portfolio Management* (Spring 1988).

Response:

The requested study is provided in response to Item 4 of this same data request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: James H. Vander Weide

10. CC – Reference: Vander Weide Testimony. With respect to page 19, lines 14-18, please provide:
- a. A copy of the updated study by State Street Financial Advisers; and
 - b. Copies of the work papers, data, and analyses used in the updated study. Please provide the data in Microsoft Excel format, with all data and formulas in intact.

Response:

- a. Please refer to the response to Item 4 of this same data request.
- b. Because the study was conducted by State Street Financial Advisers, Dr. Vander Weide does not have copies of the workpapers, data, and analyses used in the updated study in Excel format.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **James H. Vander Weide/Scott Rungren**

11. CC – Reference: Vander Weide Testimony. With respect to page 25, line 3 to page 27, line 2, please provide:
- a. The total flotation costs (direct expenses as well as market pressure costs) of the equity issued by American Water Works on behalf of KAWC over the past five years and/or expected equity issuance in the test year; and
 - b. The flotation costs allocated to KAWC for each of the past and projected equity issues.

Response:

- a. American Water Works issues equity on behalf of its entire enterprise, not on behalf of its subsidiaries. However, American Water Works will not recover its flotation costs if its flotation costs are not included in determining its subsidiaries' revenue requirements. With regard to American Water Works' flotation costs, Dr. Vander Weide has the following information contained in the Company's 2012 Form 10-K. American Water Works indicates that it issued shares on June 10, 2009, but did not make any common stock offerings in 2010 or 2011. With regard to the 2009 share offering, the Company states:

Pursuant to a public offering in June 2009, the Company completed the sale of 14.5 million shares of common stock at \$17.25 per share. The proceeds from the offering, net of underwriters' discounts and expenses payable by the Company, were \$242.3 million. The proceeds from the offering were used to repay short-term debt. At the same time, RWE continued to divest of its investment in the Company. During the remainder of 2009, RWE continued to divest of its remaining investment in the Company through the sale of additional shares and as a result in November 2009, RWE became fully divested of our common stock. The Company did not receive any proceeds from the RWE sales of the Company's shares. [American Waterworks 2012 Form 10-K, p. 68.]

Based on the above information, the out-of-pocket expenses are 3.13 percent for the stock offering completed in 2009 (see following table).

No. of shares issued by the Company	14,500,000
Price per share	\$ 17.25
Gross proceeds	\$ 250,125,000
Net proceeds	\$ 242,301,000
Out-of-pocket expense	\$ 7,824,000
Expense as % of net proceeds	3.13%

As discussed in Dr. Vander Weide's testimony at pp. 25 - 26, the five percent flotation cost allowance he has included in his cost of equity studies includes both out-of-pocket expenses and an allowance for market pressure. Dr. Vander Weide also provides a review of the literature pertaining to flotation costs in Appendix 3 of his direct testimony. This literature indicates that market pressure generally has been estimated to be in the range of two to three percent of the amount of issuance.

- b. Flotation costs for equity issuances are not allocated to operating subsidiaries.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: James H. Vander Weide

12. CC – Reference: Vander Weide Testimony. With respect to page 27, lines 9-17, please indicate:
- a. The water companies eliminated by each of the screens applied to the companies listed in the Value Line Investment Survey; and
 - b. The reason each was eliminated.

Response:

- a. Artesian Resources, Connecticut Water, and York Water were eliminated.
- b. These were eliminated because there were no long-term earnings growth forecasts available for the companies. All other Value Line water companies were included in the cost of equity studies.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **James H. Vander Weide**

13. CC – Reference: Vander Weide Testimony. With respect to page 28 and Schedule 1, please provide copies of the I/B/E/S analyst research reports for the water companies in the proxy group.

Response:

Dr. Vander Weide obtains the I/B/E/S forecasts electronically from Thomson Reuters, and the I/B/E/S growth forecasts shown in his schedules are the growth forecasts that he has obtained. I/B/E/S Thomson Reuters does not provide and Dr. Vander Weide does not have analyst research reports for the companies in the proxy group.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: James H. Vander Weide

14. CC – Reference: Vander Weide Testimony. With respect to page 30, lines 11-21, please indicate:
- a. All companies considered as part of the natural gas industry groups;
 - b. What gas companies were eliminated by each of the screens applied to the companies listed in the Value Line Investment Survey; and
 - c. The reason each was eliminated.

Response:

- a. For the purpose of estimating the cost of equity for KAWC, Dr. Vander Weide considered all the companies in the Value Line natural gas utilities group.
- b. Laclede Group and UGI Corp. were eliminated because there were no I/B/E/S long-term growth estimates for these companies. New Jersey Resources and Southwest Gas were not included in the final average LDC result due to their outlier results equal to 6.4% and 6.9%, respectively. These results are less than one hundred basis points above the forecasted cost of debt of 6.6%.
- c. Please see response to part b.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **James H. Vander Weide**

15. CC – Reference: Vander Weide Testimony. With respect to page 31 and Schedule 2, please provide copies of the I/B/E/S analyst research reports for the gas companies in the proxy group.

Response:

Please see response to Item 13 of this same data request.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: James H. Vander Weide

16. CC – Reference: Vander Weide Testimony. With respect to pages 32-35 and Schedule 3, please provide:
- a. Copies of all source documents, data, and work papers used in Dr. Vander Weide's ex ante risk premium study;
 - b. An electronic version (Microsoft Excel) of the data used in the analysis, with all data and equations left intact; and
 - c. Copies of the regressions run on the data.

Response:

- a. Please see responses to Item 4 and Item 5 of this same data request.
- b. Please see response to Item 5 of this same data request.
- c. Please see response to Item 5 of this same data request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **James H. Vander Weide**

17. CC – Reference: Vander Weide Testimony. With respect to pages 35-41 Schedules 4, 5, and 6, please provide:
- a. Copies of all source documents, data, and work papers used in Dr. Vander Weide's ex post risk premium study using the S&P 500;
 - b. The sources of the data items employed;
 - c. An electronic version (Microsoft Excel) of the data used in the analysis, with all data and equations left intact; and
 - d. Copies of the regressions run on the data.

Response:

- a. Please see responses to Item 4 and Item 5 of this same data request.
- b. Please see the notes on Schedules 4, 5, and 6 and the responses to Item 4 and Item 5 of this same data request.
- c. Please see response to Item 5 of this same data request.
- d. Please see response to Item 5 of this same data request.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: James H. Vander Weide

18. CC – Reference: Vander Weide Testimony. With respect to pages 41-48, and Schedules 7 and 8, please provide:
- a. All source documents, data, and work papers used in Dr. Vander Weide's CAPM study;
 - b. The sources of the data items employed; and
 - c. An electronic version (Microsoft Excel) of the data used in the analysis, with all data and equations left intact.

Response:

- a. Please see responses to Item 4 and Item 5 of this same data request.
- b. Please see the notes on Schedules 7 and 8 and the responses to Item 4 and Item 5 of this same data request.
- c. Please see response to Item 5 of this same data request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **James H. Vander Weide**

19. CC – Reference: Vander Weide Testimony. Please provide an electronic version (Microsoft Excel) of the following Schedules, with all data and equations left intact: Schedules 1, 2, 3, 4 ,5, 6, 7, and 8.

Response:

Please see response Item 5 of this same data request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren**

20. CC – Reference: Application. Please provide electronic (Microsoft Excel) copies of all rate of return, capital structure, and debt cost rate schedules with all data and formulas intact.

Response:

Please see the Company's responses to Item 1 and Item 2 of this same data request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren**

21. CC – Reference: Cost of Capital. Please provide copies of all presentations made to rating agencies and/or investment firms by American Water Works Company (“AWWC”) and/or Kentucky American Water Company (“KAWC”) between January 1, 2012 and the present.

Response:

Please refer to the attachment for the presentations made to the rating agencies, which contains confidential information. The Company has filed a Petition for Confidential Treatment contemporaneously with these responses. The Company will provide copies of the requested documents to all parties in this case upon execution of an appropriate confidentiality agreement.

Regarding the presentations made to the investment firms by AWWC, please see the link and/or instructions below to access the Investor Relations website page on the American Water external website.

Link: <http://ir.amwater.com/phoenix.zhtml?c=215126&p=irol-presentations>

Instructions:

- From Internet, type www.amwater.com into the URL bar.
- Choose “Investor Relations” from the toolbar
- Choose “News and Events” from the side toolbar
- Choose “Archives” for a listing of all Investor Presentations

This entire attachment is confidential and has been provided under seal pursuant to a Petition for Confidential Treatment.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren**

22. CC – Reference: Cost of Capital. Please provide copies of all prospectuses for any security issuances by AWWC and/or KAWC since January 1, 2011.

Response:

American Water Capital Corp. (AWCC) has had two debt issuances since January 1, 2011. The prospectuses for those issuances are attached. Neither AWWC nor KAWC have issued any securities in the capital markets during that time.

Prospectus Supplement to Prospectus dated May 4, 2012

\$300,000,000



AMERICAN WATER

American Water Capital Corp.

4.300% Senior Notes due 2042

This is an offering by American Water Capital Corp., which we refer to as AWCC or the issuer, of its 4.300% Senior Notes due 2042, which we refer to as the notes. We will pay interest on the notes on June 1 and December 1 of each year, beginning on June 1, 2013. The notes will mature on December 1, 2042. However, the issuer may at any time and from time to time redeem all or a portion of the notes at the redemption prices set forth in this prospectus supplement under “Description of the Notes—Optional Redemption by the Issuer.” Notes will be issued only in registered form and in denominations of \$1,000 and integral multiples of \$1,000 in excess thereof.

The notes will be unsecured, will rank equally with the issuer’s existing and future senior debt and will rank senior to the issuer’s future subordinated debt. The notes will rank effectively junior in right of payment to all of the issuer’s future secured indebtedness to the extent of the value of the assets securing such indebtedness. The notes will have the benefit of a support agreement from American Water Works Company, Inc., the issuer’s parent company. The notes will not be guaranteed by any of American Water Works Company, Inc.’s subsidiaries. The issuer is a finance subsidiary whose activities are limited to borrowing funds through the issuance of debt securities and lending those funds under loan agreements with our operating subsidiaries.

Investing in these notes involves risks. See “Risk Factors” beginning on page S-9 of this prospectus supplement and Item 1A, “Risk Factors”, of our most recent Annual Report on Form 10-K to read about factors you should consider before buying these notes.

Neither the Securities and Exchange Commission, any state securities commission nor any other regulatory body has approved or disapproved of these securities or passed on the accuracy or adequacy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

	<u>Price to Public</u>	<u>Underwriting Discount</u>	<u>Proceeds to Us</u>
Per Note	99.818%	0.875%	98.943%
Total	\$299,454,000	\$2,625,000	\$296,829,000

(1) Plus accrued interest from December 17, 2012, if settlement occurs after that date.

The underwriters expect to deliver the notes in book-entry form only through the facilities of The Depository Trust Company on or about December 17, 2012.

Joint Book-Running Managers

BofA Merrill Lynch

Goldman, Sachs & Co.

RBS

Co-Managers

PNC Capital Markets US Bancorp TD Securities BNY Mellon Capital Markets, LLC

Prospectus Supplement dated December 12, 2012.

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ABOUT THIS PROSPECTUS SUPPLEMENT

All references in this prospectus supplement to “American Water,” “we,” “our,” “us” and the “Company” refer to American Water Works Company, Inc. and its consolidated subsidiaries unless the context otherwise requires. All references in this prospectus supplement to the “support provider” refer to American Water Works Company, Inc. unless the context otherwise requires. All references in this prospectus supplement to “AWCC” or the “issuer” refer to American Water Capital Corp. unless the context otherwise requires.

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and certain other matters. The second part, the accompanying prospectus, gives more general information about us and our securities. Generally, when we refer to “this prospectus,” we are referring to both parts of this document combined. To the extent information in this prospectus supplement conflicts with information in the accompanying prospectus, you should rely on the information in this prospectus supplement. You should rely only on the information contained in, or incorporated by reference in, this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with different information.

We are not making an offer or sale of these securities in any jurisdiction where the offer or sale is not permitted. The information which appears in this prospectus supplement, the accompanying prospectus and any document incorporated by reference is accurate as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since the date of such information.

“American Water” and its logos are our trademarks. Other service marks, trademarks and trade names referred to in this prospectus are the property of their respective owners.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission, which we refer to as the SEC. These SEC filings are available to the public over the Internet at the SEC’s website at <http://www.sec.gov> and our website at <http://www.amwater.com>. You may also read and copy any document we file with the SEC at the SEC’s public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room.

We have filed a registration statement on Form S-3 under the Securities Act of 1933, as amended, which we refer to as the Securities Act, with the SEC to register the securities offered by this prospectus supplement. This prospectus does not contain all the information contained in the registration statement because certain parts of the registration statement are omitted in accordance with the rules and regulations of the SEC. The registration statement and the documents filed as exhibits to the registration statement are available for inspection and copying as described above.

We are “incorporating by reference” into this prospectus specific documents that we file with the SEC, which means that we can disclose important information to you by referring you to those documents that are considered part of this prospectus. Information that we file subsequently with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below, and any future documents that we file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act, until the termination of the offering of the securities covered by this prospectus has been completed. This prospectus is part of a registration statement filed with the SEC.

We are “incorporating by reference” into this prospectus the following documents filed with the SEC (excluding any portions of such documents that have been “furnished” but not “filed” for purposes of the Exchange Act):

<u>Filings</u>	<u>Period Covered or Date Filed</u>
Annual Report on Form 10-K (including the portions of our Proxy Statement on Schedule 14A filed on March 30, 2012 that are incorporated by reference therein)	Year ended December 31, 2011
Quarterly Reports on Form 10-Q	Quarters ended March 31, 2012, June 30, 2012 and September 30, 2012
Current Reports on Form 8-K	Filed on March 30, 2012, May 17, 2012 and October 31, 2012

We will provide to each person, including any beneficial owner, to whom this prospectus supplement and the accompanying prospectus are delivered, upon written or oral request and without charge, a copy of the documents referred to above that we have incorporated in this prospectus by reference. You can request copies of such documents if you call or write us at the following address or telephone number: American Water Works Company, Inc., 1025 Laurel Oak Road, Voorhees, New Jersey 08043, Attention: General Counsel, (856) 346-8200.

This prospectus supplement and the accompanying prospectus contain summaries of certain agreements that we have filed as exhibits to various SEC filings, as well as certain agreements that we will enter into in connection with this offering. The descriptions of these agreements contained in this prospectus or information incorporated by reference herein do not purport to be complete and are subject to, or qualified in their entirety by reference to, the definitive agreements. Copies of the definitive agreements will be made available without charge to you by making a written or oral request to us.

You should rely only upon the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus or contained in any free writing prospectus prepared by or on behalf of us. We have not authorized anyone to provide you with different information. You should not assume that the information in this document is accurate as of any date other than that on the front cover of this prospectus.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein, in any other subsequently filed document which also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified and superseded, to constitute a part of this prospectus.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere in this prospectus supplement and the accompanying prospectus. It may not contain all the information that is important to you. You should carefully read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference therein in their entirety before making an investment decision. For the definition of certain terms used in this prospectus supplement and the accompanying prospectus, please refer to the definitions set forth in the section entitled "Glossary."

Our Company

American Water Works Company, Inc. (the "Company"), a Delaware corporation, is the most geographically diversified, as well as the largest publicly traded, United States water and wastewater utility company, as measured by both operating revenue and population served. As a holding company, we conduct substantially all of our business operations through our subsidiaries. Our approximately 7,000 employees provide an estimated 15 million people with drinking water, wastewater and other water-related services in over 30 states and two Canadian provinces.

In 2011, our on-going operations generated \$2,666.2 million in total operating revenue and \$803.1 million in operating income. In 2010, our on-going operations generated \$2,555.0 million in total operating revenue and \$728.1 million in operating income. For the nine months ended September 30, 2012, we generated \$2,196.0 million in total operating revenue, \$758.0 million in operating income and net income of \$302.6 million.

We have two operating segments that are also the Company's two reportable segments: the Regulated Businesses and the Market-Based Operations.

For 2011, our Regulated Businesses segment generated \$2,368.9 million in operating revenue, prior to inter-segment eliminations, which accounted for 88.8% of total consolidated operating revenue. For the same period, our Market-Based Operations segment generated \$327.8 million in operating revenue, prior to inter-segment eliminations, which accounted for 12.3% of total consolidated operating revenue. For the nine months ended September 30, 2012, our Regulated Businesses generated \$1,960.2 million in operating revenue, prior to inter-segment eliminations, which accounted for 89.3% of total consolidated operating revenue. For the same period, our Market-Based Operations generated \$249.3 million in operating revenue, prior to inter-segment eliminations, which accounted for 11.4% of total consolidated operating revenue.

American Water Capital Corp.

Our financing activities, primarily focused on funding construction activities, include the issuance of long-term and short-term debt, primarily through our finance subsidiary, American Water Capital Corp. ("AWCC" or the "issuer"). AWCC loans all of the net proceeds of its long-term debt financings to American Water's Regulated Businesses, as well as to American Water. AWCC also provides liquidity to the Regulated Businesses and American Water through AWCC's committed bank credit facilities and commercial paper program. All of the proceeds of AWCC's long-term debt have been loaned to our Regulated Businesses or American Water and are evidenced by promissory notes issued to AWCC by the Regulated Businesses or American Water, as applicable. As of September 30, 2012, we had a total of \$5,465 million in total debt, including \$3,412 million in long-term debt and \$298 million in commercial paper borrowings at AWCC.

Our Industry

The United States water and wastewater industry has two main sectors: (i) utility ownership, which involves supplying water and wastewater services to consumers; and (ii) general services, which involves providing water and wastewater related services to water and wastewater utilities and other customers on a contract basis.

The utility sector includes investor-owned as well as municipal systems that are owned and operated by local governments or governmental subdivisions. The Environmental Protection Agency (“EPA”) estimates that government-owned systems make up the vast majority of the United States water and wastewater utility segment, accounting for approximately 84% of all United States community water systems and approximately 98% of all United States community wastewater systems. Investor-owned water and wastewater systems account for the remainder of the United States water and wastewater community water systems.

The utility segment is characterized by high barriers to entry, given the capital intensive nature of the industry. Investor-owned water and wastewater utilities also face regulatory approval processes in order to do business, which may involve obtaining relevant operating approvals, including certificates of public convenience and necessity (or similar authorizations), pursuant to which state PUCs grant investor-owned utilities the right to provide service within an authorized service area. The utility segment of the United States water and wastewater industry is highly fragmented, with approximately 52,000 community water systems and approximately 16,000 community wastewater facilities, according to the EPA, and therefore presents opportunities for consolidation. Larger utilities, such as ours, that have greater access to capital are generally more capable of making mandated and other necessary infrastructure upgrades to water and wastewater systems.

Our Strengths

We believe that we are distinguished by the following key competitive strengths:

Market leader with broad national footprint and strong local presence. We are the most geographically diversified, as well as the largest publicly traded, United States water and wastewater utility company, as measured by both operating revenue and population served. Our scale provides us with a competitive advantage in procuring goods and services reliably and economically. Our geographic scope enables us to capitalize effectively on growth opportunities across our service areas, while helping to insulate us from adverse conditions relating to regulatory environments, weather and economic conditions in any one geographic area. Also, our active community involvement supports customer satisfaction.

Regulated Businesses provide financial stability. Our Regulated Businesses provide a high degree of financial stability because (i) high barriers to entry insulate us from competitive pressures, (ii) economic regulation promotes predictability in financial planning and long-term performance through the rate-setting process and (iii) our largely residential customer base promotes consistent operating results.

Experience in securing appropriate rates of return and promoting constructive regulatory frameworks. We seek appropriate rates of return on our investment and a return of our investment and recovery of prudently incurred operating expenses from state PUCs in the form of rate increases, which we refer to as rate relief. We have a strong track record of providing reliable service at cost-effective rates, which has generally allowed us to maintain positive relations with regulators. We have generally been granted rate relief in a timely manner after application.

Growth opportunities with a low risk business profile. We believe we are well positioned to benefit from favorable industry dynamics in the water and wastewater sectors, which provide opportunities for future growth in both our Regulated Businesses and complementary Market-Based Operations.

- We intend to invest capital prudently to enable us to continue to provide essential services to our customers in the water and wastewater utility industry and to municipalities in meeting the capital challenges of making substantial required infrastructure upgrades.
- Our Regulated Businesses provide a large platform on which to grow both organically and through consolidation from among the numerous water and wastewater systems in the United States.
- Our geographic diversity increases our ability to make opportunistic investments in market-based businesses that are complementary to our Regulated Businesses.

Industry leader in water quality, testing and research. We are experts in water quality testing, compliance and treatment and have established and own industry-leading water testing facilities. Our technologically advanced quality control and testing laboratory in Belleville, Illinois is certified in 24 states and Puerto Rico.

Our Strategy

Our goal is to consistently provide customers with safe, high quality drinking water and reliable water and wastewater services. Our business strategies include:

- continuing to invest prudently in regulated water and wastewater infrastructure projects;
- earning an appropriate rate of return on our investments from state PUCs;
- optimizing our business through complementary acquisitions and strategic dispositions of assets that are not complementary to our operations; and
- continuing to pursue public/private partnerships, including O&M and military contracts and services, and other market-based businesses that are complementary to our Regulated Businesses.

Our Executive Offices

We are a corporation incorporated under the laws of Delaware. Our principal executive offices are located at 1025 Laurel Oak Road, Voorhees, NJ 08043. Our telephone number is (856) 346-8200. Our internet address is www.amwater.com. **The information contained on or accessible from our website does not constitute a part of this prospectus and is not incorporated by reference herein.**

The Offering

Issuer	American Water Capital Corp.
Securities Offered	\$300,000,000 aggregate principal amount of 4.300% Senior Notes due 2042.
Maturity Date	The notes will mature on December 1, 2042.
Interest Payment Dates	We will pay interest on the notes on each June 1 and December 1, beginning on June 1, 2013, to the holders of the notes as of the day that is 15 calendar days (whether or not a business day) prior to the relevant interest payment date and, if applicable, upon redemption.
Support Agreement	The notes will have the benefit of a support agreement from American Water, pursuant to which American Water has agreed to pay to any debt investor or lender any principal or interest owed by the issuer to such debt investor or lender that the issuer fails to pay on a timely basis, referred to herein as the support agreement.
Optional Redemption	We may redeem all or a portion of the notes at our option at any time or from time to time. The redemption price for the notes to be redeemed on any redemption date prior to June 1, 2042 will be equal to the greater of (1) 100% of the principal amount of the notes being redeemed on the redemption date; or (2) the sum of the present values of the remaining scheduled payments of principal and interest on the notes being redeemed on that redemption date (not including any portion of any payments of interest accrued to the redemption date) discounted to the redemption date on a semiannual basis at the Adjusted Treasury Rate (as defined below) plus 25 basis points, as determined by the Reference Treasury Dealer (as defined below); plus, in each case, accrued and unpaid interest thereon to the redemption date. The redemption price for the notes to be redeemed on any redemption date on or after June 1, 2042 will be equal to 100% of the principal amount to be redeemed plus any accrued and unpaid interest thereon to the date of redemption.
Ranking	<p>The notes will be the issuer’s unsecured senior obligations and will:</p> <ul style="list-style-type: none"> • rank equal in right of payment to all of the issuer’s existing and future unsecured obligations that are not, by their terms, expressly subordinated in right of payment to the notes; • rank senior in right of payment to all of the issuer’s future obligations that are, by their terms, expressly subordinated in right of payment to the notes; and • rank effectively junior in right of payment to all of the issuer’s future secured indebtedness to the extent of the value of the assets securing such indebtedness. <p>Similarly, the obligations of American Water under the support agreement will be unsecured senior obligations of American Water and will:</p> <ul style="list-style-type: none"> • rank equal in right of payment to all existing and future unsecured obligations of American Water that are not, by their terms, expressly subordinated in right of payment to such obligations;

- rank senior in right of payment to any future obligations of American Water that are, by their terms, expressly subordinated in right of payment to such obligations; and
- rank (i) effectively junior in right of payment to any future secured indebtedness of American Water to the extent of the value of the assets securing such indebtedness and (ii) structurally junior in right of payment to any liabilities of the applicable American Water subsidiaries.

As of September 30, 2012:

- The issuer had \$3,709.9 million of senior indebtedness, including (i) \$3,089.4 million of currently outstanding senior notes, (ii) \$322.6 million of tax-exempt indebtedness, (iii) \$297.9 million of short-term debt and (iv) no subordinated indebtedness;
- American Water had no indebtedness other than its obligations under the support agreement with respect to the issuer’s indebtedness and its borrowings from AWCC; and
- the subsidiaries of American Water (other than the issuer) had approximately \$1,776.7 million of indebtedness and other liabilities.

Certain Covenants The indenture governing the notes contains certain covenants that, among other things, limit our ability to:

- create or assume liens; and
- enter into sale and leaseback transactions.

These limitations are subject to a number of significant exceptions. See “Description of the Notes—Certain Covenants.”

Use of Proceeds We estimate that the proceeds from this offering, net of discounts and expenses, will be approximately \$296.3 million. We intend to use the net proceeds from this offering to finance certain redemptions of long-term debt and to fund the repayment of short-term debt. See “Use of Proceeds”.

Risk Factors Investing in the notes involves risk. See “Risk Factors” beginning on page S-9 of this prospectus supplement and Item 1A, “Risk Factors”, in our most recent Annual Report on Form 10-K for a discussion of factors that you should refer to and carefully consider before deciding to invest in these notes.

Governing Law The indenture and the notes are governed by, and construed in accordance with, the laws of the State of New York.

RISK FACTORS

An investment in the notes involves risks. This prospectus supplement does not describe all of these risks. You should carefully consider the risks described below and the risks described in Item 1A, "Risk Factors," in our most recent Annual Report on Form 10-K, as updated in subsequent filed reports with the SEC, as well as the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision. Our business, financial condition or results of operations could be materially adversely affected by any of these risks.

The issuer's ability to service its debt and our ability to make payments pursuant to our obligations under the support agreement depend on the performance of our operating subsidiaries and their continued ability to make distributions to us or repayments to the issuer. There can be no assurance that we or the issuer will continue to receive such distributions or repayments or, if they are received, that they will be in amounts similar to past distributions or repayments.

The notes are being issued by AWCC, our finance subsidiary. The issuer has no substantial assets, other than our obligations and those of our operating subsidiaries to repay loans made by AWCC. We have entered into a support agreement with the issuer pursuant to which we have agreed to pay to any debt investor or lenders of the issuer any principal or interest amounts owed by the issuer to such debt investor or lender that the issuer fails to pay on a timely basis. Because substantially all of our operations are conducted through our subsidiaries other than the issuer, our ability to fulfill our obligations under the support agreement will be dependent upon our receipt of sufficient cash distributions from our operating subsidiaries. Similarly, the issuer's ability to make interest and principal payments on the notes will be dependent upon its receipt of sufficient payments of principal and interest pursuant to the terms of its loans to us and our operating subsidiaries. The distributions we receive from our operating subsidiaries and the repayments the issuer receives from us and our operating subsidiaries might not be adequate to permit us to make required payments of interest and principal pursuant to the support agreement or the issuer to make required payments under the notes, as applicable, on a timely basis, or at all.

Our obligations under the support agreement are effectively subordinated to all of the obligations of our subsidiaries other than the issuer.

We have signed a support agreement with the issuer. The notes are not guaranteed by any of our subsidiaries and are the obligations only of the issuer and us, by virtue of the support agreement. We are a holding company that derives substantially all of our income from our operating subsidiaries, and the issuer is a financing subsidiary with no material operations of its own, other than making loans to us and our affiliates. Our operating subsidiaries are separate and distinct legal entities and, other than the issuer, have no obligation to make any payments on the notes or to make any funds available for such payment. Therefore, our obligations under the support agreement will be effectively subordinated to all indebtedness and other liabilities, including trade payables, lease commitments and moneys borrowed, incurred or issued by our subsidiaries other than the issuer.

The notes do not restrict our ability to incur additional indebtedness, which could adversely affect our ability to pay our obligations under the notes.

Although the terms of the notes restrict our ability and the ability of our subsidiaries to incur certain liens and to enter into certain sale and leaseback transactions, the incurrence of other indebtedness or other liabilities by any of our subsidiaries is not prohibited in connection with the notes and could adversely affect our ability to pay our obligations on the notes. As of September 30, 2012, total liabilities of our subsidiaries other than the issuer were \$1,776.7 million. As of September 30, 2012, the indebtedness of our subsidiaries other than the issuer, excluding intercompany liabilities and obligations of a type not required to be reflected on a balance sheet in accordance with generally accepted accounting principles, that would effectively have been senior to the notes, was approximately \$1,688.8 million. We anticipate that from time to time our subsidiaries will incur additional debt and other liabilities. Any debt incurred by our subsidiaries other than the issuer will be effectively senior to our obligations under the support agreement.

We have not agreed to any financial covenants in connection with the notes. Consequently, we are not required in connection with the notes to meet any financial tests, such as those that measure our working capital, interest coverage, fixed charge or net worth, in order to maintain compliance with the terms of the notes.

If an active trading market does not develop for the notes you may not be able to resell them.

Currently, there is no public market for the notes. If no active trading market develops, you may not be able to resell the notes at their fair market value or at all.

The liquidity of any market for the notes will depend upon various factors, including:

- the number of holders of the notes;
- the interest of securities dealers in making a market for the notes;
- our financial performance or prospects; and
- the prospects for companies in our industry generally.

Accordingly, we cannot assure you that a market or liquidity will develop for the notes.

FORWARD-LOOKING STATEMENTS

We have made statements under “Risk Factors” and in other sections of this prospectus supplement and in the documents incorporated by reference herein that are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and the Private Securities Litigation Reform Act of 1995. In some cases, these forward-looking statements can be identified by words with prospective meanings such as “intend,” “plan,” “estimate,” “believe,” “anticipate,” “expect,” “predict,” “project,” “forecast,” “outlook,” “future,” “potential,” “continue,” “may,” “can,” “should” and “could” and similar expressions. Forward-looking statements may relate to, among other things, our future financial performance, our growth strategies, our ability to repay debt, our ability to finance current operations and growth initiatives, trends in our industry, regulatory or legal developments or rate adjustments.

Forward-looking statements are predictions based on our current expectations and assumptions regarding future events. They are not guarantees of any outcomes, financial results or levels of performance, and you are cautioned not to place undue reliance upon them. These forward-looking statements are subject to a number of risks and uncertainties, and new risks and uncertainties of which we are not currently aware or which we do not currently perceive may arise in the future from time to time. Should any of these risks or uncertainties materialize, or should any of our expectations or assumptions prove incorrect, then our results may vary materially from those discussed in the forward-looking statements herein and in the documents incorporated by reference herein. Factors that could cause actual results to differ from those discussed in forward-looking statements include, but are not limited to, the factors discussed under “Risk Factors” in this prospectus supplement and Item 1A, “Risk Factors,” in our most recent Annual Report on Form 10-K, as updated or amended in subsequent filed reports with the SEC, and the following factors:

- the decisions of governmental and regulatory bodies, including decisions to raise or lower rates;
- the timeliness of regulatory commissions’ actions concerning rates;
- changes in customer demand for, and patterns of use of, water, such as may result from conservation efforts;
- changes in laws, governmental regulations and policies, including environmental, health and water quality and public utility regulations and policies;
- weather conditions, patterns or events, including drought or abnormally high rainfall;
- our ability to effect significant changes to our business processes and corresponding technology;
- our ability to appropriately maintain current infrastructure and manage expansion of our business;
- our ability to obtain permits and other approvals for projects;
- changes in our capital requirements;
- our ability to control operating expenses and to achieve efficiencies in our operations;
- our ability to obtain adequate and cost-effective supplies of chemicals, electricity, fuel, water and other raw materials that are needed for our operations;
- our ability to successfully acquire and integrate water and wastewater systems that are complementary to our operations and the growth of our business or potentially dispose of assets or lines of business that are not complementary to our operations and the growth of our business;
- cost overruns relating to improvements or the expansion of our operations;
- changes in general economic, business and financial market conditions;
- access to sufficient capital on satisfactory terms;
- fluctuations in interest rates;

- restrictive covenants in or changes to the credit ratings on our current or future debt that could increase our financing costs or affect our ability to borrow, make payments on debt or pay dividends;
- fluctuations in the value of benefit plan assets and liabilities that could increase our cost and funding requirements;
- our ability to utilize our U.S. and state net operating loss carryforwards;
- migration of customers into or out of our service territories;
- difficulty in obtaining insurance at acceptable rates and on acceptable terms and conditions;
- the incurrence of impairment charges;
- labor actions, including work stoppages;
- ability to retain and attract qualified employees; and
- civil disturbance or terrorist threats or acts or public apprehension about future disturbances or terrorist threats or acts.

The risks and uncertainties referenced above are not intended to be exhaustive. See “Risk Factors” beginning on page S-9 of this prospectus supplement and our most recent Annual Report on Form 10-K, including the information in Item 1A, “Risk Factors,” therein, and other documents filed with the SEC for an expanded discussion of the risks and uncertainties described above and additional risks and uncertainties that could cause actual results to differ materially from the forward-looking statements. All forward-looking statements contained in or incorporated by reference in this prospectus are based upon information available to us on the date such statements are made and speak only as of the date of such statements. Except as required by law, we do not have any obligation, and we specifically disclaim any undertaking or intention, to publicly update or revise any forward-looking statement, whether as a result of new information, future events, changed circumstances or otherwise.

INDUSTRY AND MARKET DATA

Unless otherwise indicated, information contained in this prospectus supplement concerning the water and wastewater industry, its segments and related markets and our general expectations concerning such industry and its segments and related markets are based on management estimates. Such estimates are derived from publicly available information released by third-party sources, as well as data from our internal research and on assumptions made by us based on such data and our knowledge of such industry and markets, which we believe to be reasonable. We have estimated the number of people served by our water and wastewater systems (i) by multiplying the number of residential water and wastewater connections by average people per household based on 2010 United States Census data by state (average people per household varies by state but is generally between 2.3 to 3.1 individuals per household); (ii) by adjusting for weather fluctuations, for some other customer classes, including commercial customers, and for bulk water sales and (iii) by reconciling drinking water and wastewater connections to avoid double counting population served where the same user has both drinking water and wastewater service. In some instances, population estimates for our Market-Based Operations are based on either (i) specific population estimates from the client or (ii) population estimates based on the average volume of water processed by the applicable facilities. While we are not aware of any misstatements regarding the industry or similar data presented herein, such data involve risks and uncertainties and are subject to change based on various factors, including those discussed in Item 1A, "Risk Factors," in our most recent Annual Report on Form 10-K for the year ended December 31, 2011 and other documents incorporated by reference in this prospectus supplement.

USE OF PROCEEDS

The issuer estimates that it will receive net proceeds of approximately \$296.3 million from this offering after deducting underwriting discounts and estimated offering expenses.

The issuer intends to use the net proceeds from this offering, in part, to lend funds to American Water's operating subsidiaries, which American Water expects will be used to redeem approximately \$152 million aggregate principal amount of long-term debt issued by such subsidiaries, as follows:

- \$23,015,000 principal amount of 5.05% Pennsylvania private activity bonds due 2029
- \$20,000,000 principal amount of 5.25% New Jersey private activity bonds due 2032
- \$35,000,000 principal amount of 5.125% New Jersey private activity bonds due 2022
- \$5,615,000 principal amount of 5.15% Illinois private activity bonds due 2023
- \$11,700,000 principal amount of 5.00% Illinois private activity bonds due 2028
- \$29,815,000 principal amount of 5.10% Illinois private activity bonds due 2029
- \$5,670,000 principal amount of 5.00% Illinois private activity bonds due 2028
- \$13,720,000 principal amount of 5.25% Illinois private activity bonds due 2027
- \$7,460,000 principal amount of 5.00% Indiana private activity bonds due 2028

The issuer also intends to use the net proceeds from this offering to lend funds to (i) American Water's operating subsidiaries, which American Water expects will be used to make repayments of short-term borrowings of approximately \$128.3 million, and (ii) American Water, which American Water expects will be used to make repayments of short-term borrowings of approximately \$16.0 million. All of the issuer's loans to American Water's operating subsidiaries or American Water will be evidenced by promissory notes having final maturities, interest rates, and interest payment dates that are the same as the final maturity, interest rate and interest payment dates of the notes.

RATIO OF EARNINGS TO FIXED CHARGES

For purposes of calculating the ratio of earnings to fixed charges, earnings consists of income (loss) from continuing operations before income taxes including the effect of allowance for funds used during construction, which we refer to as AFUDC, plus fixed charges. Fixed charges consist of interest expense, amortization of debt issuance costs, dividends on mandatory redeemable preferred shares and a portion of rent expense that management believes is representative of the interest component of rental expense. Fixed charges have not been reduced for the effect of AFUDC.

American Water’s ratio of earnings to fixed charges was less than 1.00x for the years ended December 31, 2007, 2008 and 2009.

American Water’s and the issuer’s ratio of earnings to fixed charges for each of the periods indicated was as follows:

	<u>For the Year Ended December 31,</u>					<u>For the Nine Months Ended September 30, 2012</u>
	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	
American Water						
Ratio of Earnings to Fixed Charges(1)	—	—	—	2.26	2.50	3.16
American Water Capital Corp.						
Ratio of Earnings to Fixed Charges	1.00	1.00	1.00	1.00	1.00	1.00

(1) For the years ended December 31, 2007, 2008 and 2009, earnings were insufficient to cover fixed charges and there were deficiencies of \$238.8 million, \$420.6 million and \$106.3 million, respectively.

DESCRIPTION OF THE NOTES

The following description is a summary of the material provisions of the indenture. It does not restate such agreement in its entirety. We urge you to read the indenture because it, and not this description, defines your rights as holders of the notes. A form of the indenture is filed as an exhibit to the registration statement of which this prospectus forms a part.

The notes will be a separate series of Debt Securities, as described under the heading “Description of AWCC Debt Securities and American Water Support Agreement” in the accompanying prospectus. Please read the following information concerning the notes in conjunction with the statements under “Description of AWCC Debt Securities and American Water Support Agreement” in the accompanying prospectus, which the following information supplements and, in the event of any inconsistencies, supersedes.

Unless the context otherwise requires, solely for purposes of this Description of the Notes, “American Water,” “our,” “us,” “we” or the “Company” refers to American Water Works Company, Inc. and not to any of its subsidiaries.

General

The notes will be issued under the indenture, dated as of December 4, 2009, between the issuer and Wells Fargo Bank, National Association, as indenture trustee, referred to as the indenture.

The aggregate principal amount of the notes is U.S. \$300.0 million.

The notes will have the benefit of a support agreement from us described below.

The notes will be the issuer’s unsecured senior obligations and will:

- rank equal in right of payment to all of the issuer’s existing and future unsecured obligations that are not, by their terms, expressly subordinated in right of payment to the notes;
- rank senior in right of payment to all of the issuer’s future obligations that are, by their terms, expressly subordinated in right of payment to the notes; and
- rank effectively junior in right of payment to all of the issuer’s future secured indebtedness to the extent of the value of the assets securing such indebtedness.

Similarly, our obligations as support provider under the support agreement will be unsecured senior obligations of ours and will:

- rank equal in right of payment to all of our existing and future unsecured obligations that are not, by their terms, expressly subordinated in right of payment to such obligations;
- rank senior in right of payment to any of our future obligations that are, by their terms, expressly subordinated in right of payment to such obligations; and
- rank (i) effectively junior in right of payment to any of our future secured indebtedness to the extent of the value of the assets securing such indebtedness and (ii) structurally junior in right of payment to any liabilities of our subsidiaries.

The notes will not be subject to a sinking fund provision.

The indenture trustee will initially be the security registrar and the paying agent for the notes. Notes initially will be issued in registered global form and will be in denominations of \$1,000 and integral multiples of \$1,000 in excess thereof, without coupons, and may be transferred or exchanged, without service charge but upon

payment of any taxes or other governmental charges payable in connection with the transfer or exchange, at the office described below. Payments on notes issued as a global security will be made to the depository or a successor depository. A beneficial interest in a global note may only be exchanged for a note in certificated form in certain circumstances. See “—Book-Entry, Delivery and Form—Exchanges of Global Notes for Certificated Notes.” Principal and interest with respect to certificated notes will be payable thereon, the transfer of the notes will be registrable and notes will be exchangeable for notes of a like aggregate principal amount in denominations of \$1,000, and integral multiples of \$1,000 in excess thereof, at the office or agency maintained by the issuer for this purpose in The City of New York. The issuer has initially designated the corporate trust office of the indenture trustee as that office. However, at the issuer’s option, payment of interest may be made by check mailed to the address of the holder entitled to payment or by wire transfer to an account appropriately designated by the holder entitled to payment.

The indenture does not limit our ability or the ability of the issuer to issue or incur other unsecured debt or issue preferred stock.

Support Agreement

The issuer’s debt (including the notes) has the benefit of a support agreement, dated June 22, 2000, and amended on July 26, 2000, between the issuer and us; referred to as the support agreement. The support agreement, which, under the circumstances described below, is the functional equivalent of a guarantee, provides, among other things, that:

- we own, and during the term of the support agreement shall continue to own, all of the voting stock of the issuer free and clear of any lien, security interest or other charge or encumbrance;
- we will provide to the issuer, at its request or the request of any lender (including any holder of notes), funds in the form of cash or liquid assets (as equity or, if we and the issuer agree, as a loan subordinated to any and all indebtedness, whether or not that indebtedness is outstanding at the time of the loan) as required if the issuer is unable to make timely payment of interest, principal or premium, if any, on any indebtedness issued by it;
- we will cause the issuer to have at all times a positive tangible net worth (total assets less liabilities less intangible assets), as determined in accordance with generally accepted accounting principles; and
- if the issuer fails or refuses to take timely action to enforce certain rights under the support agreement or if the issuer defaults in the timely payment of interest, principal or premium, if any, owed to a lender (including any holder of notes) when due, that lender may proceed directly against us to enforce such rights or to obtain payment of the defaulted interest, principal or premium, if any, owed to that lender.

No amendment to the support agreement that adversely affects the rights of any lender (including any holder of notes) and no termination of the support agreement will be effective until such time as all indebtedness of the issuer shall have been irrevocably paid in full and all commitments for indebtedness have been terminated, unless the lenders holding all of the aggregate principal amount of debt outstanding and (to the extent not outstanding) committed to consent in writing thereto. Notwithstanding the foregoing sentence, any amendment to the support agreement for the purposes of (i) increasing the minimum net worth as provided in the support agreement, (ii) establishing or increasing a minimum interest coverage ratio, (iii) establishing or reducing a maximum amount of debt leverage, (iv) increasing the aggregate principal amount of debt outstanding whose holders are required to consent to the termination or amendment of the support agreement or (v) any combination of clauses (i), (ii), (iii) and (iv) of this sentence, shall be effective without the consent of any lender (including any holder of notes). In addition, nothing in the prior two sentences shall derogate from, or override, any provision in an instrument, indenture, agreement or other document pursuant to which indebtedness is or will be issued that requires the written consent of the holders of a specified amount or percentage of that indebtedness to consent to an amendment or termination of the support agreement.

Principal, Maturity and Interest

The initial aggregate principal amount of the notes is U.S. \$300.0 million. The notes mature on December 1, 2042.

The notes will bear interest at 4.300% per annum from December 17, 2012. We will pay interest on the notes on each June 1 and December 1, beginning on June 1, 2013, to the holders of the notes as of the day that is 15 calendar days (whether or not a business day) prior to the relevant interest payment date and, if applicable, upon redemption.

The amount of interest payable on the notes for any period will be computed on the basis of a 360-day year consisting of twelve 30-day months. In the event that any date on which interest is payable on the notes is not a business day, then payment of the interest payable on such date will be made on the next day that is a business day (and without any interest or other payment in respect of any such delay).

Optional Redemption by the Issuer

We may redeem all or a portion of the notes at our option at any time or from time to time. The redemption price for the notes to be redeemed on any redemption date prior to June 1, 2042 will be equal to the greater of the following amounts:

- 100% of the principal amount of the notes being redeemed on the redemption date; or
- the sum of the present values of the remaining scheduled payments of principal and interest on the notes being redeemed on that redemption date (not including any portion of any payments of interest accrued to the redemption date) discounted to the redemption date on a semiannual basis at the Adjusted Treasury Rate (as defined below) plus 25 basis points, as determined by the Reference Treasury Dealer (as defined below);

plus, in each case, accrued and unpaid interest thereon to the redemption date. The redemption price for the notes to be redeemed on any redemption date on or after June 1, 2042 will be equal to 100% of the principal amount to be redeemed plus any accrued and unpaid interest thereon to the date of redemption; provided, however, that interest payable on notes with respect to an interest payment date that falls on or before a redemption date shall be made to the holder of such notes on the record date related to such interest payment date. The redemption price will be calculated on the basis of a 360-day year consisting of twelve 30-day months.

On and after the date of redemption, interest will cease to accrue on the notes or portion of the notes redeemed. However, interest will continue to accrue if we default in the payment of the amount due upon redemption.

We will mail notice of any redemption at least 30 days but not more than 60 days before the redemption date to each registered holder of the notes to be redeemed, and, if less than all notes are to be redeemed, the particular notes to be redeemed will be selected by the trustee on a pro rata basis, by lot or in such manner as it shall deem appropriate and fair in accordance with DTC procedures. Unless we default in payment of the redemption price, on and after the redemption date, interest will cease to accrue on the notes or portions thereof called for redemption.

Any notice of redemption at our option may state that such redemption will be conditional upon receipt by the trustee, on or prior to the redemption date, of money sufficient to pay the principal of and premium, if any, and interest on, such notes and that if such money has not been so received, such notice will be of no force and effect and we will not be required to redeem such notes.

“*Adjusted Treasury Rate*” means, with respect to any redemption date, the rate per annum equal to the semiannual equivalent yield to maturity of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for such redemption date.

“*Comparable Treasury Issue*” means the U.S. Treasury security selected by the Reference Treasury Dealer as having a maturity comparable to the remaining term of the notes to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term of such notes.

“*Comparable Treasury Price*” means, with respect to any redemption date, (A) the average of the Reference Treasury Dealer Quotations for such redemption date, after excluding the highest and lowest of such Reference Treasury Dealer Quotations, or (B) if we obtain fewer than four such Reference Treasury Dealer Quotations, the average of all such quotations, or (C) if only one Reference Treasury Dealer Quotation is received, such quotation.

“*Reference Treasury Dealer*” means (A) Merrill Lynch, Pierce, Fenner & Smith Incorporated, Goldman, Sachs & Co., RBS Securities Inc. or their respective affiliates which are primary U.S. Government securities dealers in the United States (each, a “Primary Treasury Dealer”), and their respective successors; provided, however, that if any of the foregoing shall cease to be a Primary Treasury Dealer, we will substitute therefor another Primary Treasury Dealer; and (B) any other Primary Treasury Dealer(s) selected by us.

“*Reference Treasury Dealer Quotations*” means, with respect to each Reference Treasury Dealer and any redemption date, the average, as determined by us, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to us by such Reference Treasury Dealer at 5:00 p.m. (New York City time) on the third business day preceding such redemption date.

Events of Default

Each of the following is an event of default:

- (1) default for 30 days in the payment when due of interest on the notes;
- (2) default in payment when due of the principal of, or premium, if any, on the notes;
- (3) failure by the issuer or us to comply with the provisions described under the caption “—Certain Covenants—Merger, Consolidation or Sale of Assets”;
- (4) failure by the issuer or us to comply for 60 days after receipt of notice with any of the other agreements in the indenture or the support agreement; provided, however, that except with respect to defaults under or breaches of the covenant described under “—Certain Covenants—Restrictions on Liens,” holders of the notes will be deemed to have agreed to an extension of such 60-day period to 120 days so long as corrective action is initiated by the issuer or us within such 60-day period unless such corrective action is no longer being diligently pursued;
- (5) default under any mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any indebtedness for money borrowed by the issuer or us (or the payment of which is guaranteed by the issuer or us), if that default is caused by a failure to pay principal at its stated maturity after giving effect to any applicable grace period, or results in the acceleration of such indebtedness prior to its stated maturity and, in each case, the principal amount of any such indebtedness, together with the principal amount of any other indebtedness under which there has been a payment default after stated maturity or the maturity of which has been so accelerated, aggregates \$100 million or more, referred to as the cross acceleration provision;
- (6) failure by the issuer or us to pay final judgments aggregating (to the extent not paid or insured) in excess of \$100 million, which judgments are not paid, within 60 days after the entry thereof, bonded, discharged or stayed pending appeal, or are not discharged within 60 days after the expiration of such stay; referred to as the judgment default provision;
- (7) except as permitted by the indenture the support agreement shall cease for any reason to be in full force and effect or we, or any person acting on our behalf, shall deny or disaffirm our obligations under the support agreement; and

- (8) certain events of bankruptcy or insolvency described in the indenture with respect to the issuer or us, referred to as the bankruptcy provision.

However, a default under clause (4) will not constitute an event of default until the trustee or the holders of 25% in aggregate principal amount of the outstanding notes notify the issuer of the default and the issuer does not cure the default within 60 days after receipt of that notice. In the case of an event of default arising from certain events of bankruptcy or insolvency, with respect to the issuer or us, all outstanding notes will become due and payable immediately without further action or notice. If any other event of default occurs and is continuing, the trustee or the holders of at least 25% in aggregate principal amount of the then outstanding notes may declare all the notes to be due and payable immediately. Unless as otherwise provided herein, after any such acceleration, but before a judgment or decree based on acceleration is obtained by the trustee, the registered holders of a majority in aggregate principal amount of outstanding notes may, under certain circumstances, rescind and annul such acceleration and waive such event of default if all events of default, other than the nonpayment of accelerated principal, premium or interest have been cured or waived as provided in the indenture.

Holders of the notes may not enforce the indenture or the notes except as provided in the indenture. Subject to certain limitations holders of a majority in principal amount of the then outstanding notes may direct the trustee in its exercise of any trust or power. The trustee may withhold from holders of the notes notice of any continuing default if it determines that withholding notice is in their interest, except a default relating to the payment of principal or interest.

Subject to the provisions of the indenture relating to the duties of the trustee, in case an event of default shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request or direction of any of the holders of the notes, unless such holders shall have offered to the trustee reasonable indemnity or security against any loss, liability or expense. Subject to such provisions for indemnification of the trustee, the holders of a majority in aggregate principal amount of the notes then outstanding will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the notes.

The holders of a majority in aggregate principal amount of the notes then outstanding, by notice to the trustee, may, on behalf of the holders of all of the notes, waive any existing default and its consequences under the indenture except a continuing default in the payment of interest on, or the principal of, the notes (other than the non-payment of principal of or interest on the notes that became due solely because of the acceleration of the notes).

The issuer is required to deliver to the trustee within 90 days after the end of each fiscal year a statement regarding compliance with the indenture during that fiscal year. Promptly (and in any event within five business days) upon a responsible officer of the issuer becoming aware of any default or event of default, the issuer is required to deliver to the trustee a statement specifying that default.

“Responsible officer” means the chief executive officer, chief operating officer, general counsel, any senior financial officer and any other officer of the issuer with responsibility for the administration of the indenture.

“Senior financial officer” means the chief financial officer, principal accounting officer, treasurer or controller of the issuer.

Selection and Notice

If less than all of the notes are to be redeemed in connection with any redemption, the trustee will select notes (or portions of notes) for redemption as follows:

- (a) if the notes are listed on any national securities exchange, in compliance with the requirements of the principal national securities exchange on which such notes are listed; or

- (b) if the notes are not listed on any national securities exchange, on a pro rata basis, by lot or by such method as the trustee deems fair and appropriate.

No notes of \$1,000 or less can be redeemed in part. Notices of redemption will be mailed by first class mail at least 30 but not more than 60 days before the redemption date to each holder of notes to be redeemed at its registered address, except that redemption notices may be mailed more than 60 days prior to a redemption date if the notice is issued in connection with a satisfaction and discharge of the indenture. Notices of redemption may not be conditional.

If any note is to be redeemed in part only, the notice of redemption that relates to that note will state the portion of the principal amount of that note that is to be redeemed. A new note in principal amount equal to the unredeemed portion of the original note will be issued in the name of the holder of notes upon cancellation of the original note. Notes called for redemption become due on the date fixed for redemption. On and after the redemption date, interest will cease to accrue on notes or portions of them called for redemption.

Certain Covenants

The indenture contains, among others, the following covenants:

Restrictions on Liens

The issuer will not, and will not allow us, as the support provider, or any of our subsidiaries to, create, incur, issue or assume any liens on our or their respective property to secure debt where the debt secured by those liens would exceed an amount equal to 15% of our consolidated tangible total assets, as defined below (calculated to exclude debt secured by Permitted Liens). This restriction does not apply to permitted liens, which is defined to include:

- (a) liens existing, or created pursuant to the terms of agreements existing, on the date of the indenture;
- (b) liens consisting of (i) pledges or deposits in the ordinary course of business to secure obligations under workmen's compensation laws or similar legislation, (ii) deposits in the ordinary course of business to secure or in lieu of surety, appeal or customs bonds to which the issuer, we or any of our subsidiaries is a party, (iii) liens created by or resulting from any litigation or legal proceeding which is currently being contested in good faith by appropriate proceedings diligently conducted, (iv) pledges or deposits in the ordinary course of business to secure performance in connection with bids, tenders or contracts (other than contracts for the payment of money) or (v) materialmen's, mechanics', carriers', workmen's repairmen's or other like liens incurred in the ordinary course of business for sums not yet due or currently being contested in good faith by appropriate proceedings diligently conducted;
- (c) liens created to secure tax-exempt debt, in connection with the financing or refinancing of the purchase, lease or construction of properties;
- (d) any lien on any asset of any person existing at the time the person is merged or consolidated with or into, or such asset is acquired by the issuer, us or any of our subsidiaries and not created in contemplation of such event;
- (e) liens created to secure sales of accounts receivable and other receivables;
- (f) licenses of intellectual property granted by the issuer, us or any of our subsidiaries in the ordinary course of business and not interfering in any material respect with the ordinary conduct of business;
- (g) liens of landlords arising under real property leases to the extent those liens arise in the ordinary course of business and do not secure any past due obligation for the payment of money;
- (h) any interest or title of a lessor or sublessor under any lease permitted by the indenture;

- (i) liens securing debt which has neither been assumed by the issuer, us or any of our subsidiaries nor upon which the issuer, we or any of our subsidiaries customarily pay interest charges, existing upon real property, or rights in or relating thereto, which real property or rights were acquired for right-of-way purposes;
- (j) zoning laws and ordinances;
- (k) any leases required to be capitalized on a balance sheet of the lessee in accordance with generally accepted accounting principles;
- (l) easements, rights-of-way, restrictions, conditions and other similar encumbrances, minor defects or irregularities of title, and alleys, streets and highways, which in the aggregate do not materially impair the usefulness of the mortgaged property in the present business of the issuer, us or any of our subsidiaries;
- (m) leases of the properties of the issuer, us or any of our subsidiaries, in each case entered into in the ordinary course of business and that do not, individually or in the aggregate, (i) interfere in any material respect with the ordinary course of business or (ii) materially impair the value of the property subject thereto;
- (n) liens arising out of conditional sale, title retention, consignment or similar arrangements for the sale of goods entered into by the issuer, us or any of our subsidiaries in the ordinary course of business in accordance with the past practices of the issuer, us or such subsidiary;
- (o) bankers' liens, right of setoff and other similar liens (including deposits required by interest rate swap agreements) existing solely with respect to cash and cash equivalents on deposit in one or more accounts maintained by the issuer, us or any of our subsidiaries, in each case granted in the ordinary course of business in favor of the financial institutions with which such accounts are maintained, securing amounts owing to such financial institutions with respect to cash management and operating account arrangements, including those involving pooled accounts and netting arrangements; provided that, unless such liens are non-consensual and arise by operation of law, in no case shall any such liens secure (either directly or indirectly) the repayment of any debt;
- (p) liens for taxes, assessments or governmental charges or levies not yet delinquent and which may subsequently be paid without interest or penalties and liens for taxes, assessments or governmental charges or levies which are being contested in good faith by appropriate proceedings for which reserves have been established to the extent required by GAAP;
- (q) any lien on any property of the issuer, us or any of our subsidiaries securing obligations not exceeding in the aggregate \$100 million outstanding at any time;
- (r) liens on any property, acquired, constructed or improved by the issuer, us or any of our subsidiaries after the date of the indenture, and any improvements thereon, accessions thereto or other property acquired or constructed for use in connection therewith or related thereto, which are created or assumed prior to or contemporaneously with, or within 180 days after, such acquisition or completion of such construction or improvement, or within one year thereafter pursuant to a firm commitment for financing arranged with a lender or investor within such 180-day period, to secure or provide for the payment of all or any part of the purchase price of such property or the cost of such construction or improvement incurred after the date of the indenture or liens on any property existing at the time of acquisition thereof; *provided*, that the liens shall not extend to any property theretofore owned by the issuer, us or any of our subsidiaries other than, in the case of any such construction or improvement,
 - (i) unimproved real property on which the property so constructed or the improvement is located,
 - (ii) other property (or improvement thereon) which is an improvement to or is acquired or constructed for use in connection therewith or related thereto, (iii) any right and interest under any agreement or other documents relating to the property being so constructed or improved or such other property and
 - (iv) the stock of any subsidiary of ours created or maintained for the primary purpose of owning the property so constructed or improved;

- (s) liens on property securing debt if, prior to or concurrently with the issuance, assumption or guarantee of such debt, the notes (together with, if the issuer shall so determine, (i) any other debt of or guaranteed by the issuer ranking equally with the notes or (ii) any debt of us or any of our subsidiaries then existing or thereafter created) are secured by such property equally and ratably with (or prior to) such debt (for so long as such debt is secured by such liens);
- (t) liens securing the notes;
- (u) liens securing debt owed to the issuer, us or any of our subsidiaries; and
- (v) liens created for the sole purpose of refinancing, extending, renewing or replacing in whole or in part debt or other obligations secured by any lien referred to in the foregoing subsections (a) through (t); *provided, however*, that the principal amount of debt or obligations secured thereby shall not exceed the principal amount of debt or obligations so secured at the time of such refinancing, extension, renewal or replacement *plus* the amount of any premiums required to be paid thereon and reasonable fees and expenses associated therewith and that such refinancing, extension, renewal or replacement, as the case may be, shall be limited to all or a part of the property that secured the lien or mortgage so refinanced, extended, renewed or replaced (and any improvements on such property).

“Debt” means, for any person (without duplication), all (i) indebtedness for borrowed money, (ii) obligations evidenced by bonds, debentures, notes or other similar instruments, (iii) obligations to pay the deferred purchase price of property or service (other than trade payables not overdue by more than 90 days incurred in the ordinary course of business and long term water purchase contracts), (iv) obligations under capital leases, (v) indebtedness of the type referred to in clauses (i) through (iv) above secured by (or for which the holder of such indebtedness has an existing right, contingent or otherwise, to be secured by), any lien or encumbrance on, or security interest in, property (including, without limitation, accounts and contract rights) owned by such person, even though such person has not assumed or become liable for payment of such indebtedness, and (vi) all obligations of such person for indebtedness or obligations of others of the kinds referred to in clauses (i) through (iv) above under direct or indirect guarantees, excluding, in all cases, (i) advances for construction and contributions in aid of construction as set forth on the consolidated balance sheet of American Water and its subsidiaries, (ii) reimbursement obligations (contingent or otherwise) in respect of outstanding letters of credit and (iii) attributable debt in respect of sale and leaseback transactions.

Restrictions on Sales and Leasebacks

The issuer will not, and will not allow us or any of our subsidiaries to, enter into any sale and leaseback transaction without effectively providing that the notes will be secured equally and ratably with or prior to the sale and leaseback transaction, unless:

- the aggregate amount of the attributable debt of the issuer, us and our subsidiaries in respect of sale and leaseback transactions then outstanding would not exceed an amount equal to 15% of our consolidated tangible total assets, or
- the issuer, we or any of our subsidiaries, within 12 months of the sale and leaseback transaction, retire an amount of secured debt which is not subordinate to the notes in an amount equal to the greater of (1) the net proceeds of the sale or transfer of the property or other assets that are the subject of the sale and leaseback transaction or (2) the fair market value of the property leased.

A “sale and leaseback transaction” for purposes of this subsection is an arrangement between the issuer, us or any of our subsidiaries and a bank, insurance company or other lender or investor where the issuer, we or any of our subsidiaries leases property for an initial term of three years or more that was or will be sold by the issuer, us, or such subsidiary to that lender or investor for a sale price of U.S. \$1,000,000 or its equivalent or more.

“Attributable debt” means the lesser of (1) the fair market value of the asset subject to the sale and leaseback transaction and (2) the present value, determined in accordance with GAAP (discounted at a rate equal

to the rate of interest implicit in such transaction), of the obligations of the lessee for the net rental payments (excluding amounts on account of maintenance and repairs, insurance, taxes, assessments and similar charges and contingent rents) during the term of the lease.

“Consolidated tangible total assets” means, as at any applicable time of determination, consolidated total assets *less*, without duplication, all intangible assets such as goodwill, trademarks, trade names, patents and unamortized debt discount and expense carried as an asset, in each case as set forth in our most recent consolidated balance sheet.

“Consolidated total assets” means, as at any applicable time of determination, our consolidated total assets as set forth in our most recent consolidated financial statements.

Merger, Consolidation or Sale of Assets

(a) Neither the issuer nor we will consolidate with or merge into any other person or convey, transfer or lease its properties and assets substantially as an entirety to any person, unless:

(i) the successor formed by a consolidation or the survivor of a merger or the person that acquires by conveyance, transfer or lease all or substantially all of the assets of the issuer or us as an entirety, as the case may be, is a person organized and existing under the laws of the United States or any State thereof (including the District of Columbia), and expressly assumes, in the case of the issuer, the due and punctual payment of the principal of and any premium and interest on all the notes and the performance or observance of every covenant of the indenture on the part of the issuer to be performed or observed, and, in the case of us, all the obligations under the support agreement to be performed or observed, and such person shall have caused to be delivered to the trustee an officer’s certificate and an opinion of counsel to the effect that such consolidation, merger, conveyance, transfer or lease complies in all material respects with this covenant; and

(ii) immediately before and immediately after giving effect to such transaction, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing.

(b) Upon any consolidation by the issuer or us with or merger by the issuer or us into any other person or any conveyance, transfer or lease of either the issuer’s or our properties and assets substantially as an entirety in accordance with this covenant, the successor person formed by such consolidation or into which it is merged or to which such conveyance, transfer or lease is made will succeed to, and be substituted for, and may exercise every right and power of, the issuer or us, as applicable, under the indenture and the support agreement with the same effect as if such successor person had been named as the issuer or the support provider, as applicable, therein, and thereafter, except in the case of a lease, the predecessor person will be relieved of all obligations and covenants, in the case of the issuer under the indenture, the notes and, in the case of us, under the support agreement.

Support Agreement

We may not (a) cancel or terminate the support agreement or (b) amend or otherwise modify the terms of the support agreement, except for amendments and modifications that do not adversely affect the rights of the holders of notes, in each case, without the prior written consent of holders of all of the aggregate principal amount of the outstanding debt of the issuer.

Assumption

We may directly assume the due and punctual payment of the principal of (premium, if any) and interest on all the notes and the performance of every covenant of the indenture on the part of the issuer to be performed or

observed. Upon any such assumption, we will succeed to and be substituted for and may exercise every right and power of the issuer under the indenture with the same effect as if we had been named as the issuer in the indenture and the issuer will be released from its liability as obligor on the notes. No such assumption shall be permitted unless we have delivered to the indenture trustee an officers' certificate of us and an opinion of counsel for us, each stating that such assumption and supplemental indenture comply with this covenant and that all conditions precedent in the indenture relating to such transaction have been complied with.

Modification or Waiver

Except as provided below, the issuer and the trustee may supplement and amend the indenture or the notes with the consent of the holders of not less than a majority in principal amount of the outstanding notes. The consent of the holder of each outstanding note affected is required to:

- change the stated maturity of or the stated amount of the principal of, or any installment of interest on, the notes;
- reduce the principal amount or the rate of interest on, or any premium payable upon the redemption of the notes;
- change the place or currency of payment of principal of, or interest on, the notes;
- impair the right to institute suit for the enforcement of any such payment on or after the stated maturity of the notes or any redemption date for the notes;
- reduce the percentage of holders of outstanding notes necessary to modify or amend the indenture or to consent to any waiver under the indenture;
- reduce the percentage of outstanding notes necessary to waive any past default; or
- modify any of the above requirements.

The issuer and the trustee may supplement and amend the indenture or the notes without the consent of any holder for the following purposes:

- to evidence the succession of another entity to the issuer as obligor under an indenture;
- to provide for the acceptance of appointment by a successor trustee;
- to effect the assumption of the indenture by us or one of our subsidiaries;
- to cure any ambiguity, defect or inconsistency in the indenture;
- to provide for uncertificated notes in addition to or in place of certificated notes (provided that the uncertificated notes are issued in registered form for purposes of Section 163(f) of the Internal Revenue Code, or in a manner such that the uncertificated notes are described in Section 163(f)(2)(B) of the Internal Revenue Code);
- to add guarantees with respect to the notes or to secure the notes;
- to establish the form or terms of notes as permitted by the indenture;
- to add to the covenants of us, the issuer or our other subsidiaries for the benefit of the holders of the notes or to surrender any right or power conferred upon us, the issuer or our other subsidiaries;
- to make any change that does not adversely affect the rights of any holder of the notes; or
- to comply with any requirement of the SEC in connection with the qualification of the indenture under the Trust Indenture Act.

The consent of the holders of the notes is not necessary under the indenture to approve the particular form of any proposed amendment or supplemental indenture. It is sufficient if such consent approves the substance of the proposed amendment or supplemental indenture.

Prescription Period

Any money that the issuer deposits with the trustee or any paying agent for the payment of principal or interest on any global note that remains unclaimed for two years after the date upon which the principal and interest are due and payable will be repaid to the issuer upon the issuer's written request unless otherwise required by mandatory provisions of any applicable unclaimed property law. After that time, unless otherwise required by mandatory provisions of any unclaimed property law, the holder of any note will be able to seek any payment to which that holder may be entitled to collect only from the issuer.

No Personal Liability of Directors, Officers, Employees and Stockholders

No director, officer, employee, incorporator or stockholder of the issuer or us will have any liability for any obligations of the issuer or us under the notes, the indenture, the support agreement, or for any claim based on, in respect of, or by reason of, such obligations or their creation. Each holder of notes by accepting a note waives and releases all such liability. The waiver and release are part of the consideration for issuance of the notes. The waiver may not be effective to waive liabilities under the federal securities law and it is the view of the SEC that such waiver is against public policy.

Defeasance

At any time, the issuer may terminate all its obligations under the notes and the indenture, referred to as legal defeasance, except for certain obligations, including those respecting the defeasance trust and obligations to register the transfer or exchange of the notes, to replace mutilated, destroyed, lost or stolen notes and to maintain a registrar and paying agent in respect of the notes.

In addition, at any time the issuer may terminate its obligations under the covenants described under “—Certain Covenants” (other than the covenant described under “—Merger, Consolidation or Sale of Assets”), the operation of the cross acceleration provision, the bankruptcy provision and the judgment default provision described under “—Events of Default,” referred to as covenant defeasance.

The issuer may exercise its legal defeasance option notwithstanding its prior exercise of its covenant defeasance option. If the issuer exercises its legal defeasance option, payment of the notes may not be accelerated because of an event of default with respect thereto. If the issuer exercises its covenant defeasance option, payment of the notes may not be accelerated because of a default specified in clause (4), (5), (6) or (7) under “—Events of Default”.

In order to exercise either of its defeasance options, the issuer must irrevocably deposit in trust, referred to as the defeasance trust, with the trustee money or U.S. Government obligations, or both, in an amount deemed sufficient in the opinion of a nationally recognized firm of public accountants for the payment of principal and interest on the notes to redemption or maturity, as the case may be, and must comply with certain other conditions, including delivery to the trustee of an opinion of counsel to the effect that holders of the notes will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit and defeasance and will be subject to Federal income tax on the same amounts and in the same manner and at the same times as would have been the case if such deposit and defeasance had not occurred (and, in the case of legal defeasance only, such opinion of counsel must be based on a ruling of the Internal Revenue Service (the “IRS”) or other change in applicable Federal income tax law).

Discharge

When (i) the issuer delivers to the trustee all outstanding notes (other than notes replaced because of mutilation, loss, destruction or wrongful taking) for cancellation or (ii) all outstanding notes have become due and payable, or are by their terms due and payable within one year whether at maturity or are to be called for redemption within one year under arrangements reasonably satisfactory to the trustee, and in the case of clause

(ii) the issuer irrevocably deposits with the trustee funds sufficient to pay at maturity or upon redemption all outstanding notes, including interest thereon, and if in either case the issuer pays all other sums related to the notes payable under the indenture by the issuer, then the indenture shall, subject to certain surviving provisions, cease to be of further effect. The trustee shall acknowledge satisfaction and discharge of the indenture with respect to the notes on written demand of the issuer accompanied by an officers' certificate and an opinion of counsel of the issuer.

Governing Law

The indenture and the notes are governed by, and construed in accordance with, the laws of the State of New York, without regard to conflicts of laws principles thereof.

Book-Entry, Delivery and Form

Except as set forth below, the notes will be issued in registered, global form in minimum denominations of \$1,000 and integral multiples of \$1,000 in excess thereof. The notes will be issued at the closing of this offering only against payment in immediately available funds.

The notes initially will be represented by one or more notes in registered, global form without interest coupons, referred to as global notes. Upon issuance, each of the global notes will be deposited with the trustee as custodian for The Depository Trust Company, referred to as DTC, in New York, New York, and registered in the name of DTC or its nominee, in each case for credit to an account of a direct or indirect participant in DTC as described below.

Except as set forth below, the global notes may be transferred, in whole and not in part, only to another nominee of DTC or to a successor of DTC or its nominee. Beneficial interests in the global notes may not be exchanged for definitive notes in registered certificated form, referred to as certificated notes, except in the limited circumstances described below. See “—Exchanges of Global Notes for Certificated Notes.” Except in the limited circumstances described below, owners of beneficial interests in the global notes will not be entitled to receive physical delivery of the notes in certificated form.

Transfers of beneficial interests in the global notes will be subject to the applicable rules and procedures of DTC and its direct or indirect participants, which may change from time to time.

Exchanges of Global Notes for Certificated Notes

A beneficial interest in a global note may not be exchanged for a note in certificated form unless (i) DTC (x) notifies the issuer that it is unwilling or unable to continue as depository for such global note or (y) has ceased to be a clearing agency registered under the Exchange Act or (ii) there shall have occurred and be continuing an event of default with respect to the notes. In all cases, certificated notes delivered in exchange for any global note or beneficial interests therein will be registered in the names, and issued in approved denominations, requested by or on behalf of DTC (in accordance with its customary procedures). Any certificated notes issued in exchange for an interest in a global note will bear the legend restricting transfers that is borne by such global note. Any such exchange will be effected only through the DWAC system and an appropriate adjustment will be made in the records of the security register to reflect a decrease in the principal amount of the relevant global note.

Depository Procedures

The following description of the operations and procedures of DTC is provided solely as a matter of convenience. These operations and procedures are solely within the control of the respective settlement systems and are subject to changes by them from time to time. We and the issuer take no responsibility for these operations and procedures and urge investors to contact the system or their participants directly to discuss these matters.

Upon the issuance of the global notes, DTC will credit, on its internal system, the respective principal amount of the individual beneficial interests represented by such global notes to the accounts with DTC, referred to as participants, or persons who hold interests through participants. Ownership or beneficial interests in the global notes will be shown on, and the transfer of that ownership will be effected only through, records maintained by DTC or its nominee (with respect to interests of participants) and the records of participants (with respect to interest of persons other than participants).

As long as DTC, or its nominee, is the registered holder of a global note, DTC or such nominee, as the case may be, will be considered the sole owner and holder of the notes represented by such global note for all purposes under the indenture and the notes. Except in the limited circumstances described above under “—Exchanges of Global Notes for Certificated Notes,” owners of beneficial interests in a global note will not be entitled to have portions of such global note registered in their names, will not receive or be entitled to receive physical delivery of notes in definitive form and will not be considered the owners or holders of the global note (or any notes presented thereby) under the indenture or the notes. In addition, no beneficial owner of an interest in a global note will be able to transfer that interest except in accordance with DTC’s applicable procedures (in addition to those under the indenture referred to herein). In the event that owners of beneficial interests in a global note become entitled to receive notes in definitive form, such notes will be issued only in registered form in denominations of U.S. \$1,000 and integral multiples of \$1,000 in excess thereof.

Investors may hold their interests in the global notes directly through DTC, if they are participants in such system, or indirectly through organizations which are participants in such system. All interests in a global note may be subject to the procedures and requirements of DTC.

The laws of some states require that certain persons take physical delivery in definitive form of securities that they own. Consequently, the ability to transfer beneficial interests in a global note to such persons may be limited to that extent. Because DTC can act only on behalf of participants, which in turn act on behalf of indirect participants and certain banks, the ability of a person having beneficial interests in a global note to pledge such interests to persons or entities that do not participate in the DTC system, or otherwise take action in respect of such interests, may be affected by the lack of a physical certificate evidencing such interests.

Payments of the principal of and interest on global notes will be made to DTC or its nominee as the registered owner thereof. Neither the issuer, the trustee nor any of their respective agents will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in the global notes or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Beneficial interests in the global notes will trade in DTC’s Same-Day Funds Settlement System, and secondary market trading activity in such interests will therefore settle in immediately available funds. The issuer expects that DTC or its nominee, upon receipt of any payment of principal or interest in respect of a global note representing any notes held by it or its nominee, will immediately credit participants’ accounts with payment in amounts proportionate to their respective beneficial interests in the principal amount of such notes as shown on the records of DTC or its nominee. The issuer also expects that payments by participants to owners of beneficial interests in such global notes held through such participants will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers registered in “street name.” Such payments will be the responsibility of such participants.

Transfers between participants in DTC will be effected in accordance with DTC’s procedures, and will be settled in same-day funds.

DTC has advised the issuer that it will take any action permitted to be taken by a holder of notes (including the presentation of notes for exchange as described below) only at the direction of one or more participants to whose account with DTC interests in the global notes are credited and only in respect of such portion of the

aggregate principal amount of the notes as to which such participant or participants has or have given such direction. However, if there is an event of default (as defined above) under the notes, DTC reserves the right to exchange the global notes for legended notes in certificated form, and to distribute such notes to its participants.

DTC has advised the issuer as follows: DTC is

- a limited purpose trust company organized under the New York Banking law,
- a “banking organization” within the meaning of New York Banking law,
- a member of the Federal Reserve System,
- a “clearing corporation” within the meaning of the Uniform Commercial Code, as amended, and
- a “Clearing Agency” registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC was created to hold securities for its participants and facilitate the clearance and settlement of securities transactions between participants through electronic book-entry changes in accounts of its participants, thereby eliminating the need for physical transfer and delivery of certificates. Participants include securities brokers and dealers, banks, trust companies and clearing corporations and may include certain other organizations. DTC is partially owned by some of these participants or their representatives. Indirect access to the DTC system is available to other entities such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a participant, either directly or indirectly, referred to as indirect participants.

Although DTC has agreed to the foregoing procedures in order to facilitate transfers of beneficial ownership interests in the global notes among participants of DTC, it is under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued at any time. None of the issuer, the trustee nor any of their respective agents will have any responsibility for the performance by DTC or its participants or indirect participants of its respective obligations under the rules and procedures governing its operations, including maintaining, supervising or reviewing the records relating to, or payments made on account of, beneficial ownership interests in global notes.

Same-Day Settlement and Payment

The issuer will make payments in respect of the notes represented by the global notes (including principal, premium, if any, interest and special interest, if any) by wire transfer of immediately available funds to the accounts specified by the global note holder. The issuer will make all payments of principal, interest and premium and special interest, if any, with respect to Certificated Notes by wire transfer of immediately available funds to the accounts specified by the holders of the Certificated Notes or, if no such account is specified, by mailing a check to each such holder’s registered address. The notes represented by the global notes are expected to be eligible to trade in DTC’s Same-Day Funds Settlement System, and any permitted secondary market trading activity in such notes will, therefore, be required by DTC to be settled in immediately available funds. The issuer expects that secondary trading in any certificated notes will also be settled in immediately available funds.

CERTAIN UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS

The following discussion is a summary of certain U.S. Federal income tax consequences relevant to the purchase, ownership and disposition of the notes by the beneficial owners thereof, which we refer to as Holders. This discussion is limited to the tax consequences to the initial Holders of notes who purchase the notes at the initial offering price and does not address the tax consequences to subsequent purchasers of notes. This summary does not purport to be a complete analysis of all of the potential U.S. Federal income tax consequences relating to the purchase, ownership and disposition of the notes, nor does this summary describe any Federal estate tax consequences. There can be no assurance that the IRS will take a similar view of the tax consequences described herein. Furthermore, this discussion does not address all aspects of taxation that might be relevant to particular purchasers in light of their individual circumstances. For instance, this discussion does not address the alternative minimum tax provisions of the Code (as defined below) or special rules applicable to certain categories of purchasers (including dealers in securities or foreign currencies, traders in securities that elect to use a mark-to-market method of accounting for the securities holdings, insurance companies, real estate investment trusts, regulated investment companies, financial institutions, tax-exempt entities, Holders whose functional currency is not the U.S. dollar and, except to the extent discussed below, Non-U.S. Holders (as defined below)) or to purchasers who acquire or sell the notes as part of a wash sale for tax purposes or hold the notes as part of a hedge, straddle, conversion or constructive sale transaction or other risk reduction transaction.

This discussion is based on the provisions of the U.S. Internal Revenue Code of 1986, as amended (the “Code”), the Treasury Regulations promulgated thereunder, and administrative and judicial interpretations thereof, all as in effect as of the date hereof and all of which are subject to change (possibly with retroactive effect). The discussion below assumes that Holders hold the notes as capital assets within the meaning of Section 1221 of the Code.

If a partnership, or an entity treated as a partnership for U.S. Federal income tax purposes, holds any notes, the tax treatment of such entity and each partner will generally depend on the status of the partner and the activities of the partnership. Partnerships and their partners should consult their tax advisors regarding the tax consequences of owning the notes.

PROSPECTIVE HOLDERS ARE URGED TO CONSULT THEIR TAX ADVISORS AS TO THE SPECIFIC TAX CONSEQUENCES OF A PURCHASE OF NOTES IN LIGHT OF THEIR PARTICULAR TAX SITUATION, INCLUDING THE APPLICATION AND EFFECT OF THE CODE, AS WELL AS STATE, LOCAL AND FOREIGN INCOME AND OTHER TAX LAWS.

Tax Consequences to U.S. Holders

The following summary is a general description of certain U.S. Federal income tax consequences applicable to a “U.S. Holder.” For the purpose of this discussion, “U.S. Holder” means a Holder of a note that is for U.S. Federal income tax purposes (i) a citizen or resident of the United States, (ii) a corporation, or other entity treated as a corporation for U.S. Federal income tax purposes, created or organized in or under the laws of the United States or of any political subdivision thereof (including the District of Columbia), (iii) an estate, the income of which is subject to U.S. Federal income taxation regardless of its source, or (iv) a trust, if (A) the administration of the trust is subject to the primary supervision of a court within the United States and one or more U.S. persons has the authority to control all substantial decisions of the trust, or (B) has a valid election in place under applicable U.S. Treasury Regulations to be treated as a U.S. person.

We believe that there is only a remote possibility that we will redeem the notes for an amount greater than their principal amount, as described above in “Description of the Notes—Optional Redemption of the Issuer”. This remote possibility should not cause the notes to be contingent payment debt instruments and should therefore not change the treatment described below.

Payments of Interest and Principal

We expect that the notes will not be issued with original issue discount (other than *de minimis* original issue discount). Accordingly, interest paid on a note will generally be taxable to a U.S. Holder as ordinary interest income at the time the interest accrues or is received in accordance with the U.S. Holder's method of accounting for U.S. Federal income tax purposes. To the extent that any payment of principal is made on a note (prior to maturity), a U.S. Holder will recognize a pro rata portion of any *de minimis* original issue discount on such note as capital gain.

Sale, Exchange, Redemption or Retirement of the Notes

In general, upon the sale, exchange, redemption or retirement of a note, a U.S. Holder will recognize capital gain or loss equal to the difference between the amount realized on such sale, exchange, redemption, retirement (not including any amount attributable to accrued but unpaid interest that the U.S. Holder has not already included in gross income) and such Holder's adjusted tax basis in the note. To the extent attributable to accrued but unpaid interest that the U.S. Holder has not already included in gross income, the amount recognized by the U.S. Holder will be treated as a payment of interest. See “—Payments of Interest and Principal” above. A U.S. Holder's adjusted tax basis in a note generally will equal the cost of the note to such Holder, reduced by any principal payments (other than payments treated as payments of *de minimis* original issue discount) received by such Holder. The capital gain or loss will be long-term if a U.S. Holder's holding period is more than one year at the time of sale, exchange, redemption, retirement or other disposition and will be short-term if a U.S. Holder's holding period is one year or less. Long-term capital gains of individuals are generally eligible for reduced rates of taxation. The deductibility of capital losses is subject to limitations.

The assumption described above in “Description of the Notes—Assumption” will result in a “deemed exchange” of a note for a new note of the assuming corporation. It is unclear whether this deemed exchange will be a taxable transaction for U.S. Federal income tax purposes or whether it will not be a taxable transaction for U.S. Federal income tax purposes. If the assumption is treated as a taxable transaction for U.S. Federal income tax purposes, then the consequences in the preceding paragraph would apply. Prospective Holders are urged to consult their tax advisors regarding the tax consequences of such an assumption.

Under certain circumstances described above in “Description of the Notes—Discharge”, the issuer will be discharged from any and all obligations in respect of the notes. Such discharge may be treated as a taxable exchange for U.S. Federal income tax purposes. U.S. Holders should consult their own tax advisors regarding the U.S. Federal, state, and local tax consequences of such a discharge.

Medicare Tax

For taxable years beginning after December 31, 2012, a U.S. Holder that is an individual or estate, or a trust that does not fall into a special class of trusts that is exempt from such tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. Holder's “net investment income” for the relevant taxable year and (2) the excess of the U.S. Holder's modified adjusted gross income for the taxable year over a certain threshold (which in the case of individuals will be between \$125,000 and \$250,000, depending on the individual's circumstances). A holder's net investment income will generally include its interest income and its net gains from the disposition of notes, unless such interest income or net gains are derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities). U.S. Holders that are individuals, estates or trusts are urged to consult their tax advisors regarding the applicability of the Medicare tax to their income and gains in respect of their investment in the notes.

Tax Consequences to Non-U.S. Holders

The following summary is a general description of certain U.S. Federal income tax consequences to a “Non-U.S. Holder”. A “Non-U.S. Holder” means, for purposes of this discussion, a Holder (other than a partnership, or

other entity treated as a partnership for U.S. Federal income tax purposes) that is not a U.S. Holder. Special rules may apply to certain Non-U.S. Holders such as “controlled foreign corporations,” “passive foreign investment companies” and certain U.S. individuals that are expatriates and such Non-U.S. Holders should consult their tax advisors.

Interest

Assuming that a Non-U.S. Holder’s interest income on a note is not effectively connected with the conduct by such Holder of a trade or business in the United States, payments of interest on a note by us or any paying agent to a Non-U.S. Holder will not be subject to U.S. Federal income tax or withholding tax, *provided* that:

- such Holder does not own, actually or constructively, 10% or more of the total combined voting power of all classes of our stock entitled to vote;
- such Holder is not, for U.S. Federal income tax purposes, a controlled foreign corporation related, directly or indirectly, to us through stock ownership;
- such Holder is not a bank receiving interest “on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of its trade or business” within the meaning of Section 881(c)(3)(A) of the Code;
- the certification requirements under Code Section 871(h) or 881(c) and Treasury Regulations thereunder (summarized below) are met; and
- we or any paying agent thereof on a note do not have actual knowledge or reason to know that the Holder is actually a U.S. Holder.

Payments of interest on a note that do not satisfy all of the foregoing requirements are generally subject to U.S. Federal income tax and withholding tax at a flat rate of 30% (or a lower applicable treaty rate, *provided* certain certification requirements are met).

Except to the extent otherwise provided under an applicable tax treaty, a Non-U.S. Holder generally will be subject to U.S. Federal income tax in the same manner as a U.S. Holder with respect to interest that is effectively connected with a U.S. trade or business conducted by the Non-U.S. Holder. Effectively connected interest income received by a corporate Non-U.S. Holder may also, under certain circumstances, be subject to an additional “branch profits tax” at a 30% rate, or, if applicable, a lower treaty rate. Such effectively connected interest income will not be subject to withholding tax if the Non-U.S. Holder delivers an IRS Form W-8ECI to the payor.

Under Code Sections 871(h) and 881(c) and the underlying U.S. Treasury Regulations, in order to obtain the exemption from withholding tax described in this section “Interest” above either (i) the Holder of a note must provide its name and address, and certify, under penalties of perjury, to us or the paying agent, as the case may be, that such Holder is a Non-U.S. Holder or (ii) the Holder must hold its notes through certain intermediaries and such intermediaries must satisfy the certification requirements of applicable Treasury Regulations. Special certification rules apply to Holders that are pass-through entities for U.S. Federal income tax purposes. In general, a certificate described in this paragraph is effective only with respect to payments of interest made to the certifying Non-U.S. Holder after issuance of the certificate in the calendar year of its issuance and the two immediately succeeding calendar years (or, if earlier, until a change in circumstances makes any of the information in the form incorrect). Under Treasury Regulations, the foregoing certification may be provided by the Holder of a note, or, if applicable, an intermediary, on IRS Form W-8BEN, W-8IMY or W-8EXP, as applicable.

Repayment of Principal and Realized Gain

In general, a Non-U.S. Holder of a note will not be subject to U.S. Federal withholding tax on the receipt of payments of principal on the note, and a Non-U.S. Holder will not be subject to U.S. Federal income tax on any gain realized on the sale, exchange, redemption, retirement or other disposition of such note, or receipt of principal, unless:

- such Non-U.S. Holder is a nonresident alien individual who is present in the United States for 183 or more days in the taxable year of disposition and certain other conditions are met;
- the Non-U.S. Holder is required to pay tax pursuant to the provisions of U.S. tax law applicable to certain U.S. expatriates; or
- the gain is effectively connected with the conduct of a U.S. trade or business of or, if a tax treaty applies, is attributable to a U.S. permanent establishment of, the Non-U.S. Holder.

Backup Withholding and Information Reporting

Under current U.S. Federal income tax law, backup withholding and information reporting requirements apply to certain payments of principal and interest made to, and to the proceeds of sale before maturity by, certain Holders.

In the case of a noncorporate U.S. Holder, information reporting requirements will apply to payments of principal or interest made by us or any paying agent thereof on a note. The payor will be required to withhold backup withholding tax if:

- a Holder fails to furnish its Taxpayer Identification Number (“TIN”) (which, for an individual, is his or her Social Security number) to the payor in the manner required;
- a Holder furnishes an incorrect TIN and the payor is so notified by the IRS;
- the payor is notified by the IRS that such Holder has failed to properly report payments of interest or dividends; or
- a Holder fails to certify under penalties of perjury that it has furnished a correct TIN, is a U.S. person, and has not been notified by the IRS that it is subject to backup withholding for failure to report interest or dividend payments.

Backup withholding and information reporting do not apply with respect to payments made to certain exempt recipients, which currently include entities treated as corporations for U.S. Federal income tax purposes. U.S. Holders should consult their tax advisors regarding their qualification for exemption from backup withholding and information reporting, and the procedure for obtaining such an exemption if applicable.

In the case of a Non-U.S. Holder, under currently applicable Treasury Regulations, backup withholding and information reporting will not apply to payments of principal or interest made by us or any paying agent thereof on a note (absent actual knowledge or reason to know that the Holder is actually a U.S. Holder) if such Holder has provided the required certification under penalties of perjury that it is not a U.S. Holder or has otherwise established an exemption. However, we and other payors are required to report payments of interest on a Non-U.S. Holder’s notes on Internal Revenue Service Form 1042-S even if the payments are not otherwise subject to information reporting requirements. If such Holder provides the required certification, such Holder may nevertheless be subject to withholding of U.S. Federal income tax as described above under “—Tax Consequences to Non-U.S. Holders—Interest” and “—Repayment of Principal and Realized Gain.” The rules regarding withholding, backup withholding and information reporting for Non-U.S. Holders are complex, may vary depending on a Non-U.S. Holder’s particular situation and are subject to change. In addition, special rules apply to certain types of Non-U.S. Holders, including partnerships, trusts and other entities treated as pass-through entities for U.S. Federal income tax purposes. Non-U.S. Holders of notes should accordingly consult their tax advisors regarding the application of information reporting and backup withholding in their particular situations, the availability of an exemption therefrom, and the procedure for obtaining such an exemption if applicable.

Backup withholding is not an additional tax; any amounts withheld from a payment to a Holder under the backup withholding rules will be allowed as a credit against such Holder's U.S. Federal income tax liability and may entitle such Holder to a refund, *provided* that certain required information is furnished to the IRS.

Recently Enacted Federal Tax Legislation

On March 18, 2010, President Obama signed the "Hiring Incentives to Restore Employment (HIRE) Act", or the HIRE Act, which includes a revised version of a bill known as the "Foreign Account Tax Compliance Act of 2009" or "FATCA". Under FATCA, foreign financial institutions (which include most hedge funds, private equity funds, mutual funds, securitization vehicles and any other investment vehicles regardless of their size) must comply with new information reporting rules with respect to their U.S. account holders and investors or confront a new withholding tax on U.S. source payments made to them. More specifically, a foreign financial institution or other foreign entity that does not comply with the FATCA reporting requirements will generally be subject to a new 30% withholding tax with respect to any "withholdable payments" made after December 31, 2012. For this purpose, withholdable payments are U.S.-source payments otherwise subject to nonresident withholding tax and also include the entire gross proceeds from the sale of any equity or debt instruments of U.S. issuers. The new FATCA withholding tax will apply even if the payment would otherwise not be subject to U.S. nonresident withholding tax (e.g., because it is capital gain treated as foreign source income under the Code). Recent IRS guidance provides that regulations implementing this legislation will defer this withholding obligation until January 1, 2014 for payments of interest and dividends and until January 1, 2017 for gross proceeds from dispositions of stock and debt. Treasury is authorized to provide rules for implementing the FATCA withholding regime and coordinating the FATCA withholding regime with the existing nonresident withholding tax rules.

FATCA withholding will not apply to certain payments made to beneficial owners that are foreign governments, international organizations, foreign central banks of issue or any other class of persons identified by Treasury as posing a low risk of tax evasion. FATCA applies to debt obligations issued or deemed issued after March 18, 2012. Recently proposed IRS regulations generally would exempt debt obligations issued before January 1, 2013, and the gross proceeds from the subsequent disposition of such obligations, from the application of FATCA. There can be no assurance as to whether or not these proposed regulations will be adopted in final form, and, if so adopted, what form the proposed regulations would take.

Non-U.S. Holders are urged to consult with their own tax advisors regarding the effect, if any, of the FATCA provisions on them based on their particular circumstances.

UNDERWRITING

Subject to the terms and conditions set forth in an underwriting agreement dated the date hereof between us and the underwriters named below, we have agreed to sell to each of the underwriters, and each of the underwriters has severally agreed to purchase from us, the principal amount of notes set forth opposite its name below.

<u>Underwriter</u>	<u>Principal Amount of Notes</u>
Goldman, Sachs & Co.	\$ 75,000,000
Merrill Lynch, Pierce, Fenner & Smith Incorporated	75,000,000
RBS Securities Inc.	75,000,000
PNC Capital Markets LLC	30,000,000
U.S. Bancorp Investments, Inc.	15,000,000
TD Securities (USA) LLC	15,000,000
BNY Mellon Capital Markets, LLC	15,000,000
Total	<u>\$300,000,000</u>

The offering of the notes by the underwriters is subject to receipt and acceptance and subject to the underwriters’ right to reject any order in whole or in part. The underwriting agreement provides that the underwriters are obligated to purchase all the notes in the offering if any are purchased.

The underwriters have advised us that they propose initially to offer the notes to the public at the public offering price set forth on the cover of this prospectus supplement, and to certain dealers at such price less a concession not in excess of 0.500% of the principal amount of the notes. The underwriters may allow, and such dealers may reallow, a concession not in excess of 0.375% of the principal amount of the notes to certain other dealers. If all of the notes are not sold at the initial public offering price of the notes, the offering price and other selling terms may be changed by the underwriters.

We estimate that the total expenses of the offering, including registration, printing fees and legal and accounting expenses but excluding the underwriting discount, will be approximately \$483,420.

The issuer and the support provider have agreed to indemnify the underwriters against liabilities relating to this offering, including liabilities under the Securities Act, or contribute to payments that the underwriters may be required to make in that respect.

The notes are a new issue of securities with no established trading market. The notes will not be listed on any securities exchange or on any automated dealer quotation system. We have been advised by the underwriters that they presently intend to make a market in the notes as permitted by applicable laws and regulations. The underwriters are not obligated, however, to make a market in the notes and any such market making may be discontinued without notice at any time at the sole discretion of the underwriters. Accordingly, no assurance can be given as to the liquidity of, or trading market for, the notes.

In connection with the offering, the underwriters may engage in stabilizing transactions, over-allotment transactions, covering transactions and penalty bids in accordance with Regulation M under the Exchange Act.

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.
- Over-allotment involves sales by the underwriters of notes in excess of the principal amount of notes the underwriters are obligated to purchase, which creates a short position.
- The underwriters may bid for and purchase notes in the open market.

- Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the notes originally sold by the underwriters are purchased in a stabilizing covering transaction to cover short positions.

These stabilizing transactions, covering transactions and penalty bids may have the effect of raising or maintaining the market price of the notes or preventing or retarding a decline in the market price of the notes. As a result, the price of the notes may be higher than the price that might otherwise exist in the open market. These transactions may be discontinued at any time without notice.

The issuer and the support provider have agreed with the underwriters that, during the period of time from the date of the underwriting agreement until the date 60 days after the date of this prospectus supplement, they will not sell, offer to sell or otherwise dispose of any securities that are substantially similar to the notes without the underwriters' prior written consent.

The underwriters and their affiliates have engaged, and may in the future engage, in transactions with, and from time to time have performed services for, the issuer, the support provider and the support provider's affiliates in the ordinary course of business, for which they have received and will receive customary compensation. For instance, affiliates of the underwriters are lenders under our credit facility. The underwriters or their affiliates may hold our commercial paper and, to the extent they do, will receive their respective share of any repayment by us of our outstanding commercial paper borrowings from the proceeds of this offering.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of the issuer, the support provider or the support provider's affiliates. If any of the underwriters or their affiliates have a lending relationship with the issuer, the support provider or the support provider's affiliates, certain of those underwriters or their affiliates routinely hedge, and certain other of those underwriters may hedge, their credit exposure to us consistent with their customary risk management policies. Typically, these underwriters and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in securities of the issuer, the support provider or the support provider's affiliates, including potentially the notes offered hereby. Any such credit default swaps or short positions could adversely affect future trading prices of the notes offered hereby. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

LEGAL MATTERS

Certain legal matters in connection with this offering, including the validity of the notes, will be passed upon for us by Morgan, Lewis & Bockius LLP, New York, New York. The validity of the notes will be passed upon for the underwriters by Sullivan & Cromwell LLP, New York, New York.

EXPERTS

The consolidated financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2011 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

GLOSSARY

“*customer*” typically means a connection to our water or wastewater networks; as in the case of apartment complexes, businesses and many homes, multiple individuals may be served by a single connection.

“*O&M*” refers to services provided pursuant to a contract to operate and maintain a water or wastewater system.

“*population*” means the estimated number of people served by our water and wastewater services; see “Industry and Market Data” for the methodology we employ to estimate population served.

“*state PUC*” means a state commission or other entity engaged in economic regulation of public utilities.

American Water Works Company, Inc.

**Common Stock
Preferred Stock
Support Agreement
Depositary Shares
Stock Purchase Contracts
Stock Purchase Units
Subscription Rights
Warrants**

American Water Capital Corp. Debt Securities

The securities covered by this prospectus may be sold by American Water Works Company, Inc., or American Water, from time to time, independently or together with American Water Capital Corp., or AWCC, a wholly-owned subsidiary of American Water Works Company, Inc. Any debt securities issued by AWCC will have the benefit of a support agreement from American Water. In addition, selling security holders who may be named in a prospectus supplement may offer and sell from time to time securities in such amounts as set forth in such prospectus supplement. We may, and any selling security holder may, offer the securities independently or together in any combination for sale directly to purchasers or through underwriters, dealers or agents to be designated at a future date. We may, and any selling security holder may, offer and sell these securities in amounts, at prices and on terms determined at the time of the offering. Unless otherwise set forth in a prospectus supplement, we will not receive any proceeds from the sale of securities by any selling security holders.

When we offer securities, we will provide you with a prospectus supplement describing the specific terms of the specific issue of securities, including the offering price of the securities. Prospectus supplements may also add, update or change the information in this prospectus. You should carefully read this prospectus and the prospectus supplement relating to the specific issue of securities, together with the documents we incorporate by reference, before you decide to invest in any of these securities.

THIS PROSPECTUS MAY NOT BE USED TO OFFER OR SELL ANY SECURITIES UNLESS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

American Water Works Company, Inc. common stock is listed on the New York Stock Exchange under the symbol "AWK."

Investing in these securities involves certain risks. See "Risk Factors" on page 3 of this prospectus. You should carefully review the risks and uncertainties described under the heading "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission, any state securities commission or any other regulatory body has approved or disapproved of these securities or passed on the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The securities may be offered and sold to or through underwriters, dealers, agents or other third parties as designated from time to time, or directly to one or more other purchasers or through a combination of such methods on a continuous or delayed basis. See "Plan of Distribution" on page 30. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names, and any applicable purchase price, fee, commission or discount arrangements between or among them, will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement.

The date of this prospectus is May 4, 2012.

No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus. We have not authorized anyone to provide you with information that is different. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date and any information we have incorporated by reference is only accurate as of the date of the document incorporated by reference.

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Our regulated subsidiaries are subject to economic regulation by state Public Utility Commissions, which we refer to as state PUCs, in California, Hawaii, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, New Jersey, New York, Pennsylvania, Tennessee, Virginia and West Virginia. Some of these states have enacted laws that require regulatory approval for the acquisition of “control” of any regulated utility. In those states, obtaining “control” of the parent or any other company that controls a regulated utility also requires prior regulatory approval. The threshold for a change in control is a fact-specific inquiry that varies by state. For example, in some states, a presumption of control will arise when an acquiring party acquires more than 9.9% of the voting securities of the regulated utility or the controlling entity. In addition to ownership, other states may analyze the degree of influence or control an acquiror may exert over the company. Any person acquiring American Water’s common stock in an offering or in any other purchase of American Water’s common stock in a quantity sufficient to trigger a change in control under state law would need the prior approval of the applicable state Public Utility Commission.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that American Water Works Company, Inc., which we refer to as “American Water,” and American Water Capital Corp., which we refer to as “AWCC,” filed with the Securities and Exchange Commission, which we refer to as the “SEC,” using a “shelf” registration process. Under this shelf registration process, we, or certain of our security holders, may sell the securities described in this prospectus in one or more offerings from time to time. Each time we, or, under certain circumstances, our security holders, sell securities under this shelf registration, we will provide a prospectus supplement that will contain specific information about the terms of the offering. The prospectus supplement may also add to, modify or supersede the information contained in this prospectus. You should read both this prospectus and the applicable prospectus supplement together with the additional information referred to below under “Where You Can Find More Information.” If there is any inconsistency between the information in the prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement.

The prospectus supplement will describe: the terms of the securities offered, any initial public offering price, the price paid to us for the securities, the net proceeds to us, the manner of distribution and any underwriting compensation and the other specific material terms related to the offering of the applicable securities. For more detail on the terms of the securities, you should read the exhibits filed with or incorporated by reference in our registration statement of which this prospectus forms a part.

All references in this prospectus to “we,” “our” and “us” refer to American Water and its consolidated subsidiaries unless the context otherwise requires.

References to “securities” include any security that we or our security holders might sell under this prospectus or any prospectus supplement.

This prospectus contains summaries of certain provisions contained in some of the documents described herein. Please refer to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of the documents referred to herein have been filed, or will be filed or incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “Where You Can Find More Information.”

Pursuant to this registration statement, American Water and AWCC may offer, issue and sell securities as set forth on the cover page of this prospectus. Because American Water is a “well-known seasoned issuer,” as defined in Rule 405 of the Securities Act of 1933, as amended, which we refer to as the “Securities Act,” we may add to and offer additional securities, including securities held by security holders, by filing a prospectus supplement with the SEC at the time of the offer.

You should rely only on the information contained in this prospectus or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. The distribution of this prospectus and sale of these securities in certain jurisdictions may be restricted by law. Persons in possession of this prospectus are required to inform themselves about and observe any such restrictions. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate as of the date on the front cover of this prospectus only. Our business, financial condition, results of operations and prospects may have changed since that date.

AMERICAN WATER WORKS COMPANY, INC.

We are the most geographically diversified, as well as the largest publicly-traded, United States water and wastewater utility company, as measured by both operating revenue and population served. As a holding company, we conduct substantially all of our business operations through our subsidiaries. Our approximately 7,000 employees provide an estimated 15 million people with drinking water, wastewater and other water-related services in over 30 states and two Canadian provinces.

We have two operating segments that are also our two reportable segments: the Regulated Businesses and the Market-Based Operations.

Our primary business involves the ownership of subsidiaries that provide water and wastewater utility services to residential, commercial, industrial and other customers, including sale for resale and public authority customers. Our subsidiaries that provide these services are generally subject to economic regulation by certain state commissions or other entities engaged in economic regulation, hereafter referred to as “PUCs”, in the states in which they operate. The federal government and the states also regulate environmental, health and safety, and water quality matters. We report the results of our primary business in the Regulated Businesses segment.

We also provide services that are not subject to economic regulation by state PUCs through our Market-Based Operations. Our Market-Based Operations include three lines of business:

- Contract Operations Group, which enters into contracts to operate and maintain water and wastewater facilities mainly for the United States military, municipalities, and the food and beverage industry;
- Homeowner Services Group, which provides services to domestic homeowners and smaller commercial establishments to protect against the cost of repairing broken or leaking water pipes and clogged or blocked sewer pipes inside and outside their accommodations; and
- Terratec Environmental Ltd., which primarily provides biosolids management, transport and disposal services to municipal and industrial customers.

AMERICAN WATER CAPITAL CORP.

AWCC is a wholly-owned finance subsidiary of American Water. AWCC’s activities are limited to borrowing funds through the issuance of debt securities or through credit agreements with institutional lenders and lending those funds under loan agreements to our operating subsidiaries.

RISK FACTORS

An investment in our securities involves risk. Before you invest in securities issued by us, you should carefully consider the risks involved. Accordingly, you should carefully consider:

- the information contained in or incorporated by reference into this prospectus;
- the information contained in or incorporated by reference into any prospectus supplement relating to specific offerings of securities;
- the risks described in our Annual Report on Form 10-K for our most recent fiscal year and in any Quarterly Report on Form 10-Q which we have filed since our most recent Annual Report on Form 10-K, each of which is incorporated by reference into this prospectus; and
- other risks and other information that may be contained in, or incorporated by reference from, other filings we make with the SEC, including in any prospectus supplement relating to specific offerings of securities.

The discussion of risks related to our business contained in or incorporated by reference into this prospectus or into any prospectus supplement comprises material risks of which we are aware. If any of the events or developments described actually occurs, our business, financial condition or results of operations would likely suffer.

You should also be aware that new risks may emerge in the future at any time, and we cannot predict such risks or estimate the extent to which they may affect our business, financial condition or results of operations. The prospectus supplement applicable to each type or series of securities we offer may contain a discussion of additional risks applicable to an investment in us and the particular type of securities we are offering under that prospectus supplement.

FORWARD-LOOKING STATEMENTS

In connection with the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, American Water and AWCC are herein filing cautionary statements identifying important factors that could cause American Water's and AWCC's actual results to differ materially from those projected in forward-looking statements (as such term is defined in the Private Securities Litigation Reform Act of 1995) made by or on behalf of American Water and AWCC in this prospectus or any supplement to this prospectus, in presentations, in response to questions or otherwise. Any statements that express, or involve discussions as to, expectations, beliefs, plans, objectives, assumptions, future events or performance, climate change strategy or growth strategies (often, but not always, through the use of words or phrases such as "will," "will likely result," "are expected to," "will continue," "aim," "is anticipated," "believe," "could," "should," "would," "estimated," "may," "plan," "potential," "projection," "target," "outlook," "predict," and "intend" or words of similar meaning) are not statements of historical facts and may be forward-looking. Forward-looking statements involve estimates, assumptions and uncertainties. Accordingly, any such statements are qualified in their entirety by reference to, and are accompanied by, the specific factors discussed in "Risk Factors" herein and in American Water's reports that are incorporated herein by reference (in addition to any assumptions and other factors referred to specifically in connection with such forward-looking statements) that could have a significant impact on American Water's and AWCC's operations and financial results, and could cause American Water's or AWCC's actual results to differ materially from those contained or implied in forward-looking statements made by or on behalf of American Water or AWCC.

Any forward-looking statement speaks only as of the date on which that statement is made, and neither American Water nor AWCC undertakes any obligation to update any forward-looking statement to reflect events or circumstances, including unanticipated events, after the date on which that statement is made, unless otherwise required by law. New factors emerge from time to time and it is not possible for management to predict all of those factors, nor can it assess the impact of each of those factors on the business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statement.

The issues and associated risks and uncertainties discussed in "Risk Factors" herein and in the reports that are incorporated herein by reference are not the only ones American Water or AWCC may face. Additional issues may arise or become material as the energy industry evolves. The risks and uncertainties associated with those additional issues could impair American Water's and AWCC's businesses in the future.

SELLING SECURITY HOLDERS

We may register securities covered by this prospectus for re-offers and resales by any selling security holders who may be named in a prospectus supplement. Because American Water is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act, we may add secondary sales of securities by any selling security holders by filing a prospectus supplement with the SEC. We may register these securities to permit selling security holders to resell their securities when they deem appropriate. A selling security holder may resell all, a portion or none of their securities at any time and from time to time. We may register those securities for sale through an underwriter or other plan of distribution as set forth in a prospectus supplement. See “Plan of Distribution.” Selling security holders may also sell, transfer or otherwise dispose of some or all of their securities in transactions exempt from the registration requirements of the Securities Act. We may pay all expenses incurred with respect to the registration of the securities owned by the selling security holders, other than underwriting fees, discounts or commissions, which will be borne by the selling security holders. We will provide you with a prospectus supplement naming the selling security holders, the amount of securities to be registered and sold and any other terms of the securities being sold by a selling security holder.

USE OF PROCEEDS

Unless we inform you otherwise in a prospectus supplement or free writing prospectus, we intend to use the net proceeds from the sale of the securities for general corporate purposes, including working capital, infrastructure improvements and other capital expenditures, acquisitions, the repayment of indebtedness and repurchase of common stock. Unless otherwise set forth in a prospectus supplement, we will not receive any proceeds from any sales of our securities by any selling security holder who may be named in a prospectus supplement.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

For purposes of calculating the ratio of earnings to fixed charges, earnings consists of income (loss) from continuing operations before income taxes including the effect of allowance for funds used during construction, which we refer to as AFUDC, plus fixed charges. Fixed charges consist of interest expense, amortization of debt issuance costs, and a portion of rent expense that management believes is representative of the interest component of rental expense. Fixed charges have not been reduced for the effect of AFUDC. In addition, we had no preferred stock outstanding for any period presented, and accordingly, the ratio of earnings to combined fixed charges and preferred stock dividends is the same as the ratio of earnings to fixed charges.

The ratio of earnings to fixed charges was less than 1.00x for the periods indicated in the table below.

American Water’s and AWCC’s ratios of earnings to fixed charges for each of the periods indicated are as follows:

	Year ended December 31,					Quarter ended
	2007	2008	2009	2010	2011	March 31, 2012
American Water Works Company, Inc						
Ratio of Earnings to Fixed Charges(1)	—	—	—	2.26	2.50	2.01
American Water Capital Corp.						
Ratio of Earnings to Fixed Charges	1.00	1.00	1.00	1.00	1.00	1.00

(1) For the years ended December 31, 2007, 2008 and 2009, earnings were insufficient to cover fixed charges and there were deficiencies of \$238.8 million, \$420.6 million and \$106.3 million, respectively.

DESCRIPTION OF CAPITAL STOCK

The following description of American Water's common stock and preferred stock will apply generally to any future common stock or preferred stock that American Water may offer, but is not complete. We will describe the particular terms of any class or series of these securities in more detail in the applicable prospectus supplement. The terms of these securities also may be affected by the General Corporation Law of the State of Delaware, which we refer to below as the DGCL. For more information regarding the common stock and preferred stock that may be offered by this prospectus, please refer to American Water's restated certificate of incorporation, which we refer to below as American Water's "certificate of incorporation," and American Water's amended and restated bylaws, which we refer to below as American Water's "bylaws." The certificate of incorporation and bylaws are incorporated by reference as exhibits to the registration statement of which this prospectus is a part.

General

American Water's authorized capital stock consists of 500,000,000 shares of common stock, par value \$0.01 per share, and 50,000,000 shares of preferred stock.

Common Stock

Voting Rights

Except as otherwise required by law, all matters to be voted on by American Water's stockholders must be approved by a majority of the votes cast by all shares of common stock.

Dividends

Holders of common stock will share equally in any dividend declared by American Water's board of directors, subject to the rights of the holders of any outstanding preferred stock.

Liquidation Rights

In the event of any voluntary or involuntary liquidation, dissolution or winding up of American Water's affairs, holders of American Water's common stock would be entitled, after payment of the liquidation preference to all holders of any outstanding preferred stock, to share ratably in American Water's assets that are legally available for distribution to stockholders after payment of liabilities. American Water must pay the applicable distribution to any holders of its preferred stock before it may pay distributions to the holders of its common stock.

Other Rights

American Water's stockholders have no preemptive or other rights to subscribe for additional shares.

Preferred Stock

American Water's authorized preferred stock consists of 50 million shares of preferred stock, \$0.01 par value. No shares of preferred stock are outstanding as of the date of this prospectus.

American Water's board of directors may authorize the issuance of preferred stock from time to time in one or more series, without stockholder approval. Subject to the limits imposed by the DGCL, the board of directors is authorized to fix for any series of preferred stock the number of shares of such series and the voting powers (if any), designation, preferences and relative, participating, optional or other special rights, and qualifications, limitations or restrictions of such series. American Water's board of directors is also authorized to increase or decrease the number of shares of any series, but not below the number of shares of that series then outstanding, without any further vote or action by American Water's stockholders.

American Water's board of directors may authorize the issuance of preferred stock with voting or conversion rights that affect adversely the voting power or other rights of American Water's common stockholders. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could have the effect of delaying, deferring or preventing a change in control, causing the market price of American Water's common stock to decline, or impairing the voting and other rights of the holders of American Water's common stock. You should read both this prospectus and the applicable prospectus supplement together with the additional information referred to below under "Where You Can Find More Information."

For any series of preferred stock that American Water may issue, American Water's board of directors will determine and the prospectus supplement relating to such series will describe:

- The number of shares constituting such series and the distinctive designation of the series;
- The dividend rate on the shares of the series, the conditions and dates upon which dividends thereon shall be payable, the extent, if any, to which dividends thereon shall be cumulative, and the relative rights of preference, if any, of payment of dividends thereon;
- Whether or not the shares of the series are redeemable and, if redeemable, the time or times during which they shall be redeemable and the amount per share payable on redemption thereof, which amount may, but need not, vary according to the time and circumstances of such redemption;
- The amount payable in respect of the shares of the series, in the event of any liquidation, dissolution or winding up of American Water, which amount may, but need not, vary according to the time or circumstances of such action, and the relative rights of preference, if any, of payment of such amount;
- Any requirement as to a sinking fund for the shares of the series, or any requirement as to the redemption, purchase or other retirement by American Water of the shares of the series;
- The right, if any, to exchange or convert shares of the series into other securities or property, and the rate or basis, time, manner and condition of exchange or conversion;
- The voting rights, if any, to which the holders of shares of the series shall be entitled in addition to the voting rights provided by law; and
- Any other term, condition or provision with respect to the series not inconsistent with the provisions of American Water's certificate of incorporation or any resolution adopted by the board of directors pursuant thereto.

Certain Anti-Takeover Provisions of American Water's Certificate of Incorporation and Bylaws and Delaware Law

The following provisions of American Water's certificate of incorporation and bylaws could deter, delay or prevent a third party from acquiring American Water, even if doing so would benefit American Water's stockholders.

Undesignated Preferred Stock

The ability to authorize undesignated preferred stock makes it possible for American Water's board of directors to authorize the issuance of preferred stock with super voting, special approval, dividend or other rights or preferences on a discriminatory basis that could impede the success of any attempt to acquire American Water. These and other provisions may have the effect of deferring, delaying or discouraging hostile takeovers, or changes in control or management of American Water.

Requirements for Advance Notification of Stockholder Meetings, Nominations and Proposals

American Water's bylaws provide that special meetings of stockholders may be called only upon the request of the majority of American Water's board of directors, upon request of the Chairman of American Water's board of directors, upon request of American Water's President or upon request of stockholders holding at least 15% of American Water's outstanding common stock. American Water's bylaws prohibit the conduct of any business at a special meeting other than as specified in the notice for such meeting.

American Water's bylaws establish advance notice procedures with respect to stockholder proposals for annual meetings and the nomination of candidates for election as directors, other than nominations made by or at the direction of American Water's board of directors or a committee of the board of directors. A stockholder who wishes to bring a matter before a meeting must comply with American Water's advance notice requirements and provide us with certain information. Additionally, vacancies and newly created directorships may be filled only by a vote of a majority of the directors then in office, even though less than a quorum, or by stockholders. These provisions may defer, delay or discourage a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of American Water.

Stockholder Action by Written Consent

Under Section 228 of the DGCL, unless a company's certificate of incorporation provides otherwise, any action required to be taken at any annual or special meeting of stockholders may be taken without a meeting, without prior notice and without a vote if a consent or consents in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares of American Water's common stock entitled to vote thereon were present and voted. As permitted by Section 228 of the DGCL, American Water's certificate of incorporation provides otherwise: any action required or permitted to be taken by American Water's stockholders must be effected at a duly called annual or special meeting of American Water's stockholders and may not be effected by consent in writing by such stockholders.

Certain Other Provisions of American Water's Certificate of Incorporation and Bylaws and Delaware Law***Board of Directors***

American Water's certificate of incorporation provides that the number of directors is fixed in the manner provided in American Water's bylaws. American Water's bylaws provide that the number of directors will be fixed from time to time by American Water's board. American Water's board of directors currently consists of nine members.

Business Combinations under Delaware Law

American Water is subject to Section 203 of the DGCL, which prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the time the stockholder became an interested stockholder, subject to certain exceptions, including if, prior to such time, the board of directors approved the business combination or the transaction which resulted in the stockholder becoming an interested stockholder. "Business combinations" include mergers, asset sales and other transactions resulting in a financial benefit to the "interested stockholder." Subject to various exceptions, an "interested stockholder" is a person who, together with his or her affiliates and associates, owns, or within the prior three years did own, 15% or more of the corporation's outstanding voting stock. These restrictions generally prohibit or delay the accomplishment of mergers or other takeover or change-in-control attempts that are not approved by a company's board of directors.

Limitations of Liability and Indemnification of Officers and Directors

The DGCL authorizes corporations to limit or eliminate the personal liability of directors to corporations and their stockholders for monetary damages for breaches of directors' fiduciary duties. American Water's certificate of incorporation includes a provision that eliminates the personal liability of directors for monetary damages for actions taken as a director to the fullest extent authorized by the DGCL. The DGCL does not permit exculpation for liability:

- for breach of duty of loyalty;
- for acts or omissions not in good faith or involving intentional misconduct or knowing violation of law;
- under Section 174 of the DGCL (relating to unlawful dividends or stock repurchases); or
- for transactions from which the director derived improper personal benefit.

American Water's certificate of incorporation and bylaws provide that it will indemnify its directors and officers to the fullest extent permitted by law. American Water's bylaws also expressly authorize American Water to carry directors' and officers' insurance providing indemnification for American Water's directors, officers and certain employees and agents for some liabilities. We believe that these indemnification provisions and insurance are useful to attract and retain qualified directors and officers.

The limitation of liability and indemnification provisions in American Water's certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duty. These provisions may also have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit American Water and its stockholders. In addition, your investment may be adversely affected to the extent American Water pays the costs of settlement and damage awards against directors and officers in accordance with these indemnification provisions.

Transfer Agent and Registrar

American Stock Transfer & Trust Company, Inc. serves as the registrar and transfer agent for American Water's common stock.

New York Stock Exchange Listing

American Water's common stock is listed on the New York Stock Exchange under the trading symbol "AWK."

DESCRIPTION OF AWCC DEBT SECURITIES AND AMERICAN WATER SUPPORT AGREEMENT

The following description of the terms of the debt securities sets forth certain general terms and provisions of the debt securities to which any prospectus supplement may relate. The particular terms of the debt securities offered by any prospectus supplement and the extent, if any, to which these general provisions may apply to those debt securities will be described in the prospectus supplement relating to those debt securities. Accordingly, for a description of the terms of a particular issue of debt securities, reference must be made to both the prospectus supplement relating thereto and to the following description.

AWCC may issue debt securities from time to time in one or more series. The debt securities will be general obligations of AWCC. Any debt securities issued by AWCC will have the benefit of a support agreement from American Water. In the event that any series of debt securities will be subordinated to other indebtedness that AWCC has outstanding or may incur, the terms of the subordination will be set forth in the prospectus supplement relating to the subordinated debt securities. We expect that each series of debt securities will be issued under an indenture dated as of December 4, 2009, between AWCC and Wells Fargo Bank, National Association, as trustee, as the same may be amended or supplemented from time to time. The indenture and the form of supplemental indenture or other instrument establishing the debt securities of a particular series are filed as exhibits to, or will be subsequently incorporated by reference into, the registration statement of which this prospectus is a part. There is no requirement under the indenture that our future issuances of debt securities be issued exclusively under the indenture, and we will be free to employ other indentures or documentation, containing provisions different from those included in the indenture or applicable to one or more issuances of debt securities in connection with future issuances of other debt securities.

The following discussion of certain provisions of the indenture is a summary only and should not be considered a complete description of the terms and provisions of the indenture. Accordingly, the following discussion is qualified in its entirety by reference to the provisions of the indenture, including the definition of certain terms used below.

General

The debt securities represent direct, unsecured, general obligations of AWCC and:

- may rank equally with other unsubordinated debt or may be subordinated to other debt AWCC has or may incur;
- may be issued in one or more series with the same or various maturities;
- may be issued at a price of 100% of their principal amount or at a premium or discount;
- may be issued in registered or bearer form and certificated or uncertificated form;
- may be represented by one or more global securities registered in the name of a designated depository's nominee, and if so, beneficial interests in the global debt security will be shown on and transfers will be made only through records maintained by the designated depository and its participants; and
- will have the benefit of a support agreement, dated June 22, 2000, and amended on July 26, 2000, between AWCC and American Water; which we refer to as the support agreement.

The aggregate principal amount of debt securities that AWCC may authenticate and deliver is unlimited. The debt securities may be issued in one or more series as we may authorize from time to time. You should refer to the applicable prospectus supplement for the following terms of the debt securities of the series with respect to which that prospectus supplement is being delivered:

- (1) the title of the debt securities of the series (which shall distinguish the debt securities of that particular series from the debt securities of any other series);
- (2) the price or prices of the debt securities of the series;

- (3) any limit upon the aggregate principal amount of the debt securities of the series which may be authenticated and delivered under the indenture (except for debt securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other debt securities of the series and except for any debt securities which are deemed never to have been authenticated and delivered);
- (4) the person to whom any interest on a debt security of the series shall be payable, if other than the person in whose name that debt security (or one or more predecessor securities) is registered at the close of business on the regular record date for such interest;
- (5) the date or dates on which the principal and premium of any debt securities of the series are payable;
- (6) the rate or rates (which may be fixed or variable) at which any debt securities of the series shall bear interest (if any), or the method of determining such rate or rates, the date or dates from which any such interest shall accrue, the interest payment dates on which any such interest shall be payable, and the regular record date for any such interest payable on any interest payment date;
- (7) the period or periods within which, the price or prices at which and the terms and conditions upon which any debt securities of the series may be redeemed, in whole or in part, at the option of AWCC (including without limitation the number of basis points specified for such series for purposes of determining any make-whole amount in respect thereof, and any reference treasury dealers for such series) and, if other than by a board resolution, the manner in which any election by AWCC to redeem the debt securities shall be evidenced;
- (8) the obligation, if any, of AWCC to redeem or purchase any debt securities of the series at the option of the holder thereof, or at the option of any other person, and the period or periods within which, the price or prices at which and the terms and conditions upon which any debt securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- (9) if other than the currency of the United States of America, the currency, currencies or currency units in which the principal of or any premium or interest on any debt securities of the series shall be payable and the manner of determining the equivalent thereof in the currency of the United States of America for any purpose, and such other or additional provisions (including, without limitation, in respect of defeasance and covenant defeasance) as shall be necessary and desirable in connection therewith;
- (10) if other than the entire principal amount thereof, the portion of the principal amount of any debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;
- (11) if the principal amount payable at the stated maturity of any debt securities of the series will not be determinable as of any one or more dates prior to the stated maturity, the amount which shall be deemed to be the principal amount of such debt securities as of any such date for any purpose thereunder or hereunder, including the principal amount thereof which shall be due and payable upon any maturity other than the stated maturity or which shall be deemed to be outstanding as of any date prior to the stated maturity (or, in any such case, the manner in which such amount deemed to be the principal amount shall be determined);
- (12) if applicable, that any debt securities of the series shall be issuable in whole or in part in the form of one or more debt securities in registered, global form without interest coupons, which we refer to as global securities, and in such case, the respective depositaries for such global securities, the form of any legend or legends which shall be borne by any such global security, whether such global securities shall be in the form of registered securities, restricted securities or Regulation S securities and any circumstances in which any such global security may be exchanged in whole or in part for debt securities registered, and any transfer of such global security in whole or in part may be registered, in the name or names of persons other than the depositary for such global security or a nominee thereof;
- (13) the terms, if any, upon which the debt securities of the series may be convertible into or exchanged for AWCC's other debt securities or other securities of any kind and the terms and conditions upon which such conversion or exchange shall be effected, including the initial conversion or exchange price or rate, the conversion or exchange period and any other additional provisions;

- (14) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the debt securities of the series shall be issuable;
- (15) if the amount of principal, premium or interest with respect to the debt securities of the series may be determined with reference to an index or pursuant to a formula, the manner in which such amounts will be determined;
- (16) any changes or additions to the provisions of the indenture dealing with defeasance;
- (17) the terms, if any, of the transfer, mortgage, pledge or assignment as security for the debt securities of the series of any properties, assets, moneys, proceeds, securities or other collateral, including whether certain provisions of the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act, are applicable and any corresponding changes to provisions of the indenture as then in effect;
- (18) any addition to or change in the events of default with respect to any debt securities of the series and any change in the right of the trustee or the holders of such series of debt securities to declare the principal, premium and interest, if any, on such series of debt securities due and payable;
- (19) any trustee, authenticating agent, paying agent, transfer agent or registrar;
- (20) the applicability of, and any addition to or change in, the covenants and definitions then set forth in the indenture;
- (21) the subordination, if any, of the debt securities of the series pursuant to the indenture and any changes or additions to the provisions of the indenture relating to subordination;
- (22) with regard to debt securities of the series that do not bear interest, the dates for certain required reports to the trustee;
- (23) any U.S. Federal Income tax consequences applicable to the debt securities; and
- (24) any other terms of the series.

All debt securities of any one series need not be issued at the same time and may be issued from time to time, consistent with the terms of the indenture, if so provided by or pursuant to a board resolution, supplemental indenture or officers' certificate, and the authorized principal amount of any series may not be increased to provide for issuances of additional debt securities of such series, unless otherwise provided in such board resolution, supplemental indenture or officers' certificate.

Support Agreement

AWCC's debt is supported by the support agreement. The support agreement, which, under the circumstances described below, is the functional equivalent of a guarantee, provides, among other things, that:

- American Water owns, and during the term of the support agreement shall continue to own, all of the voting stock of AWCC free and clear of any lien, security interest or other charge or encumbrance;
- American Water will provide to AWCC, at its request or the request of any lender (including any holder of debt securities), funds in the form of cash or liquid assets (as equity or, if American Water and AWCC agree, as a loan subordinated to any and all indebtedness, whether or not that indebtedness is outstanding at the time of the loan) as required if AWCC is unable to make timely payment of interest, principal or premium, if any, on any indebtedness issued by it;
- American Water will cause AWCC to have at all times a positive tangible net worth (total assets less liabilities less intangible assets), as determined in accordance with generally accepted accounting principles; and
- if AWCC fails or refuses to take timely action to enforce certain rights under the support agreement or if AWCC defaults in the timely payment of interest, principal or premium, if any, owed to a lender

(including any holder of debt securities) when due, that lender may proceed directly against American Water to enforce such rights or to obtain payment of the defaulted interest, principal or premium, if any, owed to that lender.

No amendment to the support agreement that adversely affects the rights of any lender (including any holder of debt securities) and no termination of the support agreement will be effective until such time as all indebtedness of AWCC shall have been irrevocably paid in full and all commitments for indebtedness have been terminated, unless the lenders holding a majority of the aggregate principal amount of debt outstanding and (to the extent not outstanding) committed to consent in writing thereto. Notwithstanding the foregoing sentence, any amendment to the support agreement for the purposes of (i) increasing the minimum net worth as provided in the support agreement, (ii) establishing or increasing a minimum interest coverage ratio, (iii) establishing or reducing a maximum amount of debt leverage, (iv) increasing the aggregate principal amount of debt outstanding whose holders are required to consent to the termination or amendment of the support agreement, or (v) any combination of clause (i), (ii), (iii) and (iv) of this sentence, shall be effective without the consent of any lender. In addition, nothing in the prior two sentences shall derogate from, or override, any provision in an instrument, indenture, agreement or other document pursuant to which indebtedness is or will be issued that requires the written consent of the holders of a specified amount or percentage of that indebtedness to consent to an amendment or termination of the support agreement.

Certain Covenants

If debt securities are issued, the indenture, as supplemented for a particular series of debt securities, may contain, among others, the following covenants for the benefit of the holders of such series of debt securities, which will be applicable (unless waived or amended) so long as any of the debt securities of such series are outstanding, unless stated otherwise in the prospectus supplement:

Restrictions on Liens

AWCC will not, and will not allow American Water, as the support provider, or any of its subsidiaries to, create, incur, issue or assume any liens on our or its respective property to secure debt where the debt secured by those liens would exceed an amount equal to 15% of our consolidated tangible total assets, as defined below (calculated to exclude debt secured by permitted liens). This restriction does not apply to the following permitted liens:

- (a) liens existing, or created pursuant to the terms of agreements existing, on the date of the indenture;
- (b) liens consisting of (i) pledges or deposits in the ordinary course of business to secure obligations under workmen's compensation laws or similar legislation, (ii) deposits in the ordinary course of business to secure or in lieu of surety, appeal or customs bonds to which AWCC, American Water or any of its subsidiaries is a party, (iii) liens created by or resulting from any litigation or legal proceeding which is currently being contested in good faith by appropriate proceedings diligently conducted, (iv) pledges or deposits in the ordinary course of business to secure performance in connection with bids, tenders or contracts (other than contracts for the payment of money) or (v) materialmen's, mechanics', carriers', workmen's repairmen's or other like liens incurred in the ordinary course of business for sums not yet due or currently being contested in good faith by appropriate proceedings diligently conducted;
- (c) liens created to secure tax-exempt debt, in connection with the financing or refinancing of the purchase, lease or construction of properties;
- (d) any lien on any asset of any person existing at the time the person is merged or consolidated with or into, or such asset is acquired by AWCC, American Water or any of its subsidiaries and not created in contemplation of such event;
- (e) liens created to secure sales of accounts receivable and other receivables;

- (f) licenses of intellectual property granted by AWCC, American Water or any of its subsidiaries in the ordinary course of business and not interfering in any material respect with the ordinary conduct of business;
- (g) liens of landlords arising under real property leases to the extent those liens arise in the ordinary course of business and do not secure any past due obligation for the payment of money;
- (h) any interest or title of a lessor or sublessor under any lease permitted by the indenture;
- (i) liens securing debt which has neither been assumed by AWCC, American Water or any of its subsidiaries nor upon which AWCC, American Water or any of its subsidiaries customarily pay interest charges, existing upon real property, or rights in or relating thereto, which real property or rights were acquired for right-of-way purposes;
- (j) zoning laws and ordinances;
- (k) any leases required to be capitalized on a balance sheet of the lessee in accordance with generally accepted accounting principles;
- (l) easements, rights-of-way, restrictions, conditions and other similar encumbrances, minor defects or irregularities of title, and alleys, streets and highways, which in the aggregate do not materially impair the usefulness of the mortgaged property in the present business of AWCC, American Water or any of its subsidiaries;
- (m) leases of the properties of AWCC, American Water or any of its subsidiaries, in each case entered into in the ordinary course of business and that do not, individually or in the aggregate, (i) interfere in any material respect with the ordinary course of business or (ii) materially impair the value of the property subject thereto;
- (n) liens arising out of conditional sale, title retention, consignment or similar arrangements for the sale of goods entered into by AWCC, American Water or any of its subsidiaries in the ordinary course of business in accordance with the past practices of AWCC, American Water or such subsidiary;
- (o) bankers' liens, right of setoff and other similar liens (including deposits required by interest rate swap agreements) existing solely with respect to cash and cash equivalents on deposit in one or more accounts maintained by AWCC, American Water or any of its subsidiaries, in each case granted in the ordinary course of business in favor of the financial institutions with which such accounts are maintained, securing amounts owing to such financial institutions with respect to cash management and operating account arrangements, including those involving pooled accounts and netting arrangements; provided that, unless such liens are non-consensual and arise by operation of law, in no case shall any such liens secure (either directly or indirectly) the repayment of any debt;
- (p) liens for taxes, assessments or governmental charges or levies not yet delinquent and which may subsequently be paid without interest or penalties and liens for taxes, assessments or governmental charges or levies which are being contested in good faith by appropriate proceedings for which reserves have been established to the extent required by GAAP;
- (q) any lien on any property of AWCC, American Water or any of its subsidiaries securing obligations not exceeding in the aggregate \$100 million outstanding any time;
- (r) liens on any property, acquired, constructed or improved by AWCC, American Water or any of its subsidiaries after the date of the indenture, and any improvements thereon, accessions thereto or other property acquired or constructed for use in connection therewith or related thereto, which are created or assumed prior to or contemporaneously with, or within 180 days after, such acquisition or completion of such construction or improvement, or within one year thereafter pursuant to a firm commitment for financing arranged with a lender or investor within such 180-day period, to secure or provide for the payment of all or any part of the purchase price of such property or the cost of such construction or improvement incurred after the date of the indenture or liens on any property existing at the time of acquisition thereof; *provided*, that the liens shall not extend to any property theretofore owned by

AWCC, American Water or any of its subsidiaries other than, in the case of any such construction or improvement, (i) unimproved real property on which the property so constructed or the improvement is located, (ii) other property (or improvement thereon) which is an improvement to or is acquired or constructed for use in connection therewith or related thereto, (iii) any right and interest under any agreement or other documents relating to the property being so constructed or improved or such other property and (iv) the stock of any subsidiary of ours created or maintained for the primary purpose of owning the property so constructed or improved;

- (s) liens on property securing debt if, prior to or concurrently with the issuance, assumption or guarantee of such debt, the debt securities (together with, if AWCC shall so determine, (i) any other debt of or guaranteed by AWCC ranking equally with the debt securities or (ii) any debt of us or any of our subsidiaries then existing or thereafter created) are secured by such property equally and ratably with (or prior to) such debt (for so long as such debt is secured by such liens);
- (t) liens securing the debt securities;
- (u) liens securing debt owed to AWCC, American Water or any of its subsidiaries; and
- (v) liens created for the sole purpose of refinancing, extending, renewing or replacing in whole or in part debt or other obligations secured by any lien referred to in the foregoing subsections (a) through (t); *provided, however*, that the principal amount of debt or obligations secured thereby shall not exceed the principal amount of debt or obligations so secured at the time of such refinancing, extension, renewal or replacement *plus* the amount of any premiums required to be paid thereon and reasonable fees and expenses associated therewith and that such refinancing, extension, renewal or replacement, as the case may be, shall be limited to all or a part of the property that secured the lien or mortgage so refinanced, extended, renewed or replaced (and any improvements on such property).

“Debt” means, for any person (without duplication), all (i) indebtedness for borrowed money, (ii) obligations evidenced by bonds, debentures, debt securities or other similar instruments, (iii) obligations to pay the deferred purchase price of property or service (other than trade payables not overdue by more than 90 days incurred in the ordinary course of business and long term water purchase contracts), (iv) obligations under capital leases, (v) indebtedness of the type referred to in clauses (i) through (iv) above secured by (or for which the holder of such indebtedness has an existing right, contingent or otherwise, to be secured by), any lien or encumbrance on, or security interest in, property (including, without limitation, accounts and contract rights) owned by such person, even though such person has not assumed or become liable for payment of such indebtedness, and (vi) all obligations of such person for indebtedness or obligations of others of the kinds referred to in clauses (i) through (iv) above under direct or indirect guarantees, excluding, in all cases, (i) advances for construction and contributions in aid of construction as set forth on the consolidated balance sheet of American Water and its subsidiaries, (ii) reimbursement obligations (contingent or otherwise) in respect of outstanding letters of credit and (iii) attributable debt in respect of sale and leaseback transactions.

Restrictions on Sales and Leasebacks

AWCC will not, and will not allow American Water or any of its subsidiaries to, enter into any sale and leaseback transaction without effectively providing that the debt securities will be secured equally and ratably with or prior to the sale and leaseback transaction, unless:

- the aggregate amount of the attributable debt of AWCC, American Water and its subsidiaries in respect of sale and leaseback transactions then outstanding would not exceed an amount equal to 15% of our consolidated tangible total assets, or
- AWCC, American Water or any of its subsidiaries, within 12 months of the sale and leaseback transaction, retire an amount of secured debt which is not subordinate to the debt securities in an amount equal to the greater of (1) the net proceeds of the sale or transfer of the property or other assets that are the subject of the sale and leaseback transaction or (2) the fair market value of the property leased.

A “sale and leaseback transaction” for purposes of this subsection is an arrangement between AWCC, American Water or any of its subsidiaries and a bank, insurance company or other lender or investor where AWCC, American Water or any of its subsidiaries leases property for an initial term of three years or more that was or will be sold by AWCC, American Water, or such subsidiary to that lender or investor for a sale price of U.S. \$1,000,000 or its equivalent or more.

“Attributable debt” means the lesser of (1) the fair market value of the asset subject to the sale and leaseback transaction and (2) the present value, determined in accordance with GAAP (discounted at a rate equal to the rate of interest implicit in such transaction), of the obligations of the lessee for the net rental payments (excluding amounts on account of maintenance and repairs, insurance, taxes, assessments and similar charges and contingent rents) during the term of the lease.

“Consolidated tangible total assets” means, as at any applicable time of determination, consolidated total assets less, without duplication, all intangible assets such as goodwill, trademarks, trade names, patents and unamortized debt discount and expense carried as an asset, in each case as set forth in our most recent consolidated balance sheet.

“Consolidated total assets” means, as at any applicable time of determination, our consolidated total assets as set forth in our most recent consolidated financial statements.

Merger, Consolidation or Sale of Assets

Neither AWCC nor American Water will consolidate with or merge into any other person or convey, transfer or lease its properties and assets substantially as an entirety to any person, unless:

(i) the successor formed by a consolidation or the survivor of a merger or the person that acquires by conveyance, transfer or lease all or substantially all of the assets of AWCC or American Water as an entirety, as the case may be, is a person organized and existing under the laws of the United States or any State thereof (including the District of Columbia), and expressly assumes, in the case of American Water, the due and punctual payment of the principal of and any premium and interest on all the debt securities and the performance or observance of every covenant of the indenture on the part of AWCC to be performed or observed, and, in the case of American Water, all the obligations under the support agreement to be performed or observed, and such person shall have caused to be delivered to the trustee an officer’s certificate and an opinion of counsel to the effect that such consolidation, merger, conveyance, transfer or lease complies in all material respects with this covenant; and

(ii) immediately before and immediately after giving effect to such transaction, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing.

Upon any consolidation by AWCC or American Water with or merger by AWCC or American Water into any other person or any conveyance, transfer or lease of either AWCC’s or American Water’s properties and assets substantially as an entirety in accordance with this covenant, the successor person formed by such consolidation or into which it is merged or to which such conveyance, transfer or lease is made will succeed to, and be substituted for, and may exercise every right and power of, AWCC or American Water, as applicable, under the indenture and the support agreement with the same effect as if such successor person had been named as AWCC or American Water, as applicable, therein, and thereafter, except in the case of a lease, the predecessor person will be relieved of all obligations and covenants, in the case of AWCC under the indenture, the debt securities and, in the case of American Water, under the support agreement.

Support Agreement

American Water may not (a) cancel or terminate the support agreement or (b) amend or otherwise modify the terms of the support agreement, except for amendments and modifications that do not adversely affect the rights of the holders of debt securities, in each case, without the prior written consent of holders of at least a majority of the outstanding principal amount of all outstanding debt of AWCC.

Subordination

Debt securities of a series may be subordinated, which we refer to as subordinated debt securities, to senior indebtedness (as defined in the applicable prospectus supplement) to the extent set forth in the prospectus supplement relating thereto. To the extent we conduct operations through subsidiaries, the holders of debt securities (whether or not subordinated debt securities) will be structurally subordinated to the creditors of our subsidiaries, except to the extent such subsidiary is a guarantor of such series of debt.

Events of Default

Each of the following constitutes an event of default under the form of indenture with respect to any series of debt securities:

- (1) default for 30 days in the payment when due of interest on a series of debt securities;
- (2) default in payment when due of the principal of, or premium, if any, on a series of debt securities;
- (3) failure by AWCC or American Water to comply with the provisions described under the caption “—Certain Covenants—Merger, Consolidation or Sale of Assets”;
- (4) default in the deposit of any sinking fund payment, when and as due by the terms of debt securities of that series;
- (5) failure by AWCC or American Water to comply for 60 days after receipt of notice with any of the other agreements in the indenture or the support agreement; provided, however, that except with respect to defaults under or breaches of the covenant described under “—Certain Covenants—Restrictions on Liens,” holders of a series of debt securities will be deemed to have agreed to an extension of such 60-day period to 120 days so long as corrective action is initiated by AWCC or American water within such 60-day period unless such corrective action is no longer being diligently pursued;
- (6) default under any mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any indebtedness for money borrowed by AWCC or American Water (or the payment of which is guaranteed by AWCC or American Water), if that default is caused by a failure to pay principal at its stated maturity after giving effect to any applicable grace period, or results in the acceleration of such indebtedness prior to its stated maturity and, in each case, the principal amount of any such indebtedness, together with the principal amount of any other indebtedness under which there has been a payment default after stated maturity or the maturity of which has been so accelerated, aggregates \$100 million or more;
- (7) failure by AWCC or American Water to pay final judgments aggregating (to the extent not paid or insured) in excess of \$100 million, which judgments are not paid, within 60 days after the entry thereof, bonded, discharged or stayed pending appeal, or are not discharged within 60 days after the expiration of such stay;
- (8) except as permitted by the indenture, the support agreement shall cease for any reason to be in full force and effect or American Water, or any person acting on behalf of American Water, shall deny or disaffirm its obligations under the support agreement; and
- (9) certain events of bankruptcy or insolvency described in the indenture with respect to AWCC or American Water. A prospectus supplement may omit, modify or add to the foregoing events of default.

However, a default under clause (5) will not constitute an event of default until the trustee or the holders of 25% in aggregate principal amount of the outstanding debt securities in a series notify AWCC of the default and AWCC does not cure the default within 60 days after receipt of that notice. In the case of an event of default arising from certain events of bankruptcy or insolvency, with respect to AWCC or American Water, all outstanding debt securities in such series will become due and payable immediately without further action or notice. If any other event of default occurs and is continuing, the trustee or the holders of at least 25% in aggregate principal amount of the then outstanding debt securities in such series may declare all the securities to be due and payable immediately. Unless as otherwise provided herein, after any such acceleration, but before a judgment or decree based on acceleration is obtained by the trustee, the registered holders of a majority in aggregate principal amount of the outstanding debt securities in a series may, under certain circumstances, rescind and annul such acceleration and waive such event of default if all events of default, other than the nonpayment of accelerated principal, premium or interest have been cured or waived as provided in the indenture or a supplemental indenture.

Holders of a series of debt securities may not enforce the indenture, supplemental indenture or such debt securities except as provided in the indenture or supplemental indenture. Subject to certain limitations holders of a majority in principal amount of the then outstanding debt in a series may direct the trustee in its exercise of any trust or power. The trustee may withhold from holders of a series of debt securities notice of any continuing default if it determines that withholding notice is in their interest, except a default relating to the payment of principal or interest.

Subject to the provisions of the indenture relating to the duties of the trustee, in case an event of default shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request or direction of any of the holders of a series of debt securities, unless such holders shall have offered to the trustee reasonable indemnity or security against any loss, liability or expense. Subject to such provisions for indemnification of the trustee, the holders of a majority in aggregate principal amount of a series of debt securities then outstanding will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to such series of outstanding debt securities.

The holders of a majority in aggregate principal amount of a series of debt securities then outstanding, by notice to the trustee, may, on behalf of the holders of all of such series of debt securities, waive any existing default and its consequences under the indenture except a continuing default in the payment of interest on, or the principal of, such series of debt securities (other than the non-payment of principal of or interest on such series of debt securities that became due solely because of the acceleration of such series of debt securities).

AWCC is required to deliver to the trustee within 90 days after the end of each fiscal year a statement regarding compliance with the indenture during that fiscal year. Promptly (and in any event within 5 business days) upon a responsible officer of AWCC becoming aware of any default or event of default, AWCC is required to deliver to the trustee a statement specifying that default.

“Responsible officer” means the chief executive officer, chief operating officer, general counsel, any senior financial officer and any other officer of AWCC with responsibility for the administration of the indenture.

“Senior financial officer” means the chief financial officer, principal accounting officer, treasurer or controller of AWCC.

Modification or Waiver

Except as provided below, AWCC and the trustee may supplement and amend the form of indenture or the debt securities with the consent of the holders of not less than a majority in principal amount of the outstanding debt securities. The consent of the holder of each outstanding debt security affected is required to:

- change the stated maturity of or the stated amount of the principal of, or any installment of interest on, the debt securities;

- reduce the principal amount or the rate of interest on, or any premium payable upon the redemption of the debt securities;
- change the place or currency of payment of principal of, or interest on, the debt securities;
- impair the right to institute suit for the enforcement of any such payment on or after the stated maturity of the debt securities or any redemption date for the debt securities;
- reduce the percentage of holders of outstanding debt securities necessary to modify or amend the indenture or to consent to any waiver under the indenture;
- reduce the percentage of outstanding debt securities necessary to waive any past default; or
- modify any of the above requirements.

AWCC and the trustee may supplement and amend the indenture or the debt securities without the consent of any holder for the following purposes:

- to evidence the succession of another entity to AWCC as obligor under an indenture;
- to provide for the acceptance of appointment by a successor trustee;
- to effect the assumption of the indenture by American Water or one of its subsidiaries;
- to cure any ambiguity, defect or inconsistency in the indenture;
- to provide for uncertificated debt securities in addition to or in place of certificated debt securities (provided that the uncertificated debt securities are issued in registered form for purposes of Section 163(f) of the Internal Revenue Code, or in a manner such that the uncertificated debt securities are described in Section 163(f)(2)(B) of the Internal Revenue Code);
- to add guarantees with respect to the debt securities or to secure the debt securities;
- to establish the form or terms of debt securities as permitted by the indenture;
- to add to the covenants of American Water, AWCC or its other subsidiaries for the benefit of the holders of the debt securities or to surrender any right or power conferred upon us, AWCC or American Water's other subsidiaries;
- to make any change that does not adversely affect the rights of any holder of the debt securities; or
- to comply with any requirement of the SEC in connection with the qualification of the indenture under the Trust Indenture Act.

The consent of the holders of the debt securities is not necessary under the indenture to approve the particular form of any proposed amendment or supplemental indenture. It is sufficient if such consent approves the substance of the proposed amendment or supplemental indenture.

Prescription Period

Any money that AWCC deposits with the trustee or any paying agent for the payment of principal or interest on any global security that remains unclaimed for two years after the date upon which the principal and interest are due and payable will be repaid to AWCC upon AWCC's request unless otherwise required by mandatory provisions of any applicable unclaimed property law. After that time, unless otherwise required by mandatory provisions of any unclaimed property law, the holder of any debt security will be able to seek any payment to which that holder may be entitled to collect only from AWCC.

No Personal Liability of Directors, Officers, Employees and Stockholders

No director, officer, employee, incorporator or stockholder of AWCC or us, will have any liability for any obligations of AWCC or American Water under the debt securities, the indenture, the support agreement, or for any claim based on, in respect of, or by reason of, such obligations or their creation. Each holder of debt securities by accepting a debt security waives and releases all such liability. The waiver and release are part of the consideration for issuance of the debt securities. The waiver may not be effective to waive liabilities under the federal securities law and it is the view of the SEC that such waiver is against public policy.

Defeasance

At any time, AWCC may terminate all its obligations under a series of debt securities and the indenture, which we refer to as legal defeasance, except for certain obligations, including those respecting the defeasance trust and obligations to register the transfer or exchange of such series of debt securities, to replace mutilated, destroyed, lost or stolen debt securities of such series and to maintain a registrar and paying agent in respect of the debt securities of such series.

In addition, at any time AWCC may terminate its obligations under certain specified covenants with respect to a series of debt securities.

AWCC may exercise its legal defeasance option with respect to a series of debt securities notwithstanding its prior exercise of its covenant defeasance option with respect to such series of debt securities. If AWCC exercises its legal defeasance option with respect to a series of debt securities, payment of the debt securities of such series may not be accelerated because of an event of default with respect thereto. If AWCC exercises its covenant defeasance option with respect to a series of debt securities, payment of the debt securities of such series may not be accelerated because of a default related to the specified covenants.

In order to exercise either of its defeasance options, AWCC must irrevocably deposit in trust, which we refer to as the defeasance trust, with the trustee money or U.S. Government obligations for the payment of principal and interest on the applicable series of debt securities to redemption or maturity, as the case may be, and must comply with certain other conditions, including delivery to the trustee of an opinion of counsel to the effect that holders of the series of debt securities will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit and defeasance and will be subject to Federal income tax on the same amounts and in the same manner and at the same times as would have been the case if such deposit and defeasance had not occurred (and, in the case of legal defeasance only, such opinion of counsel must be based on a ruling of the Internal Revenue Service or other change in applicable Federal income tax law).

Discharge

When (i) AWCC delivers to the trustee all outstanding debt securities of a series (other than any debt securities replaced because of mutilation, loss, destruction or wrongful taking) for cancellation or (ii) all outstanding debt securities of a series have become due and payable, or are by their terms due and payable within one year whether at maturity or are to be called for redemption within one year under arrangements reasonably satisfactory to the trustee, and in the case of clause (ii) AWCC irrevocably deposits with the trustee funds sufficient to pay at maturity or upon redemption all outstanding debt securities of such series, including interest thereon, and if in either case AWCC pays all other sums related to the applicable series of debt securities payable under the indenture by AWCC, then the indenture shall, subject to certain surviving provisions cease to be of further effect with respect to such series. The trustee shall acknowledge satisfaction and discharge of the indenture with respect to the applicable series of debt securities on demand of AWCC accompanied by an officers' certificate and an opinion of counsel of AWCC.

Governing Law

The indenture and the debt securities will be governed by, and construed in accordance with, the laws of the State of New York.

Book-Entry, Delivery and Form

Except as set forth below or in the applicable prospectus supplement, each series of debt securities will be issued in registered, global form in minimum denominations of \$1,000 and integral multiples of \$1,000 in excess thereof. The debt securities will be issued at the closing of any offering only against payment in immediately available funds.

The debt securities initially will be represented by one or more global securities. Upon issuance, each of the global securities will be deposited with the trustee as custodian for The Depository Trust Company, which we refer to as DTC, in New York, New York, and registered in the name of DTC or its nominee, in each case for credit to an account of a direct or indirect participant in DTC as described below.

Except as set forth below, the global securities may be transferred, in whole and not in part, only to another nominee of DTC or to a successor of DTC or its nominee. Beneficial interests in the global securities may not be exchanged for definitive debt securities in registered certificated form, which we refer to as certificated debt securities, except in the limited circumstances described below. See “—Exchange of Global Securities for Certificated Debt Securities.” Except in the limited circumstances described below, owners of beneficial interests in the global securities will not be entitled to receive physical delivery of the debt securities in certificated form.

Transfers of beneficial interests in the global securities will be subject to the applicable rules and procedures of DTC and its direct or indirect participants, which may change from time to time.

Exchanges of Global Securities for Certificated Debt Securities

A beneficial interest in a global security may not be exchanged for a debt security in certificated form unless (i) DTC (x) notifies AWCC that it is unwilling or unable to continue as depository for such global security or (y) has ceased to be a clearing agency registered under the Exchange Act or (ii) there shall have occurred and be continuing an event of default with respect to the debt securities. In all cases, certificated debt securities delivered in exchange for any global security or beneficial interests therein will be registered in the names, and issued in approved denominations, requested by or on behalf of DTC (in accordance with its customary procedures). Any certificated debt securities issued in exchange for an interest in a global security will bear the legend restricting transfers that is borne by such global security. Any such exchange will be effected only through the DWAC system and an appropriate adjustment will be made in the records of the security register to reflect a decrease in the principal amount of the relevant global security.

Depository Procedures

The following description of the operations and procedures of DTC is provided solely as a matter of convenience. These operations and procedures are solely within the control of the respective settlement systems and are subject to changes by them from time to time. American Water and AWCC take no responsibility for these operations and procedures and urge investors to contact the system or their participants directly to discuss these matters.

Upon the issuance of the global securities, DTC will credit, on its internal system, the respective principal amount of the individual beneficial interests represented by such global securities to the accounts with DTC, which we refer to as participants, or persons who hold interests through participants. Ownership or beneficial interests in the global securities will be shown on, and the transfer of that ownership will be effected only through, records maintained by DTC or its nominee (with respect to interests of participants) and the records of participants (with respect to interest of persons other than participants).

As long as DTC, or its nominee, is the registered holder of a global security, DTC or such nominee, as the case may be, will be considered the sole owner and holder of the debt securities represented by such global security for all purposes under the indenture and the debt securities. Except in the limited circumstances

described above under “—Exchanges of Global Securities for Certificated Debt Securities,” owners of beneficial interests in a global security will not be entitled to have portions of such global security registered in their names, will not receive or be entitled to receive physical delivery of debt securities in definitive form and will not be considered the owners or holders of the global security (or any debt securities presented thereby) under the indenture or the debt securities. In addition, no beneficial owner of an interest in a global security will be able to transfer that interest except in accordance with DTC’s applicable procedures (in addition to those under the indenture referred to herein). In the event that owners of beneficial interests in a global security become entitled to receive debt securities in definitive form, such debt securities will be issued only in registered form in denominations of U.S. \$1,000 and integral multiples of \$1,000 in excess thereof.

Investors may hold their interests in the global securities directly through DTC, if they are participants in such system, or indirectly through organizations which are participants in such system. All interests in a global security may be subject to the procedures and requirements of DTC.

The laws of some states require that certain persons take physical delivery in definitive form of securities that they own. Consequently, the ability to transfer beneficial interests in a global security to such persons may be limited to that extent. Because DTC can act only on behalf of participants, which in turn act on behalf of indirect participants and certain banks, the ability of a person having beneficial interests in a global security to pledge such interests to persons or entities that do not participate in the DTC system, or otherwise take action in respect of such interests, may be affected by the lack of a physical certificate evidencing such interests.

Payments of the principal of and interest on global securities will be made to DTC or its nominee as the registered owner thereof. Neither AWCC, the trustee nor any of their respective agents will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in the global securities or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Beneficial interests in the global securities will trade in DTC’s Same-Day Funds Settlement System, and secondary market trading activity in such interests will therefore settle in immediately available funds. AWCC expects that DTC or its nominee, upon receipt of any payment of principal or interest in respect of a global security representing any debt securities held by it or its nominee, will immediately credit participants’ accounts with payment in amounts proportionate to their respective beneficial interests in the principal amount of such debt securities as shown on the records of DTC or its nominee. AWCC also expects that payments by participants to owners of beneficial interests in such global securities held through such participants will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers registered in “street name.” Such payments will be the responsibility of such participants.

Transfers between participants in DTC will be effected in accordance with DTC’s procedures, and will be settled in same-day funds.

DTC has advised AWCC that it will take any action permitted to be taken by a holder of debt securities (including the presentation of debt securities for exchange as described below) only at the direction of one or more participants to whose account with DTC interests in the global securities are credited and only in respect of such portion of the aggregate principal amount of the debt securities as to which such participant or participants has or have given such direction. However, if there is an event of default under the debt securities, DTC reserves the right to exchange the global securities for legended debt securities in certificated form, and to distribute such debt securities to its participants.

DTC has advised AWCC as follows: DTC is

- a limited purpose trust company organized under the New York Banking Law,
- a “banking organization” within the meaning of the New York Banking Law,

- a member of the Federal Reserve System,
- a “clearing corporation” within the meaning of the New York Uniform Commercial Code, as amended, and
- a “clearing agency” registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC was created to hold securities for its participants and facilitate the clearance and settlement of securities transactions between participants through electronic book-entry changes in accounts of its participants, thereby eliminating the need for physical transfer and delivery of certificates. Participants include securities brokers and dealers, banks, trust companies and clearing corporations and may include certain other organizations. DTC is partially owned by some of these participants or their representatives. Indirect access to the DTC system is available to other entities such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a participant, either directly or indirectly, which we refer to as indirect participants.

Although DTC has agreed to the foregoing procedures in order to facilitate transfers of beneficial ownership interests in the global securities among participants of DTC, it is under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued at any time. None of AWCC, the trustee nor any of their respective agents will have any responsibility for the performance by DTC or its participants or indirect participants of its respective obligations under the rules and procedures governing its operations, including maintaining, supervising or reviewing the records relating to, or payments made on account of, beneficial ownership interests in global securities.

Same Day Settlement and Payment

AWCC will make payments in respect of the debt securities represented by the global securities (including principal, premium, if any, interest and special interest, if any) by wire transfer of immediately available funds to the accounts specified by the global security holder. AWCC will make all payments of principal, interest and premium and special interest, if any, with respect to certificated debt securities by wire transfer of immediately available funds to the accounts specified by the holders of the certificated debt securities or, if no such account is specified, by mailing a check to each such holder’s registered address. The debt securities represented by the global securities are expected to be eligible to trade in DTC’s Same-Day Funds Settlement System, and any permitted secondary market trading activity in such debt securities will, therefore, be required by DTC to be settled in immediately available funds. AWCC expects that secondary trading in any certificated debt securities will also be settled in immediately available funds.

DESCRIPTION OF DEPOSITARY SHARES

The following summary of certain provisions of the depositary shares does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the depositary agreement that will be filed with the SEC in connection with the offering of such depositary shares.

American Water may offer fractional shares of preferred stock, rather than full shares of preferred stock. If American Water decides to offer fractional shares of preferred stock, American Water will issue receipts for depositary shares. Each depositary share will represent a fraction of a share of a particular series of preferred stock, and the prospectus supplement will indicate that fraction. The shares of preferred stock represented by depositary shares will be deposited under a depositary agreement between American Water and a depositary that is a bank or trust company that meets certain requirements and is selected by us. The depositary will be specified in the applicable prospectus supplement. Each owner of a depositary share will be entitled to all of the rights and preferences of the preferred stock represented by the depositary share. The depositary shares will be evidenced by depositary receipts issued pursuant to the depositary agreement. Depositary receipts will be distributed to those persons purchasing the fractional shares of preferred stock in accordance with the terms of the offering.

We have summarized selected provisions of the depositary agreement and the depositary receipts, but the summary is qualified by reference to the provisions of the depositary agreement and the depositary receipts. The particular terms of any series of depositary shares will be described in the applicable prospectus supplement. If so indicated in the prospectus supplement, the terms of any such series may differ from the terms set forth below.

Dividends and Other Distributions

The depositary will distribute all cash dividends or other cash distributions received by it in respect of the preferred stock to the record holders of depositary shares relating to such preferred shares in proportion to the numbers of depositary shares held on the relevant record date. The amount made available for distribution will be reduced by any amounts withheld by the depositary or American Water on account of taxes.

In the event of a distribution other than in cash, the depositary will distribute securities or property received by it to the record holders of depositary shares in proportion to the numbers of depositary shares held on the relevant record date, unless the depositary determines that it is not feasible to make such distribution. In that case, the depositary may make the distribution by such method as it deems equitable and practicable. One such possible method is for the depositary to sell the securities or property and then distribute the net proceeds from the sale as provided in the case of a cash distribution.

Withdrawal of Shares

Upon surrender of depositary receipts representing any number of whole shares at the depositary's office, unless the related depositary shares previously have been called for redemption, the holder of the depositary shares evidenced by the depositary receipts will be entitled to delivery of the number of whole shares of the related series of preferred stock and all money and other property, if any, underlying such depositary shares. However, once such an exchange is made, the preferred stock cannot thereafter be redeposited in exchange for depositary shares. Holders of depositary shares will be entitled to receive whole shares of the related series of preferred stock on the basis set forth in the applicable prospectus supplement. If the depositary receipts delivered by the holder evidence a number of depositary shares representing more than the number of whole shares of preferred stock of the related series to be withdrawn, the depositary will deliver to the holder at the same time a new depositary receipt evidencing the excess number of depositary shares.

Redemption of Depositary Shares

Whenever American Water redeems the preferred stock, the depositary will redeem a number of depositary shares representing the same number of shares of preferred stock so redeemed. If fewer than all of the depositary shares are to be redeemed, the depositary shares to be redeemed will be selected by lot, pro-rata or by any other equitable method as the depositary may determine.

Voting of Underlying Shares

Upon receipt of notice of any meeting at which the holders of the preferred stock of any series are entitled to vote, the depositary will mail the information contained in the notice of the meeting to the record holders of the depositary shares relating to that series of preferred shares. Each record holder of the depositary shares on the record date will be entitled to instruct the depositary as to the exercise of the voting rights represented by the number of shares of preferred stock underlying the holder's depositary shares. The depositary will endeavor, to the extent it is practical to do so, to vote the number of whole shares of preferred stock underlying such depositary shares in accordance with such instructions. American Water will agree to take all action that the depositary may deem reasonably necessary in order to enable the depositary to do so. To the extent the depositary does not receive specific instructions from the holders of depositary shares relating to such preferred shares, it will abstain from voting such shares of preferred stock.

Amendment and Termination of Depositary Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the applicable depositary agreement may at any time be amended by agreement between American Water and the depositary. American Water may, with the consent of the depositary, amend the depositary agreement from time to time in any manner that American Water desires. However, if the amendment would materially and adversely alter the rights of the existing holders of depositary shares, the amendment would need to be approved by the holders of at least a majority of the depositary shares then outstanding.

The depositary agreement may be terminated by American Water or the depositary if:

- all outstanding depositary shares have been redeemed; or
- there has been a final distribution in respect of the shares of preferred stock of the applicable series in connection with American Water's liquidation, dissolution or winding up and such distribution has been made to the holders of depositary receipts.

Resignation and Removal of Depositary

The depositary may resign at any time by delivering to us notice of its election to do so. We may remove a depositary at any time. Any resignation or removal will take effect upon the appointment of a successor depositary and its acceptance of appointment.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of any depositary arrangements. We will pay all charges of each depositary in connection with the initial deposit of the preferred shares of any series, the initial issuance of the depositary shares, any redemption of such preferred shares and any withdrawals of such preferred shares by holders of depositary shares. Holders of depositary shares will be required to pay any other transfer taxes.

Notices

Each depositary will forward to the holders of the applicable depositary shares all notices, reports and communications from us which are delivered to such depositary and which we are required to furnish the holders of the preferred shares.

Limitation of Liability

The depositary agreement contains provisions that limit our liability and the liability of the depositary to the holders of depositary shares. Both the depositary and we are also entitled to an indemnity from the holders of the depositary shares prior to bringing, or defending against, any legal proceeding. We or any depositary may rely upon written advice of counsel or accountants, or information provided by persons presenting preferred shares for deposit, holders of depositary shares or other persons believed by us to be competent and on documents believed by us or them to be genuine.

DESCRIPTION OF STOCK PURCHASE CONTRACTS AND STOCK PURCHASE UNITS

The following summary of certain provisions of the stock purchase contracts and stock purchase units does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the stock purchase contract or stock purchase unit, as applicable, that will be filed with the SEC in connection with the offering of such securities.

American Water may issue stock purchase contracts, including contracts obligating holders to purchase from us, and obligating American Water to sell to the holders, a specified number of shares of common stock or other securities at a future date or dates, which we refer to in this prospectus as “stock purchase contracts.” The price per share of the securities and the number of shares of the securities may be fixed at the time the stock purchase contracts are issued or may be determined by reference to a specific formula set forth in the stock purchase contracts. The stock purchase contracts may be issued separately or as part of units consisting of a stock purchase contract and debt securities, preferred securities, warrants or debt obligations of third parties, including U.S. treasury securities, securing the holders’ obligations to purchase the securities under the stock purchase contracts, which we refer to herein as “stock purchase units.” The stock purchase contracts may require holders to secure their obligations under the stock purchase contracts in a specified manner. The stock purchase contracts also may require American Water to make periodic payments to the holders of the stock purchase units or vice versa, and those payments may be unsecured or refunded on some basis.

The applicable prospectus supplement will describe the terms of the stock purchase contracts or stock purchase units. The description in the prospectus supplement will not necessarily be complete, and reference will be made to the stock purchase contracts, and, if applicable, collateral or depositary arrangements, relating to the stock purchase contracts or stock purchase units, which will be filed with the SEC each time American Water issues stock purchase contracts or stock purchase units. Material United States federal income tax considerations applicable to the stock purchase units and the stock purchase contracts will also be discussed in the applicable prospectus supplement.

DESCRIPTION OF SUBSCRIPTION RIGHTS

The following summary of certain provisions of the subscription rights does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the certificate evidencing the subscription rights that will be filed with the SEC in connection with the offering of such subscription rights.

General

American Water may issue subscription rights to purchase common stock, preferred stock, depository shares or warrants to purchase preferred stock, common stock or depository shares. Subscription rights may be issued independently or together with any other offered security and may or may not be transferable by the person purchasing or receiving the subscription rights. In connection with any subscription rights offering to American Water's stockholders, American Water may enter into a standby underwriting arrangement with one or more underwriters pursuant to which such underwriters will purchase any offered securities remaining unsubscribed for after such subscription rights offering. In connection with a subscription rights offering to American Water's stockholders, American Water will distribute certificates evidencing the subscription rights and a prospectus supplement to American Water's stockholders on or about the record date that American Water sets for receiving subscription rights in such subscription rights offering.

The applicable prospectus supplement will describe the following terms of subscription rights in respect of which this prospectus is being delivered:

- the title of such subscription rights,
- the securities for which such subscription rights are exercisable,
- the exercise price for such subscription rights,
- the number of such subscription rights each stockholder will be entitled to receive, on a per share basis,
- the extent to which such subscription rights are transferable,
- if applicable, a discussion of the material United States federal income tax considerations applicable to the issuance or exercise of such subscription rights,
- the date on which the right to exercise such subscription rights shall commence, and the date on which such rights shall expire (subject to any extension),
- the extent to which such subscription rights include an over-subscription privilege with respect to unsubscribed securities,
- if applicable, the material terms of any standby underwriting or other purchase arrangement that American Water may enter into in connection with the subscription rights offering, and
- any other terms of such subscription rights, including terms, procedures and limitations relating to the exchange and exercise of such subscription rights.

Exercise of Subscription Rights

Each subscription right will entitle the holder of the subscription right to purchase for cash such amount of shares of preferred stock, depository shares, common stock, warrants or any combination thereof, at such exercise price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the subscription rights offered thereby. Subscription rights may be exercised at any time up to the close of business on the expiration date for such subscription rights set forth in the prospectus supplement. After the close of business on the expiration date, all unexercised subscription rights will become void.

Subscription rights may be exercised as set forth in the prospectus supplement relating to the subscription rights offered thereby. Upon receipt of payment and the subscription rights certificate properly completed and duly executed at the corporate trust office of the subscription rights agent or any other office indicated in the prospectus supplement, American Water will forward, as soon as practicable, the shares of preferred stock or common stock, depositary shares or warrants purchasable upon such exercise. American Water may determine to offer any unsubscribed offered securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as set forth in the applicable prospectus supplement.

DESCRIPTION OF WARRANTS

The following summary of certain provisions of the warrants does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the warrant agreement that will be filed with the SEC in connection with the offering of such warrants.

General

American Water may issue warrants for the purchase of debt securities, preferred stock or common stock. Warrants may be issued independently or together with debt securities, preferred stock or common stock offered by any prospectus supplement and may be attached to or separate from any such offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between American Water and a bank or trust company, as warrant agent. The warrant agent will act solely as American Water's agent in connection with the warrants and will not assume any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants.

Debt Warrants

The prospectus supplement relating to a particular issue of debt warrants will describe the terms of such debt warrants, including the following: (a) the title of such debt warrants; (b) the offering price for such debt warrants, if any; (c) the aggregate number of such debt warrants; (d) the designation and terms of the debt securities purchasable upon exercise of such debt warrants; (e) if applicable, the designation and terms of the debt securities with which such debt warrants are issued and the number of such debt warrants issued with each such debt security; (f) if applicable, the date from and after which such debt warrants and any debt securities issued therewith will be separately transferable; (g) the principal amount of debt securities purchasable upon exercise of a debt warrant and the price at which such principal amount of debt securities may be purchased upon exercise (which price may be payable in cash, securities, or other property); (h) the date on which the right to exercise such debt warrants shall commence and the date on which such right shall expire; (i) if applicable, the minimum or maximum amount of such debt warrants that may be exercised at any one time; (j) whether the debt warrants represented by the debt warrant certificates or debt securities that may be issued upon exercise of the debt warrants will be issued in registered or bearer form; (k) information with respect to book-entry procedures, if any; (l) the currency or currency units in which the offering price, if any, and the exercise price are payable; (m) if applicable, a discussion of material United States federal income tax considerations; (n) the antidilution provisions of such debt warrants, if any; (o) the redemption or call provisions, if any, applicable to such debt warrants; and (p) any additional terms of such debt warrants, including terms, procedures, and limitations relating to the exchange and exercise of such debt warrants.

Stock Warrants

The prospectus supplement relating to any particular issue of preferred stock warrants or common stock warrants will describe the terms of such warrants, including the following: (a) the title of such warrants; (b) the offering price for such warrants, if any; (c) the aggregate number of such warrants; (d) the designation and terms of the common stock or preferred stock purchasable upon exercise of such warrants; (e) if applicable, the designation and terms of the offered securities with which such warrants are issued and the number of such warrants issued with each such offered security; (f) if applicable, the date from and after which such warrants and any offered securities issued therewith will be separately transferable; (g) the number of shares of common stock or preferred stock purchasable upon exercise of a warrant and the price at which such shares may be purchased upon exercise; (h) the date on which the right to exercise such warrants shall commence and the date on which such right shall expire; (i) if applicable, the minimum or maximum amount of such warrants that may be exercised at any one time; (j) the currency or currency units in which the offering price, if any, and the exercise price are payable, (k) if applicable, a discussion of material United States federal income tax considerations; (l) the antidilution provisions of such warrants, if any; (m) the redemption or call provisions, if any, applicable to such warrants; and (n) any additional terms of such warrants, including terms, procedures and limitations relating to the exchange and exercise of such warrants.

PLAN OF DISTRIBUTION

We and any selling security holder may offer and sell the securities covered by this prospectus from time to time, in one or more transactions, at market prices prevailing at the time of sale, at prices related to market prices, at a fixed price or prices subject to change, at varying prices determined at the time of sale or at negotiated prices, by a variety of methods, including the following:

- through agents;
- to or through underwriters;
- through brokers or dealers;
- directly by us or any selling security holders to purchasers, including through a specific bidding, auction or other process; or
- through a combination of any of these methods of sale.

Registration of the securities covered by this prospectus does not mean that those securities necessarily will be offered or sold.

In effecting sales, brokers or dealers engaged by us may arrange for other brokers or dealers to participate. Broker-dealer transactions may include:

- purchases of the securities by a broker-dealer as principal and resales of the securities by the broker-dealer for its account pursuant to this prospectus;
- ordinary brokerage transactions; or
- transactions in which the broker-dealer solicits purchasers.

In addition, we and any selling security holder may sell any securities covered by this prospectus in private transactions or under Rule 144 of the Securities Act rather than pursuant to this prospectus.

In connection with the sale of securities covered by this prospectus, broker-dealers may receive commissions or other compensation from us in the form of commissions, discounts or concessions. Broker-dealers may also receive compensation from purchasers of the securities for whom they act as agents or to whom they sell as principals or both. Compensation as to a particular broker-dealer may be in excess of customary commissions or in amounts to be negotiated. In connection with any underwritten offering, underwriters may receive compensation in the form of discounts, concessions or commissions from us or from purchasers of the securities for whom they act as agents. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Any underwriters, broker-dealers, agents or other persons acting on our behalf that participate in the distribution of the securities may be deemed to be “underwriters” within the meaning of the Securities Act, and any profit on the sale of the securities by them and any discounts, commissions or concessions received by any of those underwriters, broker-dealers agents or other persons may be deemed to be underwriting discounts and commissions under the Securities Act.

In connection with the distribution of the securities covered by this prospectus or otherwise, we or any selling security holder may enter into hedging transactions with broker-dealers or other financial institutions. In connection with such transactions, broker-dealers or other financial institutions may engage in short sales of our securities in the course of hedging the positions they assume with us or any selling security holder. We or any selling security holder may also sell securities short and deliver the securities offered by this prospectus to close out our short positions. We or any selling security holder may also enter into option or other transactions with broker-dealers or other financial institutions, which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial

institution may resell pursuant to this prospectus, as supplemented or amended to reflect such transaction. We or any selling security holder may also from time to time pledge our securities pursuant to the margin provisions of our customer agreements with our brokers. Upon our default, the broker may offer and sell such pledged securities from time to time pursuant to this prospectus, as supplemented or amended to reflect such transaction.

At any time a particular offer of the securities covered by this prospectus is made, a revised prospectus or prospectus supplement, if required, will be distributed which will set forth the aggregate amount of securities covered by this prospectus being offered and the terms of the offering, including the name or names of any underwriters, dealers, brokers or agents, any discounts, commissions, concessions and other items constituting compensation from us and any discounts, commissions or concessions allowed or reallocated or paid to dealers. Such prospectus supplement, and, if necessary, a post-effective amendment to the registration statement of which this prospectus is a part, will be filed with the SEC to reflect the disclosure of additional information with respect to the distribution of the securities covered by this prospectus. In order to comply with the securities laws of certain states, if applicable, the securities sold under this prospectus may only be sold through registered or licensed broker-dealers. In addition, in some states the securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from registration or qualification requirements is available and is complied with.

We may solicit offers to purchase directly. Offers to purchase securities also may be solicited by agents designated by us from time to time. Any such agent involved in the offer or sale of the securities in respect of which this prospectus is delivered will be named, and any commissions payable by us to such agent will be set forth, in the applicable prospectus supplement. Unless otherwise indicated in such prospectus supplement, any such agent will be acting on a reasonable best efforts basis for the period of its appointment. Any such agent may be deemed to be an underwriter, as that term is defined in the Securities Act of 1933, of the securities so offered and sold.

American Water may offer its equity securities into an existing trading market on the terms described in the applicable prospectus supplement. Underwriters, dealers and agents who may participate in any at-the-market offerings will be described in the prospectus supplement relating thereto.

Securities may also be offered and sold, if so indicated in the applicable prospectus supplement, in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more firms acting as principals for their own accounts or as agents for us, which we refer to as remarketing firms. Any remarketing firm will be identified and the terms of its agreement, if any, with us and its compensation will be described in the applicable prospectus supplement. Remarketing firms may be deemed to be underwriters, as that term is defined in the Securities Act of 1933, in connection with the securities remarketed thereby.

If so indicated in the applicable prospectus supplement, we may authorize agents, dealers or underwriters to solicit offers by certain institutions to purchase securities from us at the public offering price set forth in the applicable prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in the applicable prospectus supplement. Such delayed delivery contracts will be subject to only those conditions set forth in the applicable prospectus supplement. A commission indicated in the applicable prospectus supplement will be paid to underwriters and agents soliciting purchases of securities pursuant to delayed delivery contracts accepted by us.

In connection with an underwritten offering, we and any selling security holder would execute an underwriting agreement with an underwriter or underwriters. Unless otherwise indicated in the revised prospectus or applicable prospectus supplement, such underwriting agreement would provide that the obligations of the underwriter or underwriters are subject to certain conditions precedent, and that the underwriter or underwriters with respect to a sale of the covered securities will be obligated to purchase all of the covered securities, if any such securities are purchased. We or any selling security holder may grant to the underwriter or

underwriters an option to purchase additional securities at the public offering price, less any underwriting discount, as may be set forth in the revised prospectus or applicable prospectus supplement. If we or any selling security holder grants any such option, the terms of that option will be set forth in the revised prospectus or applicable prospectus supplement.

Pursuant to a requirement by the Financial Industry Regulatory Authority, which we refer to as FINRA, the maximum commission or discount to be received by any FINRA member or independent broker/dealer may not be greater than 8% of the aggregate amount of securities offered pursuant to this prospectus and any applicable prospectus supplement.

Underwriters, agents, brokers or dealers may be entitled, pursuant to relevant agreements entered into with us, to indemnification by us or any selling security holder against certain civil liabilities, including liabilities under the Securities Act that may arise from any untrue statement or alleged untrue statement of a material fact, or any omission or alleged omission to state a material fact in this prospectus, any supplement or amendment hereto, or in the registration statement of which this prospectus forms a part, or to contribution with respect to payments which the underwriters, agents, brokers or dealers may be required to make.

LEGAL MATTERS

The validity of the securities offered in this prospectus and any related prospectus supplement and certain legal matters will be passed upon for us by Morgan, Lewis & Bockius LLP, New York, New York. If the securities are being distributed in an underwritten offering, certain legal matters will be passed upon for the underwriters by counsel identified in the related prospectus supplement.

EXPERTS

The consolidated financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2011, have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. These SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov> and our website at <http://www.amwater.com>. You may also read and copy any document we file with the SEC at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room.

We are "incorporating by reference" into this prospectus specific documents that we file with the SEC, which means that we can disclose important information to you by referring you to those documents that are considered part of this prospectus. Information that we file subsequently with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below, and any future documents that we file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act", until the termination of the offerings of all of the securities covered by this prospectus. This prospectus is part of a registration statement filed with the SEC.

We are "incorporating by reference" into this prospectus the following documents filed with the SEC (excluding any portions of such documents that have been "furnished" but not "filed" for purposes of the Exchange Act):

<u>Filings</u>	<u>Period Covered or Date Filed</u>
Annual Report on Form 10-K, including the portions of our Proxy Statement on Schedule 14A filed on March 30, 2012 that are incorporated therein	Year ended December 31, 2011
Quarterly Report on Form 10-Q	Quarter ended March 31, 2012
Current Reports on Form 8-K (other than the portions not deemed to be filed)	Filed on March 30, 2012
Registration Statement on Form 8-A for a description of our common stock, par value \$0.01 per share	Filed on April 22, 2008, including any amendments or reports filed to update such description.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request and without charge, a copy of the documents referred to above that we have incorporated

in this prospectus by reference. You can request copies of such documents if you call or write us at the following address or telephone number: American Water Works Company, Inc., 1025 Laurel Oak Road, Voorhees, New Jersey 08043, Attention: General Counsel, (856) 346-8200.

This prospectus, any accompanying prospectus supplement or information incorporated by reference herein or therein, contains summaries of certain agreements that we have filed as exhibits to various SEC filings, as well as certain agreements that we will enter into in connection with the offering of securities covered by any particular accompanying prospectus supplement. The descriptions of these agreements contained in this prospectus, any accompanying prospectus supplement or information incorporated by reference herein or therein do not purport to be complete and are subject to, and qualified in their entirety by reference to, the definitive agreements. Copies of the definitive agreements will be made available without charge to you by making a written or oral request to us.

You should rely only upon the information contained in this prospectus, any prospectus supplement or incorporated by reference in this prospectus or in any prospectus supplement. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than that on the front cover of this prospectus.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein, in any other subsequently filed document which also is or is deemed to be incorporated by reference herein or in any accompanying prospectus supplement, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified and superseded, to constitute a part of this prospectus.

\$300,000,000



AMERICAN WATER

American Water Capital Corp.

4.300% Senior Notes due 2042

Prospectus Supplement dated December 12, 2012

Joint Book-Running Managers

**BofA Merrill Lynch
Goldman, Sachs & Co.
RBS**

Co-Managers

**PNC Capital Markets
US Bancorp
TD Securities
BNY Mellon Capital Markets, LLC**

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As filed with the Securities and Exchange Commission on May 4, 2012

Registration No. 333-

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**FORM S-3
REGISTRATION STATEMENT**
*UNDER
THE SECURITIES ACT OF 1933*

**AMERICAN WATER WORKS COMPANY,
INC.**

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation)

51-0063696
(I.R.S. Employer Identification No.)

AMERICAN WATER CAPITAL CORP.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation)

22-3732448
(I.R.S. Employer Identification No.)

**1025 Laurel Oak Road
Voorhees, NJ 08043
(856) 346-8200**

(Address, including zip code, and telephone number, including area code, of registrants' principal executive offices)

Jeffrey E. Sterba
President and Chief Executive Officer
American Water Works Company, Inc.
1025 Laurel Oak Road
Voorhees, NJ 08043
(856) 346-8200

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Kellye L. Walker, Esq.
Senior Vice President, General Counsel and Secretary
American Water Capital Corp.
1025 Laurel Oak Road
Voorhees, NJ 08043
(856) 346-8200

Copies to:
Alan Singer, Esq.
Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, Pennsylvania 19103
(215) 963-5000

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans,

please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

	Large Accelerated Filer	Accelerated Filer	Non- accelerated Filer	Smaller Reporting Company
American Water Works Company, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
American Water Capital Corp.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Unit	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(1)
American Water Works Company, Inc. Common Stock, \$0.01 par value(2)				
American Water Works Company, Inc. Preferred Stock(2)				
American Water Capital Corp. Debt Securities				
American Water Works Company, Inc. Support Agreement(3)				
American Water Works Company, Inc. Depositary Shares(4)				
American Water Works Company, Inc. Stock Purchase Contracts				
American Water Works Company, Inc. Stock Purchase Units				
American Water Works Company, Inc. Subscription Rights(5)				
American Water Works Company, Inc. Warrants				

- (1) An unspecified aggregate initial offering price or number of or amount of securities of each identified class is being registered as may from time to time be offered hereunder at indeterminate prices. Separate consideration may or may not be received for securities that are issuable on exercise, conversion or exchange of other securities. In accordance with Rules 456(b) and 457(r) under the Securities Act of 1933, the registrant is deferring payment of the entire registration fee. Securities registered hereunder may be sold either separately or as units comprising more than one type of security registered hereunder.
- (2) Shares of preferred stock or common stock may be issued in primary offerings or upon conversion of debt securities, warrants or preferred stock registered hereby.
- (3) The American Water Works Company, Inc. Support Agreement will be offered as a component of American Water Capital Corp. Debt Securities for no additional consideration.
- (4) The depositary shares registered hereunder will be evidenced by depositary receipts issued pursuant to a depositary agreement. If the registrant elects to offer to the public fractional interests in shares of preferred stock, then depositary receipts will be distributed to those persons purchasing the fractional interests and the shares will be issued to the depositary under the depositary agreement.
- (5) Rights evidencing the right to purchase common stock, preferred stock, depositary shares or warrants.

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American Water Works Company, Inc.

Common Stock Preferred Stock Support Agreement Depository Shares Stock Purchase Contracts Stock Purchase Units Subscription Rights Warrants

American Water Capital Corp. Debt Securities

The securities covered by this prospectus may be sold by American Water Works Company, Inc., or American Water, from time to time, independently or together with American Water Capital Corp., or AWCC, a wholly-owned subsidiary of American Water Works Company, Inc. Any debt securities issued by AWCC will have the benefit of a support agreement from American Water. In addition, selling security holders who may be named in a prospectus supplement may offer and sell from time to time securities in such amounts as set forth in such prospectus supplement. We may, and any selling security holder may, offer the securities independently or together in any combination for sale directly to purchasers or through underwriters, dealers or agents to be designated at a future date. We may, and any selling security holder may, offer and sell these securities in amounts, at prices and on terms determined at the time of the offering. Unless otherwise set forth in a prospectus supplement, we will not receive any proceeds from the sale of securities by any selling security holders.

When we offer securities, we will provide you with a prospectus supplement describing the specific terms of the specific issue of securities, including the offering price of the securities. Prospectus supplements may also add, update or change the information in this prospectus. You should carefully read this prospectus and the prospectus supplement relating to the specific issue of securities, together with the documents we incorporate by reference, before you decide to invest in any of these securities.

**THIS PROSPECTUS MAY NOT BE USED TO OFFER OR SELL ANY SECURITIES UNLESS
ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.**

American Water Works Company, Inc. common stock is listed on the New York Stock Exchange under the symbol "AWK."

Investing in these securities involves certain risks. See "[Risk Factors](#)" on page 3 of this prospectus. You should carefully review the risks and uncertainties described under the heading "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission, any state securities commission or any other regulatory body has approved or disapproved of these securities or passed on the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The securities may be offered and sold to or through underwriters, dealers, agents or other third parties as designated from time to time, or directly to one or more other purchasers or through a combination of such methods on a continuous or delayed basis. See "Plan of Distribution" on page 30. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names, and any applicable purchase price, fee, commission or discount arrangements between or among them, will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement.

The date of this prospectus is May 4, 2012.

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No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus. We have not authorized anyone to provide you with information that is different. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date and any information we have incorporated by reference is only accurate as of the date of the document incorporated by reference.

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Our regulated subsidiaries are subject to economic regulation by state Public Utility Commissions, which we refer to as state PUCs, in California, Hawaii, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, New Jersey, New York, Pennsylvania, Tennessee, Virginia and West Virginia. Some of these states have enacted laws that require regulatory approval for the acquisition of “control” of any regulated utility. In those states, obtaining “control” of the parent or any other company that controls a regulated utility also requires prior regulatory approval. The threshold for a change in control is a fact-specific inquiry that varies by state. For example, in some states, a presumption of control will arise when an acquiring party acquires more than 9.9% of the voting securities of the regulated utility or the controlling entity. In addition to ownership, other states may analyze the degree of influence or control an acquiror may exert over the company. Any person acquiring American Water’s common stock in an offering or in any other purchase of American Water’s common stock in a quantity sufficient to trigger a change in control under state law would need the prior approval of the applicable state Public Utility Commission.

[Table of Contents](#)**ABOUT THIS PROSPECTUS**

This prospectus is part of a registration statement that American Water Works Company, Inc., which we refer to as “American Water,” and American Water Capital Corp., which we refer to as “AWCC,” filed with the Securities and Exchange Commission, which we refer to as the “SEC,” using a “shelf” registration process. Under this shelf registration process, we, or certain of our security holders, may sell the securities described in this prospectus in one or more offerings from time to time. Each time we, or, under certain circumstances, our security holders, sell securities under this shelf registration, we will provide a prospectus supplement that will contain specific information about the terms of the offering. The prospectus supplement may also add to, modify or supersede the information contained in this prospectus. You should read both this prospectus and the applicable prospectus supplement together with the additional information referred to below under “Where You Can Find More Information.” If there is any inconsistency between the information in the prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement.

The prospectus supplement will describe: the terms of the securities offered, any initial public offering price, the price paid to us for the securities, the net proceeds to us, the manner of distribution and any underwriting compensation and the other specific material terms related to the offering of the applicable securities. For more detail on the terms of the securities, you should read the exhibits filed with or incorporated by reference in our registration statement of which this prospectus forms a part.

All references in this prospectus to “we,” “our” and “us” refer to American Water and its consolidated subsidiaries unless the context otherwise requires.

References to “securities” include any security that we or our security holders might sell under this prospectus or any prospectus supplement.

This prospectus contains summaries of certain provisions contained in some of the documents described herein. Please refer to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of the documents referred to herein have been filed, or will be filed or incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “Where You Can Find More Information.”

Pursuant to this registration statement, American Water and AWCC may offer, issue and sell securities as set forth on the cover page of this prospectus. Because American Water is a “well-known seasoned issuer,” as defined in Rule 405 of the Securities Act of 1933, as amended, which we refer to as the “Securities Act,” we may add to and offer additional securities, including securities held by security holders, by filing a prospectus supplement with the SEC at the time of the offer.

You should rely only on the information contained in this prospectus or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. The distribution of this prospectus and sale of these securities in certain jurisdictions may be restricted by law. Persons in possession of this prospectus are required to inform themselves about and observe any such restrictions. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate as of the date on the front cover of this prospectus only. Our business, financial condition, results of operations and prospects may have changed since that date.

AMERICAN WATER WORKS COMPANY, INC.

We are the most geographically diversified, as well as the largest publicly-traded, United States water and wastewater utility company, as measured by both operating revenue and population served. As a holding company, we conduct substantially all of our business operations through our subsidiaries. Our approximately 7,000 employees provide an estimated 15 million people with drinking water, wastewater and other water-related services in over 30 states and two Canadian provinces.

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We have two operating segments that are also our two reportable segments: the Regulated Businesses and the Market-Based Operations.

Our primary business involves the ownership of subsidiaries that provide water and wastewater utility services to residential, commercial, industrial and other customers, including sale for resale and public authority customers. Our subsidiaries that provide these services are generally subject to economic regulation by certain state commissions or other entities engaged in economic regulation, hereafter referred to as “PUCs”, in the states in which they operate. The federal government and the states also regulate environmental, health and safety, and water quality matters. We report the results of our primary business in the Regulated Businesses segment.

We also provide services that are not subject to economic regulation by state PUCs through our Market-Based Operations. Our Market-Based Operations include three lines of business:

- Contract Operations Group, which enters into contracts to operate and maintain water and wastewater facilities mainly for the United States military, municipalities, and the food and beverage industry;
- Homeowner Services Group, which provides services to domestic homeowners and smaller commercial establishments to protect against the cost of repairing broken or leaking water pipes and clogged or blocked sewer pipes inside and outside their accommodations; and
- Terratec Environmental Ltd., which primarily provides biosolids management, transport and disposal services to municipal and industrial customers.

AMERICAN WATER CAPITAL CORP.

AWCC is a wholly-owned finance subsidiary of American Water. AWCC’s activities are limited to borrowing funds through the issuance of debt securities or through credit agreements with institutional lenders and lending those funds under loan agreements to our operating subsidiaries.

[Table of Contents](#)**RISK FACTORS**

An investment in our securities involves risk. Before you invest in securities issued by us, you should carefully consider the risks involved. Accordingly, you should carefully consider:

- the information contained in or incorporated by reference into this prospectus;
- the information contained in or incorporated by reference into any prospectus supplement relating to specific offerings of securities;
- the risks described in our Annual Report on Form 10-K for our most recent fiscal year and in any Quarterly Report on Form 10-Q which we have filed since our most recent Annual Report on Form 10-K, each of which is incorporated by reference into this prospectus; and
- other risks and other information that may be contained in, or incorporated by reference from, other filings we make with the SEC, including in any prospectus supplement relating to specific offerings of securities.

The discussion of risks related to our business contained in or incorporated by reference into this prospectus or into any prospectus supplement comprises material risks of which we are aware. If any of the events or developments described actually occurs, our business, financial condition or results of operations would likely suffer.

You should also be aware that new risks may emerge in the future at any time, and we cannot predict such risks or estimate the extent to which they may affect our business, financial condition or results of operations. The prospectus supplement applicable to each type or series of securities we offer may contain a discussion of additional risks applicable to an investment in us and the particular type of securities we are offering under that prospectus supplement.

[Table of Contents](#)**FORWARD-LOOKING STATEMENTS**

In connection with the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, American Water and AWCC are herein filing cautionary statements identifying important factors that could cause American Water's and AWCC's actual results to differ materially from those projected in forward-looking statements (as such term is defined in the Private Securities Litigation Reform Act of 1995) made by or on behalf of American Water and AWCC in this prospectus or any supplement to this prospectus, in presentations, in response to questions or otherwise. Any statements that express, or involve discussions as to, expectations, beliefs, plans, objectives, assumptions, future events or performance, climate change strategy or growth strategies (often, but not always, through the use of words or phrases such as "will," "will likely result," "are expected to," "will continue," "aim," "is anticipated," "believe," "could," "should," "would," "estimated," "may," "plan," "potential," "projection," "target," "outlook," "predict," and "intend" or words of similar meaning) are not statements of historical facts and may be forward-looking. Forward-looking statements involve estimates, assumptions and uncertainties. Accordingly, any such statements are qualified in their entirety by reference to, and are accompanied by, the specific factors discussed in "Risk Factors" herein and in American Water's reports that are incorporated herein by reference (in addition to any assumptions and other factors referred to specifically in connection with such forward-looking statements) that could have a significant impact on American Water's and AWCC's operations and financial results, and could cause American Water's or AWCC's actual results to differ materially from those contained or implied in forward-looking statements made by or on behalf of American Water or AWCC.

Any forward-looking statement speaks only as of the date on which that statement is made, and neither American Water nor AWCC undertakes any obligation to update any forward-looking statement to reflect events or circumstances, including unanticipated events, after the date on which that statement is made, unless otherwise required by law. New factors emerge from time to time and it is not possible for management to predict all of those factors, nor can it assess the impact of each of those factors on the business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statement.

The issues and associated risks and uncertainties discussed in "Risk Factors" herein and in the reports that are incorporated herein by reference are not the only ones American Water or AWCC may face. Additional issues may arise or become material as the energy industry evolves. The risks and uncertainties associated with those additional issues could impair American Water's and AWCC's businesses in the future.

[Table of Contents](#)**SELLING SECURITY HOLDERS**

We may register securities covered by this prospectus for re-offers and resales by any selling security holders who may be named in a prospectus supplement. Because American Water is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act, we may add secondary sales of securities by any selling security holders by filing a prospectus supplement with the SEC. We may register these securities to permit selling security holders to resell their securities when they deem appropriate. A selling security holder may resell all, a portion or none of their securities at any time and from time to time. We may register those securities for sale through an underwriter or other plan of distribution as set forth in a prospectus supplement. See "Plan of Distribution." Selling security holders may also sell, transfer or otherwise dispose of some or all of their securities in transactions exempt from the registration requirements of the Securities Act. We may pay all expenses incurred with respect to the registration of the securities owned by the selling security holders, other than underwriting fees, discounts or commissions, which will be borne by the selling security holders. We will provide you with a prospectus supplement naming the selling security holders, the amount of securities to be registered and sold and any other terms of the securities being sold by a selling security holder.

USE OF PROCEEDS

Unless we inform you otherwise in a prospectus supplement or free writing prospectus, we intend to use the net proceeds from the sale of the securities for general corporate purposes, including working capital, infrastructure improvements and other capital expenditures, acquisitions, the repayment of indebtedness and repurchase of common stock. Unless otherwise set forth in a prospectus supplement, we will not receive any proceeds from any sales of our securities by any selling security holder who may be named in a prospectus supplement.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

For purposes of calculating the ratio of earnings to fixed charges, earnings consists of income (loss) from continuing operations before income taxes including the effect of allowance for funds used during construction, which we refer to as AFUDC, plus fixed charges. Fixed charges consist of interest expense, amortization of debt issuance costs, and a portion of rent expense that management believes is representative of the interest component of rental expense. Fixed charges have not been reduced for the effect of AFUDC. In addition, we had no preferred stock outstanding for any period presented, and accordingly, the ratio of earnings to combined fixed charges and preferred stock dividends is the same as the ratio of earnings to fixed charges.

The ratio of earnings to fixed charges was less than 1.00x for the periods indicated in the table below.

American Water's and AWCC's ratios of earnings to fixed charges for each of the periods indicated are as follows:

	Year ended December 31,					Quarter
	2007	2008	2009	2010	2011	ended March 31, 2012
American Water Works Company, Inc						
Ratio of Earnings to Fixed Charges(1)	—	—	—	2.26	2.50	2.01
American Water Capital Corp.						
Ratio of Earnings to Fixed Charges	1.00	1.00	1.00	1.00	1.00	1.00

(1) For the years ended December 31, 2007, 2008 and 2009, earnings were insufficient to cover fixed charges and there were deficiencies of \$238.8 million, \$420.6 million and \$106.3 million, respectively.

Table of Contents**DESCRIPTION OF CAPITAL STOCK**

The following description of American Water's common stock and preferred stock will apply generally to any future common stock or preferred stock that American Water may offer, but is not complete. We will describe the particular terms of any class or series of these securities in more detail in the applicable prospectus supplement. The terms of these securities also may be affected by the General Corporation Law of the State of Delaware, which we refer to below as the DGCL. For more information regarding the common stock and preferred stock that may be offered by this prospectus, please refer to American Water's restated certificate of incorporation, which we refer to below as American Water's "certificate of incorporation," and American Water's amended and restated bylaws, which we refer to below as American Water's "bylaws." The certificate of incorporation and bylaws are incorporated by reference as exhibits to the registration statement of which this prospectus is a part.

General

American Water's authorized capital stock consists of 500,000,000 shares of common stock, par value \$0.01 per share, and 50,000,000 shares of preferred stock.

Common Stock***Voting Rights***

Except as otherwise required by law, all matters to be voted on by American Water's stockholders must be approved by a majority of the votes cast by all shares of common stock.

Dividends

Holders of common stock will share equally in any dividend declared by American Water's board of directors, subject to the rights of the holders of any outstanding preferred stock.

Liquidation Rights

In the event of any voluntary or involuntary liquidation, dissolution or winding up of American Water's affairs, holders of American Water's common stock would be entitled, after payment of the liquidation preference to all holders of any outstanding preferred stock, to share ratably in American Water's assets that are legally available for distribution to stockholders after payment of liabilities. American Water must pay the applicable distribution to any holders of its preferred stock before it may pay distributions to the holders of its common stock.

Other Rights

American Water's stockholders have no preemptive or other rights to subscribe for additional shares.

Preferred Stock

American Water's authorized preferred stock consists of 50 million shares of preferred stock, \$0.01 par value. No shares of preferred stock are outstanding as of the date of this prospectus.

American Water's board of directors may authorize the issuance of preferred stock from time to time in one or more series, without stockholder approval. Subject to the limits imposed by the DGCL, the board of directors is authorized to fix for any series of preferred stock the number of shares of such series and the voting powers (if any), designation, preferences and relative, participating, optional or other special rights, and qualifications, limitations or restrictions of such series. American Water's board of directors is also authorized to increase or decrease the number of shares of any series, but not below the number of shares of that series then outstanding, without any further vote or action by American Water's stockholders.

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American Water's board of directors may authorize the issuance of preferred stock with voting or conversion rights that affect adversely the voting power or other rights of American Water's common stockholders. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could have the effect of delaying, deferring or preventing a change in control, causing the market price of American Water's common stock to decline, or impairing the voting and other rights of the holders of American Water's common stock. You should read both this prospectus and the applicable prospectus supplement together with the additional information referred to below under "Where You Can Find More Information."

For any series of preferred stock that American Water may issue, American Water's board of directors will determine and the prospectus supplement relating to such series will describe:

- The number of shares constituting such series and the distinctive designation of the series;
- The dividend rate on the shares of the series, the conditions and dates upon which dividends thereon shall be payable, the extent, if any, to which dividends thereon shall be cumulative, and the relative rights of preference, if any, of payment of dividends thereon;
- Whether or not the shares of the series are redeemable and, if redeemable, the time or times during which they shall be redeemable and the amount per share payable on redemption thereof, which amount may, but need not, vary according to the time and circumstances of such redemption;
- The amount payable in respect of the shares of the series, in the event of any liquidation, dissolution or winding up of American Water, which amount may, but need not, vary according to the time or circumstances of such action, and the relative rights of preference, if any, of payment of such amount;
- Any requirement as to a sinking fund for the shares of the series, or any requirement as to the redemption, purchase or other retirement by American Water of the shares of the series;
- The right, if any, to exchange or convert shares of the series into other securities or property, and the rate or basis, time, manner and condition of exchange or conversion;
- The voting rights, if any, to which the holders of shares of the series shall be entitled in addition to the voting rights provided by law; and
- Any other term, condition or provision with respect to the series not inconsistent with the provisions of American Water's certificate of incorporation or any resolution adopted by the board of directors pursuant thereto.

Certain Anti-Takeover Provisions of American Water's Certificate of Incorporation and Bylaws and Delaware Law

The following provisions of American Water's certificate of incorporation and bylaws could deter, delay or prevent a third party from acquiring American Water, even if doing so would benefit American Water's stockholders.

Undesignated Preferred Stock

The ability to authorize undesignated preferred stock makes it possible for American Water's board of directors to authorize the issuance of preferred stock with super voting, special approval, dividend or other rights or preferences on a discriminatory basis that could impede the success of any attempt to acquire American Water. These and other provisions may have the effect of deferring, delaying or discouraging hostile takeovers, or changes in control or management of American Water.

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Requirements for Advance Notification of Stockholder Meetings, Nominations and Proposals

American Water's bylaws provide that special meetings of stockholders may be called only upon the request of the majority of American Water's board of directors, upon request of the Chairman of American Water's board of directors, upon request of American Water's President or upon request of stockholders holding at least 15% of American Water's outstanding common stock. American Water's bylaws prohibit the conduct of any business at a special meeting other than as specified in the notice for such meeting.

American Water's bylaws establish advance notice procedures with respect to stockholder proposals for annual meetings and the nomination of candidates for election as directors, other than nominations made by or at the direction of American Water's board of directors or a committee of the board of directors. A stockholder who wishes to bring a matter before a meeting must comply with American Water's advance notice requirements and provide us with certain information. Additionally, vacancies and newly created directorships may be filled only by a vote of a majority of the directors then in office, even though less than a quorum, or by stockholders. These provisions may defer, delay or discourage a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of American Water.

Stockholder Action by Written Consent

Under Section 228 of the DGCL, unless a company's certificate of incorporation provides otherwise, any action required to be taken at any annual or special meeting of stockholders may be taken without a meeting, without prior notice and without a vote if a consent or consents in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares of American Water's common stock entitled to vote thereon were present and voted. As permitted by Section 228 of the DGCL, American Water's certificate of incorporation provides otherwise: any action required or permitted to be taken by American Water's stockholders must be effected at a duly called annual or special meeting of American Water's stockholders and may not be effected by consent in writing by such stockholders.

Certain Other Provisions of American Water's Certificate of Incorporation and Bylaws and Delaware Law

Board of Directors

American Water's certificate of incorporation provides that the number of directors is fixed in the manner provided in American Water's bylaws. American Water's bylaws provide that the number of directors will be fixed from time to time by American Water's board. American Water's board of directors currently consists of nine members.

Business Combinations under Delaware Law

American Water is subject to Section 203 of the DGCL, which prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the time the stockholder became an interested stockholder, subject to certain exceptions, including if, prior to such time, the board of directors approved the business combination or the transaction which resulted in the stockholder becoming an interested stockholder. "Business combinations" include mergers, asset sales and other transactions resulting in a financial benefit to the "interested stockholder." Subject to various exceptions, an "interested stockholder" is a person who, together with his or her affiliates and associates, owns, or within the prior three years did own, 15% or more of the corporation's outstanding voting stock. These restrictions generally prohibit or delay the accomplishment of mergers or other takeover or change-in-control attempts that are not approved by a company's board of directors.

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Limitations of Liability and Indemnification of Officers and Directors

The DGCL authorizes corporations to limit or eliminate the personal liability of directors to corporations and their stockholders for monetary damages for breaches of directors' fiduciary duties. American Water's certificate of incorporation includes a provision that eliminates the personal liability of directors for monetary damages for actions taken as a director to the fullest extent authorized by the DGCL. The DGCL does not permit exculpation for liability:

- for breach of duty of loyalty;
- for acts or omissions not in good faith or involving intentional misconduct or knowing violation of law;
- under Section 174 of the DGCL (relating to unlawful dividends or stock repurchases); or
- for transactions from which the director derived improper personal benefit.

American Water's certificate of incorporation and bylaws provide that it will indemnify its directors and officers to the fullest extent permitted by law. American Water's bylaws also expressly authorize American Water to carry directors' and officers' insurance providing indemnification for American Water's directors, officers and certain employees and agents for some liabilities. We believe that these indemnification provisions and insurance are useful to attract and retain qualified directors and officers.

The limitation of liability and indemnification provisions in American Water's certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duty. These provisions may also have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit American Water and its stockholders. In addition, your investment may be adversely affected to the extent American Water pays the costs of settlement and damage awards against directors and officers in accordance with these indemnification provisions.

Transfer Agent and Registrar

American Stock Transfer & Trust Company, Inc. serves as the registrar and transfer agent for American Water's common stock.

New York Stock Exchange Listing

American Water's common stock is listed on the New York Stock Exchange under the trading symbol "AWK."

Table of Contents**DESCRIPTION OF AWCC DEBT SECURITIES AND AMERICAN WATER
SUPPORT AGREEMENT**

The following description of the terms of the debt securities sets forth certain general terms and provisions of the debt securities to which any prospectus supplement may relate. The particular terms of the debt securities offered by any prospectus supplement and the extent, if any, to which these general provisions may apply to those debt securities will be described in the prospectus supplement relating to those debt securities. Accordingly, for a description of the terms of a particular issue of debt securities, reference must be made to both the prospectus supplement relating thereto and to the following description.

AWCC may issue debt securities from time to time in one or more series. The debt securities will be general obligations of AWCC. Any debt securities issued by AWCC will have the benefit of a support agreement from American Water. In the event that any series of debt securities will be subordinated to other indebtedness that AWCC has outstanding or may incur, the terms of the subordination will be set forth in the prospectus supplement relating to the subordinated debt securities. We expect that each series of debt securities will be issued under an indenture dated as of December 4, 2009, between AWCC and Wells Fargo Bank, National Association, as trustee, as the same may be amended or supplemented from time to time. The indenture and the form of supplemental indenture or other instrument establishing the debt securities of a particular series are filed as exhibits to, or will be subsequently incorporated by reference into, the registration statement of which this prospectus is a part. There is no requirement under the indenture that our future issuances of debt securities be issued exclusively under the indenture, and we will be free to employ other indentures or documentation, containing provisions different from those included in the indenture or applicable to one or more issuances of debt securities debt securities in connection with future issuances of other debt securities.

The following discussion of certain provisions of the indenture is a summary only and should not be considered a complete description of the terms and provisions of the indenture. Accordingly, the following discussion is qualified in its entirety by reference to the provisions of the indenture, including the definition of certain terms used below.

General

The debt securities represent direct, unsecured, general obligations of AWCC and:

- may rank equally with other unsubordinated debt or may be subordinated to other debt AWCC has or may incur;
- may be issued in one or more series with the same or various maturities;
- may be issued at a price of 100% of their principal amount or at a premium or discount;
- may be issued in registered or bearer form and certificated or uncertificated form;
- may be represented by one or more global securities registered in the name of a designated depository's nominee, and if so, beneficial interests in the global debt security will be shown on and transfers will be made only through records maintained by the designated depository and its participants; and
- will have the benefit of a support agreement, dated June 22, 2000, and amended on July 26, 2000, between AWCC and American Water; which we refer to as the support agreement.

The aggregate principal amount of debt securities that AWCC may authenticate and deliver is unlimited. The debt securities may be issued in one or more series as we may authorize from time to time. You should refer to the applicable prospectus supplement for the following terms of the debt securities of the series with respect to which that prospectus supplement is being delivered:

- (1) the title of the debt securities of the series (which shall distinguish the debt securities of that particular series from the debt securities of any other series);
- (2) the price or prices of the debt securities of the series;

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- (3) any limit upon the aggregate principal amount of the debt securities of the series which may be authenticated and delivered under the indenture (except for debt securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other debt securities of the series and except for any debt securities which are deemed never to have been authenticated and delivered);
- (4) the person to whom any interest on a debt security of the series shall be payable, if other than the person in whose name that debt security (or one or more predecessor securities) is registered at the close of business on the regular record date for such interest;
- (5) the date or dates on which the principal and premium of any debt securities of the series are payable;
- (6) the rate or rates (which may be fixed or variable) at which any debt securities of the series shall bear interest (if any), or the method of determining such rate or rates, the date or dates from which any such interest shall accrue, the interest payment dates on which any such interest shall be payable, and the regular record date for any such interest payable on any interest payment date;
- (7) the period or periods within which, the price or prices at which and the terms and conditions upon which any debt securities of the series may be redeemed, in whole or in part, at the option of AWCC (including without limitation the number of basis points specified for such series for purposes of determining any make-whole amount in respect thereof, and any reference treasury dealers for such series) and, if other than by a board resolution, the manner in which any election by AWCC to redeem the debt securities shall be evidenced;
- (8) the obligation, if any, of AWCC to redeem or purchase any debt securities of the series at the option of the holder thereof, or at the option of any other person, and the period or periods within which, the price or prices at which and the terms and conditions upon which any debt securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- (9) if other than the currency of the United States of America, the currency, currencies or currency units in which the principal of or any premium or interest on any debt securities of the series shall be payable and the manner of determining the equivalent thereof in the currency of the United States of America for any purpose, and such other or additional provisions (including, without limitation, in respect of defeasance and covenant defeasance) as shall be necessary and desirable in connection therewith;
- (10) if other than the entire principal amount thereof, the portion of the principal amount of any debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;
- (11) if the principal amount payable at the stated maturity of any debt securities of the series will not be determinable as of any one or more dates prior to the stated maturity, the amount which shall be deemed to be the principal amount of such debt securities as of any such date for any purpose thereunder or hereunder, including the principal amount thereof which shall be due and payable upon any maturity other than the stated maturity or which shall be deemed to be outstanding as of any date prior to the stated maturity (or, in any such case, the manner in which such amount deemed to be the principal amount shall be determined);
- (12) if applicable, that any debt securities of the series shall be issuable in whole or in part in the form of one or more debt securities in registered, global form without interest coupons, which we refer to as global securities, and in such case, the respective depositaries for such global securities, the form of any legend or legends which shall be borne by any such global security, whether such global securities shall be in the form of registered securities, restricted securities or Regulation S securities and any circumstances in which any such global security may be exchanged in whole or in part for debt securities registered, and any transfer of such global security in whole or in part may be registered, in the name or names of persons other than the depositary for such global security or a nominee thereof;
- (13) the terms, if any, upon which the debt securities of the series may be convertible into or exchanged for AWCC's other debt securities or other securities of any kind and the terms and conditions upon which such conversion or exchange shall be effected, including the initial conversion or exchange price or rate, the conversion or exchange period and any other additional provisions;

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- (14) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the debt securities of the series shall be issuable;
- (15) if the amount of principal, premium or interest with respect to the debt securities of the series may be determined with reference to an index or pursuant to a formula, the manner in which such amounts will be determined;
- (16) any changes or additions to the provisions of the indenture dealing with defeasance;
- (17) the terms, if any, of the transfer, mortgage, pledge or assignment as security for the debt securities of the series of any properties, assets, moneys, proceeds, securities or other collateral, including whether certain provisions of the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act, are applicable and any corresponding changes to provisions of the indenture as then in effect;
- (18) any addition to or change in the events of default with respect to any debt securities of the series and any change in the right of the trustee or the holders of such series of debt securities to declare the principal, premium and interest, if any, on such series of debt securities due and payable;
- (19) any trustee, authenticating agent, paying agent, transfer agent or registrar;
- (20) the applicability of, and any addition to or change in, the covenants and definitions then set forth in the indenture;
- (21) the subordination, if any, of the debt securities of the series pursuant to the indenture and any changes or additions to the provisions of the indenture relating to subordination;
- (22) with regard to debt securities of the series that do not bear interest, the dates for certain required reports to the trustee;
- (23) any U.S. Federal Income tax consequences applicable to the debt securities; and
- (24) any other terms of the series.

All debt securities of any one series need not be issued at the same time and may be issued from time to time, consistent with the terms of the indenture, if so provided by or pursuant to a board resolution, supplemental indenture or officers' certificate, and the authorized principal amount of any series may not be increased to provide for issuances of additional debt securities of such series, unless otherwise provided in such board resolution, supplemental indenture or officers' certificate.

Support Agreement

AWCC's debt is supported by the support agreement. The support agreement, which, under the circumstances described below, is the functional equivalent of a guarantee, provides, among other things, that:

- American Water owns, and during the term of the support agreement shall continue to own, all of the voting stock of AWCC free and clear of any lien, security interest or other charge or encumbrance;
- American Water will provide to AWCC, at its request or the request of any lender (including any holder of debt securities), funds in the form of cash or liquid assets (as equity or, if American Water and AWCC agree, as a loan subordinated to any and all indebtedness, whether or not that indebtedness is outstanding at the time of the loan) as required if AWCC is unable to make timely payment of interest, principal or premium, if any, on any indebtedness issued by it;
- American Water will cause AWCC to have at all times a positive tangible net worth (total assets less liabilities less intangible assets), as determined in accordance with generally accepted accounting principles; and
- if AWCC fails or refuses to take timely action to enforce certain rights under the support agreement or if AWCC defaults in the timely payment of interest, principal or premium, if any, owed to a lender

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(including any holder of debt securities) when due, that lender may proceed directly against American Water to enforce such rights or to obtain payment of the defaulted interest, principal or premium, if any, owed to that lender.

No amendment to the support agreement that adversely affects the rights of any lender (including any holder of debt securities) and no termination of the support agreement will be effective until such time as all indebtedness of AWCC shall have been irrevocably paid in full and all commitments for indebtedness have been terminated, unless the lenders holding a majority of the aggregate principal amount of debt outstanding and (to the extent not outstanding) committed to consent in writing thereto. Notwithstanding the foregoing sentence, any amendment to the support agreement for the purposes of (i) increasing the minimum net worth as provided in the support agreement, (ii) establishing or increasing a minimum interest coverage ratio, (iii) establishing or reducing a maximum amount of debt leverage, (iv) increasing the aggregate principal amount of debt outstanding whose holders are required to consent to the termination or amendment of the support agreement, or (v) any combination of clause (i), (ii), (iii) and (iv) of this sentence, shall be effective without the consent of any lender. In addition, nothing in the prior two sentences shall derogate from, or override, any provision in an instrument, indenture, agreement or other document pursuant to which indebtedness is or will be issued that requires the written consent of the holders of a specified amount or percentage of that indebtedness to consent to an amendment or termination of the support agreement.

Certain Covenants

If debt securities are issued, the indenture, as supplemented for a particular series of debt securities, may contain, among others, the following covenants for the benefit of the holders of such series of debt securities, which will be applicable (unless waived or amended) so long as any of the debt securities of such series are outstanding, unless stated otherwise in the prospectus supplement:

Restrictions on Liens

AWCC will not, and will not allow American Water, as the support provider, or any of its subsidiaries to, create, incur, issue or assume any liens on our or its respective property to secure debt where the debt secured by those liens would exceed an amount equal to 15% of our consolidated tangible total assets, as defined below (calculated to exclude debt secured by permitted liens). This restriction does not apply to the following permitted liens:

- (a) liens existing, or created pursuant to the terms of agreements existing, on the date of the indenture;
- (b) liens consisting of (i) pledges or deposits in the ordinary course of business to secure obligations under workmen's compensation laws or similar legislation, (ii) deposits in the ordinary course of business to secure or in lieu of surety, appeal or customs bonds to which AWCC, American Water or any of its subsidiaries is a party, (iii) liens created by or resulting from any litigation or legal proceeding which is currently being contested in good faith by appropriate proceedings diligently conducted, (iv) pledges or deposits in the ordinary course of business to secure performance in connection with bids, tenders or contracts (other than contracts for the payment of money) or (v) materialmen's, mechanics', carriers', workmen's repairmen's or other like liens incurred in the ordinary course of business for sums not yet due or currently being contested in good faith by appropriate proceedings diligently conducted;
- (c) liens created to secure tax-exempt debt, in connection with the financing or refinancing of the purchase, lease or construction of properties;
- (d) any lien on any asset of any person existing at the time the person is merged or consolidated with or into, or such asset is acquired by AWCC, American Water or any of its subsidiaries and not created in contemplation of such event;
- (e) liens created to secure sales of accounts receivable and other receivables;

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- (f) licenses of intellectual property granted by AWCC, American Water or any of its subsidiaries in the ordinary course of business and not interfering in any material respect with the ordinary conduct of business;
- (g) liens of landlords arising under real property leases to the extent those liens arise in the ordinary course of business and do not secure any past due obligation for the payment of money;
- (h) any interest or title of a lessor or sublessor under any lease permitted by the indenture;
- (i) liens securing debt which has neither been assumed by AWCC, American Water or any of its subsidiaries nor upon which AWCC, American Water or any of its subsidiaries customarily pay interest charges, existing upon real property, or rights in or relating thereto, which real property or rights were acquired for right-of-way purposes;
- (j) zoning laws and ordinances;
- (k) any leases required to be capitalized on a balance sheet of the lessee in accordance with generally accepted accounting principles;
- (l) easements, rights-of-way, restrictions, conditions and other similar encumbrances, minor defects or irregularities of title, and alleys, streets and highways, which in the aggregate do not materially impair the usefulness of the mortgaged property in the present business of AWCC, American Water or any of its subsidiaries;
- (m) leases of the properties of AWCC, American Water or any of its subsidiaries, in each case entered into in the ordinary course of business and that do not, individually or in the aggregate, (i) interfere in any material respect with the ordinary course of business or (ii) materially impair the value of the property subject thereto;
- (n) liens arising out of conditional sale, title retention, consignment or similar arrangements for the sale of goods entered into by AWCC, American Water or any of its subsidiaries in the ordinary course of business in accordance with the past practices of AWCC, American Water or such subsidiary;
- (o) bankers' liens, right of setoff and other similar liens (including deposits required by interest rate swap agreements) existing solely with respect to cash and cash equivalents on deposit in one or more accounts maintained by AWCC, American Water or any of its subsidiaries, in each case granted in the ordinary course of business in favor of the financial institutions with which such accounts are maintained, securing amounts owing to such financial institutions with respect to cash management and operating account arrangements, including those involving pooled accounts and netting arrangements; provided that, unless such liens are non-consensual and arise by operation of law, in no case shall any such liens secure (either directly or indirectly) the repayment of any debt;
- (p) liens for taxes, assessments or governmental charges or levies not yet delinquent and which may subsequently be paid without interest or penalties and liens for taxes, assessments or governmental charges or levies which are being contested in good faith by appropriate proceedings for which reserves have been established to the extent required by GAAP;
- (q) any lien on any property of AWCC, American Water or any of its subsidiaries securing obligations not exceeding in the aggregate \$100 million outstanding any time;
- (r) liens on any property, acquired, constructed or improved by AWCC, American Water or any of its subsidiaries after the date of the indenture, and any improvements thereon, accessions thereto or other property acquired or constructed for use in connection therewith or related thereto, which are created or assumed prior to or contemporaneously with, or within 180 days after, such acquisition or completion of such construction or improvement, or within one year thereafter pursuant to a firm commitment for financing arranged with a lender or investor within such 180-day period, to secure or provide for the payment of all or any part of the purchase price of such property or the cost of such construction or improvement incurred after the date of the indenture or liens on any property existing at the time of acquisition thereof; *provided*, that the liens shall not extend to any property theretofore owned by

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- AWCC, American Water or any of its subsidiaries other than, in the case of any such construction or improvement, (i) unimproved real property on which the property so constructed or the improvement is located, (ii) other property (or improvement thereon) which is an improvement to or is acquired or constructed for use in connection therewith or related thereto, (iii) any right and interest under any agreement or other documents relating to the property being so constructed or improved or such other property and (iv) the stock of any subsidiary of ours created or maintained for the primary purpose of owning the property so constructed or improved;
- (s) liens on property securing debt if, prior to or concurrently with the issuance, assumption or guarantee of such debt, the debt securities (together with, if AWCC shall so determine, (i) any other debt of or guaranteed by AWCC ranking equally with the debt securities or (ii) any debt of us or any of our subsidiaries then existing or thereafter created) are secured by such property equally and ratably with (or prior to) such debt (for so long as such debt is secured by such liens);
 - (t) liens securing the debt securities;
 - (u) liens securing debt owed to AWCC, American Water or any of its subsidiaries; and
 - (v) liens created for the sole purpose of refinancing, extending, renewing or replacing in whole or in part debt or other obligations secured by any lien referred to in the foregoing subsections (a) through (t); *provided, however*, that the principal amount of debt or obligations secured thereby shall not exceed the principal amount of debt or obligations so secured at the time of such refinancing, extension, renewal or replacement *plus* the amount of any premiums required to be paid thereon and reasonable fees and expenses associated therewith and that such refinancing, extension, renewal or replacement, as the case may be, shall be limited to all or a part of the property that secured the lien or mortgage so refinanced, extended, renewed or replaced (and any improvements on such property).

“Debt” means, for any person (without duplication), all (i) indebtedness for borrowed money, (ii) obligations evidenced by bonds, debentures, debt securities or other similar instruments, (iii) obligations to pay the deferred purchase price of property or service (other than trade payables not overdue by more than 90 days incurred in the ordinary course of business and long term water purchase contracts), (iv) obligations under capital leases, (v) indebtedness of the type referred to in clauses (i) through (iv) above secured by (or for which the holder of such indebtedness has an existing right, contingent or otherwise, to be secured by), any lien or encumbrance on, or security interest in, property (including, without limitation, accounts and contract rights) owned by such person, even though such person has not assumed or become liable for payment of such indebtedness, and (vi) all obligations of such person for indebtedness or obligations of others of the kinds referred to in clauses (i) through (iv) above under direct or indirect guarantees, excluding, in all cases, (i) advances for construction and contributions in aid of construction as set forth on the consolidated balance sheet of American Water and its subsidiaries, (ii) reimbursement obligations (contingent or otherwise) in respect of outstanding letters of credit and (iii) attributable debt in respect of sale and leaseback transactions.

Restrictions on Sales and Leasebacks

AWCC will not, and will not allow American Water or any of its subsidiaries to, enter into any sale and leaseback transaction without effectively providing that the debt securities will be secured equally and ratably with or prior to the sale and leaseback transaction, unless:

- the aggregate amount of the attributable debt of AWCC, American Water and its subsidiaries in respect of sale and leaseback transactions then outstanding would not exceed an amount equal to 15% of our consolidated tangible total assets, or
- AWCC, American Water or any of its subsidiaries, within 12 months of the sale and leaseback transaction, retire an amount of secured debt which is not subordinate to the debt securities in an amount equal to the greater of (1) the net proceeds of the sale or transfer of the property or other assets that are the subject of the sale and leaseback transaction or (2) the fair market value of the property leased.

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A “sale and leaseback transaction” for purposes of this subsection is an arrangement between AWCC, American Water or any of its subsidiaries and a bank, insurance company or other lender or investor where AWCC, American Water or any of its subsidiaries leases property for an initial term of three years or more that was or will be sold by AWCC, American Water, or such subsidiary to that lender or investor for a sale price of U.S. \$1,000,000 or its equivalent or more.

“Attributable debt” means the lesser of (1) the fair market value of the asset subject to the sale and leaseback transaction and (2) the present value, determined in accordance with GAAP (discounted at a rate equal to the rate of interest implicit in such transaction), of the obligations of the lessee for the net rental payments (excluding amounts on account of maintenance and repairs, insurance, taxes, assessments and similar charges and contingent rents) during the term of the lease.

“Consolidated tangible total assets” means, as at any applicable time of determination, consolidated total assets less, without duplication, all intangible assets such as goodwill, trademarks, trade names, patents and unamortized debt discount and expense carried as an asset, in each case as set forth in our most recent consolidated balance sheet.

“Consolidated total assets” means, as at any applicable time of determination, our consolidated total assets as set forth in our most recent consolidated financial statements.

Merger, Consolidation or Sale of Assets

Neither AWCC nor American Water will consolidate with or merge into any other person or convey, transfer or lease its properties and assets substantially as an entirety to any person, unless:

(i) the successor formed by a consolidation or the survivor of a merger or the person that acquires by conveyance, transfer or lease all or substantially all of the assets of AWCC or American Water as an entirety, as the case may be, is a person organized and existing under the laws of the United States or any State thereof (including the District of Columbia), and expressly assumes, in the case of American Water, the due and punctual payment of the principal of and any premium and interest on all the debt securities and the performance or observance of every covenant of the indenture on the part of AWCC to be performed or observed, and, in the case of American Water, all the obligations under the support agreement to be performed or observed, and such person shall have caused to be delivered to the trustee an officer’s certificate and an opinion of counsel to the effect that such consolidation, merger, conveyance, transfer or lease complies in all material respects with this covenant; and

(ii) immediately before and immediately after giving effect to such transaction, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing.

Upon any consolidation by AWCC or American Water with or merger by AWCC or American Water into any other person or any conveyance, transfer or lease of either AWCC’s or American Water’s properties and assets substantially as an entirety in accordance with this covenant, the successor person formed by such consolidation or into which it is merged or to which such conveyance, transfer or lease is made will succeed to, and be substituted for, and may exercise every right and power of, AWCC or American Water, as applicable, under the indenture and the support agreement with the same effect as if such successor person had been named as AWCC or American Water, as applicable, therein, and thereafter, except in the case of a lease, the predecessor person will be relieved of all obligations and covenants, in the case of AWCC under the indenture, the debt securities and, in the case of American Water, under the support agreement.

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Support Agreement

American Water may not (a) cancel or terminate the support agreement or (b) amend or otherwise modify the terms of the support agreement, except for amendments and modifications that do not adversely affect the rights of the holders of debt securities, in each case, without the prior written consent of holders of at least a majority of the outstanding principal amount of all outstanding debt of AWCC.

Subordination

Debt securities of a series may be subordinated, which we refer to as subordinated debt securities, to senior indebtedness (as defined in the applicable prospectus supplement) to the extent set forth in the prospectus supplement relating thereto. To the extent we conduct operations through subsidiaries, the holders of debt securities (whether or not subordinated debt securities) will be structurally subordinated to the creditors of our subsidiaries, except to the extent such subsidiary is a guarantor of such series of debt.

Events of Default

Each of the following constitutes an event of default under the form of indenture with respect to any series of debt securities:

- (1) default for 30 days in the payment when due of interest on a series of debt securities;
- (2) default in payment when due of the principal of, or premium, if any, on a series of debt securities;
- (3) failure by AWCC or American Water to comply with the provisions described under the caption “—Certain Covenants—Merger, Consolidation or Sale of Assets”;
- (4) default in the deposit of any sinking fund payment, when and as due by the terms of debt securities of that series;
- (5) failure by AWCC or American Water to comply for 60 days after receipt of notice with any of the other agreements in the indenture or the support agreement; provided, however, that except with respect to defaults under or breaches of the covenant described under “—Certain Covenants—Restrictions on Liens,” holders of a series of debt securities will be deemed to have agreed to an extension of such 60-day period to 120 days so long as corrective action is initiated by AWCC or American water within such 60-day period unless such corrective action is no longer being diligently pursued;
- (6) default under any mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any indebtedness for money borrowed by AWCC or American Water (or the payment of which is guaranteed by AWCC or American Water), if that default is caused by a failure to pay principal at its stated maturity after giving effect to any applicable grace period, or results in the acceleration of such indebtedness prior to its stated maturity and, in each case, the principal amount of any such indebtedness, together with the principal amount of any other indebtedness under which there has been a payment default after stated maturity or the maturity of which has been so accelerated, aggregates \$100 million or more;
- (7) failure by AWCC or American Water to pay final judgments aggregating (to the extent not paid or insured) in excess of \$100 million, which judgments are not paid, within 60 days after the entry thereof, bonded, discharged or stayed pending appeal, or are not discharged within 60 days after the expiration of such stay;
- (8) except as permitted by the indenture, the support agreement shall cease for any reason to be in full force and effect or American Water, or any person acting on behalf of American Water, shall deny or disaffirm its obligations under the support agreement; and
- (9) certain events of bankruptcy or insolvency described in the indenture with respect to AWCC or American Water. A prospectus supplement may omit, modify or add to the foregoing events of default.

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However, a default under clause (5) will not constitute an event of default until the trustee or the holders of 25% in aggregate principal amount of the outstanding debt securities in a series notify AWCC of the default and AWCC does not cure the default within 60 days after receipt of that notice. In the case of an event of default arising from certain events of bankruptcy or insolvency, with respect to AWCC or American Water, all outstanding debt securities in such series will become due and payable immediately without further action or notice. If any other event of default occurs and is continuing, the trustee or the holders of at least 25% in aggregate principal amount of the then outstanding debt securities in such series may declare all the securities to be due and payable immediately. Unless as otherwise provided herein, after any such acceleration, but before a judgment or decree based on acceleration is obtained by the trustee, the registered holders of a majority in aggregate principal amount of the outstanding debt securities in a series may, under certain circumstances, rescind and annul such acceleration and waive such event of default if all events of default, other than the nonpayment of accelerated principal, premium or interest have been cured or waived as provided in the indenture or a supplemental indenture.

Holders of a series of debt securities may not enforce the indenture, supplemental indenture or such debt securities except as provided in the indenture or supplemental indenture. Subject to certain limitations holders of a majority in principal amount of the then outstanding debt in a series may direct the trustee in its exercise of any trust or power. The trustee may withhold from holders of a series of debt securities notice of any continuing default if it determines that withholding notice is in their interest, except a default relating to the payment of principal or interest.

Subject to the provisions of the indenture relating to the duties of the trustee, in case an event of default shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request or direction of any of the holders of a series of debt securities, unless such holders shall have offered to the trustee reasonable indemnity or security against any loss, liability or expense. Subject to such provisions for indemnification of the trustee, the holders of a majority in aggregate principal amount of a series of debt securities then outstanding will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to such series of outstanding debt securities.

The holders of a majority in aggregate principal amount of a series of debt securities then outstanding, by notice to the trustee, may, on behalf of the holders of all of such series of debt securities, waive any existing default and its consequences under the indenture except a continuing default in the payment of interest on, or the principal of, such series of debt securities (other than the non-payment of principal of or interest on such series of debt securities that became due solely because of the acceleration of such series of debt securities).

AWCC is required to deliver to the trustee within 90 days after the end of each fiscal year a statement regarding compliance with the indenture during that fiscal year. Promptly (and in any event within 5 business days) upon a responsible officer of AWCC becoming aware of any default or event of default, AWCC is required to deliver to the trustee a statement specifying that default.

“Responsible officer” means the chief executive officer, chief operating officer, general counsel, any senior financial officer and any other officer of AWCC with responsibility for the administration of the indenture.

“Senior financial officer” means the chief financial officer, principal accounting officer, treasurer or controller of AWCC.

Modification or Waiver

Except as provided below, AWCC and the trustee may supplement and amend the form of indenture or the debt securities with the consent of the holders of not less than a majority in principal amount of the outstanding debt securities. The consent of the holder of each outstanding debt security affected is required to:

- change the stated maturity of or the stated amount of the principal of, or any installment of interest on, the debt securities;

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- reduce the principal amount or the rate of interest on, or any premium payable upon the redemption of the debt securities;
- change the place or currency of payment of principal of, or interest on, the debt securities;
- impair the right to institute suit for the enforcement of any such payment on or after the stated maturity of the debt securities or any redemption date for the debt securities;
- reduce the percentage of holders of outstanding debt securities necessary to modify or amend the indenture or to consent to any waiver under the indenture;
- reduce the percentage of outstanding debt securities necessary to waive any past default; or
- modify any of the above requirements.

AWCC and the trustee may supplement and amend the indenture or the debt securities without the consent of any holder for the following purposes:

- to evidence the succession of another entity to AWCC as obligor under an indenture;
- to provide for the acceptance of appointment by a successor trustee;
- to effect the assumption of the indenture by American Water or one of its subsidiaries;
- to cure any ambiguity, defect or inconsistency in the indenture;
- to provide for uncertificated debt securities in addition to or in place of certificated debt securities (provided that the uncertificated debt securities are issued in registered form for purposes of Section 163(f) of the Internal Revenue Code, or in a manner such that the uncertificated debt securities are described in Section 163(f)(2)(B) of the Internal Revenue Code);
- to add guarantees with respect to the debt securities or to secure the debt securities;
- to establish the form or terms of debt securities as permitted by the indenture;
- to add to the covenants of American Water, AWCC or its other subsidiaries for the benefit of the holders of the debt securities or to surrender any right or power conferred upon us, AWCC or American Water's other subsidiaries;
- to make any change that does not adversely affect the rights of any holder of the debt securities; or
- to comply with any requirement of the SEC in connection with the qualification of the indenture under the Trust Indenture Act.

The consent of the holders of the debt securities is not necessary under the indenture to approve the particular form of any proposed amendment or supplemental indenture. It is sufficient if such consent approves the substance of the proposed amendment or supplemental indenture.

Prescription Period

Any money that AWCC deposits with the trustee or any paying agent for the payment of principal or interest on any global security that remains unclaimed for two years after the date upon which the principal and interest are due and payable will be repaid to AWCC upon AWCC's request unless otherwise required by mandatory provisions of any applicable unclaimed property law. After that time, unless otherwise required by mandatory provisions of any unclaimed property law, the holder of any debt security will be able to seek any payment to which that holder may be entitled to collect only from AWCC.

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No Personal Liability of Directors, Officers, Employees and Stockholders

No director, officer, employee, incorporator or stockholder of AWCC or us, will have any liability for any obligations of AWCC or American Water under the debt securities, the indenture, the support agreement, or for any claim based on, in respect of, or by reason of, such obligations or their creation. Each holder of debt securities by accepting a debt security waives and releases all such liability. The waiver and release are part of the consideration for issuance of the debt securities. The waiver may not be effective to waive liabilities under the federal securities law and it is the view of the SEC that such waiver is against public policy.

Defeasance

At any time, AWCC may terminate all its obligations under a series of debt securities and the indenture, which we refer to as legal defeasance, except for certain obligations, including those respecting the defeasance trust and obligations to register the transfer or exchange of such series of debt securities, to replace mutilated, destroyed, lost or stolen debt securities of such series and to maintain a registrar and paying agent in respect of the debt securities of such series.

In addition, at any time AWCC may terminate its obligations under certain specified covenants with respect to a series of debt securities.

AWCC may exercise its legal defeasance option with respect to a series of debt securities notwithstanding its prior exercise of its covenant defeasance option with respect to such series of debt securities. If AWCC exercises its legal defeasance option with respect to a series of debt securities, payment of the debt securities of such series may not be accelerated because of an event of default with respect thereto. If AWCC exercises its covenant defeasance option with respect to a series of debt securities, payment of the debt securities of such series may not be accelerated because of a default related to the specified covenants.

In order to exercise either of its defeasance options, AWCC must irrevocably deposit in trust, which we refer to as the defeasance trust, with the trustee money or U.S. Government obligations for the payment of principal and interest on the applicable series of debt securities to redemption or maturity, as the case may be, and must comply with certain other conditions, including delivery to the trustee of an opinion of counsel to the effect that holders of the series of debt securities will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit and defeasance and will be subject to Federal income tax on the same amounts and in the same manner and at the same times as would have been the case if such deposit and defeasance had not occurred (and, in the case of legal defeasance only, such opinion of counsel must be based on a ruling of the Internal Revenue Service or other change in applicable Federal income tax law).

Discharge

When (i) AWCC delivers to the trustee all outstanding debt securities of a series (other than any debt securities replaced because of mutilation, loss, destruction or wrongful taking) for cancellation or (ii) all outstanding debt securities of a series have become due and payable, or are by their terms due and payable within one year whether at maturity or are to be called for redemption within one year under arrangements reasonably satisfactory to the trustee, and in the case of clause (ii) AWCC irrevocably deposits with the trustee funds sufficient to pay at maturity or upon redemption all outstanding debt securities of such series, including interest thereon, and if in either case AWCC pays all other sums related to the applicable series of debt securities payable under the indenture by AWCC, then the indenture shall, subject to certain surviving provisions cease to be of further effect with respect to such series. The trustee shall acknowledge satisfaction and discharge of the indenture with respect to the applicable series of debt securities on demand of AWCC accompanied by an officers' certificate and an opinion of counsel of AWCC.

Governing Law

The indenture and the debt securities will be governed by, and construed in accordance with, the laws of the State of New York.

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Book-Entry, Delivery and Form

Except as set forth below or in the applicable prospectus supplement, each series of debt securities will be issued in registered, global form in minimum denominations of \$1,000 and integral multiples of \$1,000 in excess thereof. The debt securities will be issued at the closing of any offering only against payment in immediately available funds.

The debt securities initially will be represented by one or more global securities. Upon issuance, each of the global securities will be deposited with the trustee as custodian for The Depository Trust Company, which we refer to as DTC, in New York, New York, and registered in the name of DTC or its nominee, in each case for credit to an account of a direct or indirect participant in DTC as described below.

Except as set forth below, the global securities may be transferred, in whole and not in part, only to another nominee of DTC or to a successor of DTC or its nominee. Beneficial interests in the global securities may not be exchanged for definitive debt securities in registered certificated form, which we refer to as certificated debt securities, except in the limited circumstances described below. See “—Exchange of Global Securities for Certificated Debt Securities.” Except in the limited circumstances described below, owners of beneficial interests in the global securities will not be entitled to receive physical delivery of the debt securities in certificated form.

Transfers of beneficial interests in the global securities will be subject to the applicable rules and procedures of DTC and its direct or indirect participants, which may change from time to time.

Exchanges of Global Securities for Certificated Debt Securities

A beneficial interest in a global security may not be exchanged for a debt security in certificated form unless (i) DTC (x) notifies AWCC that it is unwilling or unable to continue as depository for such global security or (y) has ceased to be a clearing agency registered under the Exchange Act or (ii) there shall have occurred and be continuing an event of default with respect to the debt securities. In all cases, certificated debt securities delivered in exchange for any global security or beneficial interests therein will be registered in the names, and issued in approved denominations, requested by or on behalf of DTC (in accordance with its customary procedures). Any certificated debt securities issued in exchange for an interest in a global security will bear the legend restricting transfers that is borne by such global security. Any such exchange will be effected only through the DWAC system and an appropriate adjustment will be made in the records of the security register to reflect a decrease in the principal amount of the relevant global security.

Depository Procedures

The following description of the operations and procedures of DTC is provided solely as a matter of convenience. These operations and procedures are solely within the control of the respective settlement systems and are subject to changes by them from time to time. American Water and AWCC take no responsibility for these operations and procedures and urge investors to contact the system or their participants directly to discuss these matters.

Upon the issuance of the global securities, DTC will credit, on its internal system, the respective principal amount of the individual beneficial interests represented by such global securities to the accounts with DTC, which we refer to as participants, or persons who hold interests through participants. Ownership or beneficial interests in the global securities will be shown on, and the transfer of that ownership will be effected only through, records maintained by DTC or its nominee (with respect to interests of participants) and the records of participants (with respect to interest of persons other than participants).

As long as DTC, or its nominee, is the registered holder of a global security, DTC or such nominee, as the case may be, will be considered the sole owner and holder of the debt securities represented by such global security for all purposes under the indenture and the debt securities. Except in the limited circumstances

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described above under “—Exchanges of Global Securities for Certificated Debt Securities,” owners of beneficial interests in a global security will not be entitled to have portions of such global security registered in their names, will not receive or be entitled to receive physical delivery of debt securities in definitive form and will not be considered the owners or holders of the global security (or any debt securities presented thereby) under the indenture or the debt securities. In addition, no beneficial owner of an interest in a global security will be able to transfer that interest except in accordance with DTC’s applicable procedures (in addition to those under the indenture referred to herein). In the event that owners of beneficial interests in a global security become entitled to receive debt securities in definitive form, such debt securities will be issued only in registered form in denominations of U.S. \$1,000 and integral multiples of \$1,000 in excess thereof.

Investors may hold their interests in the global securities directly through DTC, if they are participants in such system, or indirectly through organizations which are participants in such system. All interests in a global security may be subject to the procedures and requirements of DTC.

The laws of some states require that certain persons take physical delivery in definitive form of securities that they own. Consequently, the ability to transfer beneficial interests in a global security to such persons may be limited to that extent. Because DTC can act only on behalf of participants, which in turn act on behalf of indirect participants and certain banks, the ability of a person having beneficial interests in a global security to pledge such interests to persons or entities that do not participate in the DTC system, or otherwise take action in respect of such interests, may be affected by the lack of a physical certificate evidencing such interests.

Payments of the principal of and interest on global securities will be made to DTC or its nominee as the registered owner thereof. Neither AWCC, the trustee nor any of their respective agents will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in the global securities or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Beneficial interests in the global securities will trade in DTC’s Same-Day Funds Settlement System, and secondary market trading activity in such interests will therefore settle in immediately available funds. AWCC expects that DTC or its nominee, upon receipt of any payment of principal or interest in respect of a global security representing any debt securities held by it or its nominee, will immediately credit participants’ accounts with payment in amounts proportionate to their respective beneficial interests in the principal amount of such debt securities as shown on the records of DTC or its nominee. AWCC also expects that payments by participants to owners of beneficial interests in such global securities held through such participants will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers registered in “street name.” Such payments will be the responsibility of such participants.

Transfers between participants in DTC will be effected in accordance with DTC’s procedures, and will be settled in same-day funds.

DTC has advised AWCC that it will take any action permitted to be taken by a holder of debt securities (including the presentation of debt securities for exchange as described below) only at the direction of one or more participants to whose account with DTC interests in the global securities are credited and only in respect of such portion of the aggregate principal amount of the debt securities as to which such participant or participants has or have given such direction. However, if there is an event of default under the debt securities, DTC reserves the right to exchange the global securities for legended debt securities in certificated form, and to distribute such debt securities to its participants.

DTC has advised AWCC as follows: DTC is

- a limited purpose trust company organized under the New York Banking Law,
- a “banking organization” within the meaning of the New York Banking Law,

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- a member of the Federal Reserve System,
- a “clearing corporation” within the meaning of the New York Uniform Commercial Code, as amended, and
- a “clearing agency” registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC was created to hold securities for its participants and facilitate the clearance and settlement of securities transactions between participants through electronic book-entry changes in accounts of its participants, thereby eliminating the need for physical transfer and delivery of certificates. Participants include securities brokers and dealers, banks, trust companies and clearing corporations and may include certain other organizations. DTC is partially owned by some of these participants or their representatives. Indirect access to the DTC system is available to other entities such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a participant, either directly or indirectly, which we refer to as indirect participants.

Although DTC has agreed to the foregoing procedures in order to facilitate transfers of beneficial ownership interests in the global securities among participants of DTC, it is under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued at any time. None of AWCC, the trustee nor any of their respective agents will have any responsibility for the performance by DTC or its participants or indirect participants of its respective obligations under the rules and procedures governing its operations, including maintaining, supervising or reviewing the records relating to, or payments made on account of, beneficial ownership interests in global securities.

Same Day Settlement and Payment

AWCC will make payments in respect of the debt securities represented by the global securities (including principal, premium, if any, interest and special interest, if any) by wire transfer of immediately available funds to the accounts specified by the global security holder. AWCC will make all payments of principal, interest and premium and special interest, if any, with respect to certificated debt securities by wire transfer of immediately available funds to the accounts specified by the holders of the certificated debt securities or, if no such account is specified, by mailing a check to each such holder’s registered address. The debt securities represented by the global securities are expected to be eligible to trade in DTC’s Same-Day Funds Settlement System, and any permitted secondary market trading activity in such debt securities will, therefore, be required by DTC to be settled in immediately available funds. AWCC expects that secondary trading in any certificated debt securities will also be settled in immediately available funds.

Table of Contents**DESCRIPTION OF DEPOSITARY SHARES**

The following summary of certain provisions of the depositary shares does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the depositary agreement that will be filed with the SEC in connection with the offering of such depositary shares.

American Water may offer fractional shares of preferred stock, rather than full shares of preferred stock. If American Water decides to offer fractional shares of preferred stock, American Water will issue receipts for depositary shares. Each depositary share will represent a fraction of a share of a particular series of preferred stock, and the prospectus supplement will indicate that fraction. The shares of preferred stock represented by depositary shares will be deposited under a depositary agreement between American Water and a depositary that is a bank or trust company that meets certain requirements and is selected by us. The depositary will be specified in the applicable prospectus supplement. Each owner of a depositary share will be entitled to all of the rights and preferences of the preferred stock represented by the depositary share. The depositary shares will be evidenced by depositary receipts issued pursuant to the depositary agreement. Depositary receipts will be distributed to those persons purchasing the fractional shares of preferred stock in accordance with the terms of the offering.

We have summarized selected provisions of the depositary agreement and the depositary receipts, but the summary is qualified by reference to the provisions of the depositary agreement and the depositary receipts. The particular terms of any series of depositary shares will be described in the applicable prospectus supplement. If so indicated in the prospectus supplement, the terms of any such series may differ from the terms set forth below.

Dividends and Other Distributions

The depositary will distribute all cash dividends or other cash distributions received by it in respect of the preferred stock to the record holders of depositary shares relating to such preferred shares in proportion to the numbers of depositary shares held on the relevant record date. The amount made available for distribution will be reduced by any amounts withheld by the depositary or American Water on account of taxes.

In the event of a distribution other than in cash, the depositary will distribute securities or property received by it to the record holders of depositary shares in proportion to the numbers of depositary shares held on the relevant record date, unless the depositary determines that it is not feasible to make such distribution. In that case, the depositary may make the distribution by such method as it deems equitable and practicable. One such possible method is for the depositary to sell the securities or property and then distribute the net proceeds from the sale as provided in the case of a cash distribution.

Withdrawal of Shares

Upon surrender of depositary receipts representing any number of whole shares at the depositary's office, unless the related depositary shares previously have been called for redemption, the holder of the depositary shares evidenced by the depositary receipts will be entitled to delivery of the number of whole shares of the related series of preferred stock and all money and other property, if any, underlying such depositary shares. However, once such an exchange is made, the preferred stock cannot thereafter be redeposited in exchange for depositary shares. Holders of depositary shares will be entitled to receive whole shares of the related series of preferred stock on the basis set forth in the applicable prospectus supplement. If the depositary receipts delivered by the holder evidence a number of depositary shares representing more than the number of whole shares of preferred stock of the related series to be withdrawn, the depositary will deliver to the holder at the same time a new depositary receipt evidencing the excess number of depositary shares.

Redemption of Depositary Shares

Whenever American Water redeems the preferred stock, the depositary will redeem a number of depositary shares representing the same number of shares of preferred stock so redeemed. If fewer than all of the depositary shares are to be redeemed, the depositary shares to be redeemed will be selected by lot, pro-rata or by any other equitable method as the depositary may determine.

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Voting of Underlying Shares

Upon receipt of notice of any meeting at which the holders of the preferred stock of any series are entitled to vote, the depositary will mail the information contained in the notice of the meeting to the record holders of the depositary shares relating to that series of preferred shares. Each record holder of the depositary shares on the record date will be entitled to instruct the depositary as to the exercise of the voting rights represented by the number of shares of preferred stock underlying the holder's depositary shares. The depositary will endeavor, to the extent it is practical to do so, to vote the number of whole shares of preferred stock underlying such depositary shares in accordance with such instructions. American Water will agree to take all action that the depositary may deem reasonably necessary in order to enable the depositary to do so. To the extent the depositary does not receive specific instructions from the holders of depositary shares relating to such preferred shares, it will abstain from voting such shares of preferred stock.

Amendment and Termination of Depositary Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the applicable depositary agreement may at any time be amended by agreement between American Water and the depositary. American Water may, with the consent of the depositary, amend the depositary agreement from time to time in any manner that American Water desires. However, if the amendment would materially and adversely alter the rights of the existing holders of depositary shares, the amendment would need to be approved by the holders of at least a majority of the depositary shares then outstanding.

The depositary agreement may be terminated by American Water or the depositary if:

- all outstanding depositary shares have been redeemed; or
- there has been a final distribution in respect of the shares of preferred stock of the applicable series in connection with American Water's liquidation, dissolution or winding up and such distribution has been made to the holders of depositary receipts.

Resignation and Removal of Depositary

The depositary may resign at any time by delivering to us notice of its election to do so. We may remove a depositary at any time. Any resignation or removal will take effect upon the appointment of a successor depositary and its acceptance of appointment.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of any depositary arrangements. We will pay all charges of each depositary in connection with the initial deposit of the preferred shares of any series, the initial issuance of the depositary shares, any redemption of such preferred shares and any withdrawals of such preferred shares by holders of depositary shares. Holders of depositary shares will be required to pay any other transfer taxes.

Notices

Each depositary will forward to the holders of the applicable depositary shares all notices, reports and communications from us which are delivered to such depositary and which we are required to furnish the holders of the preferred shares.

Limitation of Liability

The depositary agreement contains provisions that limit our liability and the liability of the depositary to the holders of depositary shares. Both the depositary and we are also entitled to an indemnity from the holders of the depositary shares prior to bringing, or defending against, any legal proceeding. We or any depositary may rely upon written advice of counsel or accountants, or information provided by persons presenting preferred shares for deposit, holders of depositary shares or other persons believed by us to be competent and on documents believed by us or them to be genuine.

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DESCRIPTION OF STOCK PURCHASE CONTRACTS AND STOCK PURCHASE UNITS

The following summary of certain provisions of the stock purchase contracts and stock purchase units does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the stock purchase contract or stock purchase unit, as applicable, that will be filed with the SEC in connection with the offering of such securities.

American Water may issue stock purchase contracts, including contracts obligating holders to purchase from us, and obligating American Water to sell to the holders, a specified number of shares of common stock or other securities at a future date or dates, which we refer to in this prospectus as “stock purchase contracts.” The price per share of the securities and the number of shares of the securities may be fixed at the time the stock purchase contracts are issued or may be determined by reference to a specific formula set forth in the stock purchase contracts. The stock purchase contracts may be issued separately or as part of units consisting of a stock purchase contract and debt securities, preferred securities, warrants or debt obligations of third parties, including U.S. treasury securities, securing the holders’ obligations to purchase the securities under the stock purchase contracts, which we refer to herein as “stock purchase units.” The stock purchase contracts may require holders to secure their obligations under the stock purchase contracts in a specified manner. The stock purchase contracts also may require American Water to make periodic payments to the holders of the stock purchase units or vice versa, and those payments may be unsecured or refunded on some basis.

The applicable prospectus supplement will describe the terms of the stock purchase contracts or stock purchase units. The description in the prospectus supplement will not necessarily be complete, and reference will be made to the stock purchase contracts, and, if applicable, collateral or depositary arrangements, relating to the stock purchase contracts or stock purchase units, which will be filed with the SEC each time American Water issues stock purchase contracts or stock purchase units. Material United States federal income tax considerations applicable to the stock purchase units and the stock purchase contracts will also be discussed in the applicable prospectus supplement.

[Table of Contents](#)**DESCRIPTION OF SUBSCRIPTION RIGHTS**

The following summary of certain provisions of the subscription rights does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the certificate evidencing the subscription rights that will be filed with the SEC in connection with the offering of such subscription rights.

General

American Water may issue subscription rights to purchase common stock, preferred stock, depositary shares or warrants to purchase preferred stock, common stock or depositary shares. Subscription rights may be issued independently or together with any other offered security and may or may not be transferable by the person purchasing or receiving the subscription rights. In connection with any subscription rights offering to American Water's stockholders, American Water may enter into a standby underwriting arrangement with one or more underwriters pursuant to which such underwriters will purchase any offered securities remaining unsubscribed for after such subscription rights offering. In connection with a subscription rights offering to American Water's stockholders, American Water will distribute certificates evidencing the subscription rights and a prospectus supplement to American Water's stockholders on or about the record date that American Water sets for receiving subscription rights in such subscription rights offering.

The applicable prospectus supplement will describe the following terms of subscription rights in respect of which this prospectus is being delivered:

- the title of such subscription rights,
- the securities for which such subscription rights are exercisable,
- the exercise price for such subscription rights,
- the number of such subscription rights each stockholder will be entitled to receive, on a per share basis,
- the extent to which such subscription rights are transferable,
- if applicable, a discussion of the material United States federal income tax considerations applicable to the issuance or exercise of such subscription rights,
- the date on which the right to exercise such subscription rights shall commence, and the date on which such rights shall expire (subject to any extension),
- the extent to which such subscription rights include an over-subscription privilege with respect to unsubscribed securities,
- if applicable, the material terms of any standby underwriting or other purchase arrangement that American Water may enter into in connection with the subscription rights offering, and
- any other terms of such subscription rights, including terms, procedures and limitations relating to the exchange and exercise of such subscription rights.

Exercise of Subscription Rights

Each subscription right will entitle the holder of the subscription right to purchase for cash such amount of shares of preferred stock, depositary shares, common stock, warrants or any combination thereof, at such exercise price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the subscription rights offered thereby. Subscription rights may be exercised at any time up to the close of business on the expiration date for such subscription rights set forth in the prospectus supplement. After the close of business on the expiration date, all unexercised subscription rights will become void.

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Subscription rights may be exercised as set forth in the prospectus supplement relating to the subscription rights offered thereby. Upon receipt of payment and the subscription rights certificate properly completed and duly executed at the corporate trust office of the subscription rights agent or any other office indicated in the prospectus supplement, American Water will forward, as soon as practicable, the shares of preferred stock or common stock, depositary shares or warrants purchasable upon such exercise. American Water may determine to offer any unsubscribed offered securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as set forth in the applicable prospectus supplement.

Table of Contents**DESCRIPTION OF WARRANTS**

The following summary of certain provisions of the warrants does not purport to be complete and is subject to, and qualified in its entirety by reference to, the provisions of the warrant agreement that will be filed with the SEC in connection with the offering of such warrants.

General

American Water may issue warrants for the purchase of debt securities, preferred stock or common stock. Warrants may be issued independently or together with debt securities, preferred stock or common stock offered by any prospectus supplement and may be attached to or separate from any such offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between American Water and a bank or trust company, as warrant agent. The warrant agent will act solely as American Water's agent in connection with the warrants and will not assume any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants.

Debt Warrants

The prospectus supplement relating to a particular issue of debt warrants will describe the terms of such debt warrants, including the following: (a) the title of such debt warrants; (b) the offering price for such debt warrants, if any; (c) the aggregate number of such debt warrants; (d) the designation and terms of the debt securities purchasable upon exercise of such debt warrants; (e) if applicable, the designation and terms of the debt securities with which such debt warrants are issued and the number of such debt warrants issued with each such debt security; (f) if applicable, the date from and after which such debt warrants and any debt securities issued therewith will be separately transferable; (g) the principal amount of debt securities purchasable upon exercise of a debt warrant and the price at which such principal amount of debt securities may be purchased upon exercise (which price may be payable in cash, securities, or other property); (h) the date on which the right to exercise such debt warrants shall commence and the date on which such right shall expire; (i) if applicable, the minimum or maximum amount of such debt warrants that may be exercised at any one time; (j) whether the debt warrants represented by the debt warrant certificates or debt securities that may be issued upon exercise of the debt warrants will be issued in registered or bearer form; (k) information with respect to book-entry procedures, if any; (l) the currency or currency units in which the offering price, if any, and the exercise price are payable; (m) if applicable, a discussion of material United States federal income tax considerations; (n) the antidilution provisions of such debt warrants, if any; (o) the redemption or call provisions, if any, applicable to such debt warrants; and (p) any additional terms of such debt warrants, including terms, procedures, and limitations relating to the exchange and exercise of such debt warrants.

Stock Warrants

The prospectus supplement relating to any particular issue of preferred stock warrants or common stock warrants will describe the terms of such warrants, including the following: (a) the title of such warrants; (b) the offering price for such warrants, if any; (c) the aggregate number of such warrants; (d) the designation and terms of the common stock or preferred stock purchasable upon exercise of such warrants; (e) if applicable, the designation and terms of the offered securities with which such warrants are issued and the number of such warrants issued with each such offered security; (f) if applicable, the date from and after which such warrants and any offered securities issued therewith will be separately transferable; (g) the number of shares of common stock or preferred stock purchasable upon exercise of a warrant and the price at which such shares may be purchased upon exercise; (h) the date on which the right to exercise such warrants shall commence and the date on which such right shall expire; (i) if applicable, the minimum or maximum amount of such warrants that may be exercised at any one time; (j) the currency or currency units in which the offering price, if any, and the exercise price are payable, (k) if applicable, a discussion of material United States federal income tax considerations; (l) the antidilution provisions of such warrants, if any; (m) the redemption or call provisions, if any, applicable to such warrants; and (n) any additional terms of such warrants, including terms, procedures and limitations relating to the exchange and exercise of such warrants.

[Table of Contents](#)**PLAN OF DISTRIBUTION**

We and any selling security holder may offer and sell the securities covered by this prospectus from time to time, in one or more transactions, at market prices prevailing at the time of sale, at prices related to market prices, at a fixed price or prices subject to change, at varying prices determined at the time of sale or at negotiated prices, by a variety of methods, including the following:

- through agents;
- to or through underwriters;
- through brokers or dealers;
- directly by us or any selling security holders to purchasers, including through a specific bidding, auction or other process; or
- through a combination of any of these methods of sale.

Registration of the securities covered by this prospectus does not mean that those securities necessarily will be offered or sold.

In effecting sales, brokers or dealers engaged by us may arrange for other brokers or dealers to participate. Broker-dealer transactions may include:

- purchases of the securities by a broker-dealer as principal and resales of the securities by the broker-dealer for its account pursuant to this prospectus;
- ordinary brokerage transactions; or
- transactions in which the broker-dealer solicits purchasers.

In addition, we and any selling security holder may sell any securities covered by this prospectus in private transactions or under Rule 144 of the Securities Act rather than pursuant to this prospectus.

In connection with the sale of securities covered by this prospectus, broker-dealers may receive commissions or other compensation from us in the form of commissions, discounts or concessions. Broker-dealers may also receive compensation from purchasers of the securities for whom they act as agents or to whom they sell as principals or both. Compensation as to a particular broker-dealer may be in excess of customary commissions or in amounts to be negotiated. In connection with any underwritten offering, underwriters may receive compensation in the form of discounts, concessions or commissions from us or from purchasers of the securities for whom they act as agents. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Any underwriters, broker-dealers, agents or other persons acting on our behalf that participate in the distribution of the securities may be deemed to be “underwriters” within the meaning of the Securities Act, and any profit on the sale of the securities by them and any discounts, commissions or concessions received by any of those underwriters, broker-dealers agents or other persons may be deemed to be underwriting discounts and commissions under the Securities Act.

In connection with the distribution of the securities covered by this prospectus or otherwise, we or any selling security holder may enter into hedging transactions with broker-dealers or other financial institutions. In connection with such transactions, broker-dealers or other financial institutions may engage in short sales of our securities in the course of hedging the positions they assume with us or any selling security holder. We or any selling security holder may also sell securities short and deliver the securities offered by this prospectus to close out our short positions. We or any selling security holder may also enter into option or other transactions with broker-dealers or other financial institutions, which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial

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institution may resell pursuant to this prospectus, as supplemented or amended to reflect such transaction. We or any selling security holder may also from time to time pledge our securities pursuant to the margin provisions of our customer agreements with our brokers. Upon our default, the broker may offer and sell such pledged securities from time to time pursuant to this prospectus, as supplemented or amended to reflect such transaction.

At any time a particular offer of the securities covered by this prospectus is made, a revised prospectus or prospectus supplement, if required, will be distributed which will set forth the aggregate amount of securities covered by this prospectus being offered and the terms of the offering, including the name or names of any underwriters, dealers, brokers or agents, any discounts, commissions, concessions and other items constituting compensation from us and any discounts, commissions or concessions allowed or reallocated or paid to dealers. Such prospectus supplement, and, if necessary, a post-effective amendment to the registration statement of which this prospectus is a part, will be filed with the SEC to reflect the disclosure of additional information with respect to the distribution of the securities covered by this prospectus. In order to comply with the securities laws of certain states, if applicable, the securities sold under this prospectus may only be sold through registered or licensed broker-dealers. In addition, in some states the securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from registration or qualification requirements is available and is complied with.

We may solicit offers to purchase directly. Offers to purchase securities also may be solicited by agents designated by us from time to time. Any such agent involved in the offer or sale of the securities in respect of which this prospectus is delivered will be named, and any commissions payable by us to such agent will be set forth, in the applicable prospectus supplement. Unless otherwise indicated in such prospectus supplement, any such agent will be acting on a reasonable best efforts basis for the period of its appointment. Any such agent may be deemed to be an underwriter, as that term is defined in the Securities Act of 1933, of the securities so offered and sold.

American Water may offer its equity securities into an existing trading market on the terms described in the applicable prospectus supplement. Underwriters, dealers and agents who may participate in any at-the-market offerings will be described in the prospectus supplement relating thereto.

Securities may also be offered and sold, if so indicated in the applicable prospectus supplement, in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more firms acting as principals for their own accounts or as agents for us, which we refer to as remarketing firms. Any remarketing firm will be identified and the terms of its agreement, if any, with us and its compensation will be described in the applicable prospectus supplement. Remarketing firms may be deemed to be underwriters, as that term is defined in the Securities Act of 1933, in connection with the securities remarketed thereby.

If so indicated in the applicable prospectus supplement, we may authorize agents, dealers or underwriters to solicit offers by certain institutions to purchase securities from us at the public offering price set forth in the applicable prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in the applicable prospectus supplement. Such delayed delivery contracts will be subject to only those conditions set forth in the applicable prospectus supplement. A commission indicated in the applicable prospectus supplement will be paid to underwriters and agents soliciting purchases of securities pursuant to delayed delivery contracts accepted by us.

In connection with an underwritten offering, we and any selling security holder would execute an underwriting agreement with an underwriter or underwriters. Unless otherwise indicated in the revised prospectus or applicable prospectus supplement, such underwriting agreement would provide that the obligations of the underwriter or underwriters are subject to certain conditions precedent, and that the underwriter or underwriters with respect to a sale of the covered securities will be obligated to purchase all of the covered securities, if any such securities are purchased. We or any selling security holder may grant to the underwriter or

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underwriters an option to purchase additional securities at the public offering price, less any underwriting discount, as may be set forth in the revised prospectus or applicable prospectus supplement. If we or any selling security holder grants any such option, the terms of that option will be set forth in the revised prospectus or applicable prospectus supplement.

Pursuant to a requirement by the Financial Industry Regulatory Authority, which we refer to as FINRA, the maximum commission or discount to be received by any FINRA member or independent broker/dealer may not be greater than 8% of the aggregate amount of securities offered pursuant to this prospectus and any applicable prospectus supplement.

Underwriters, agents, brokers or dealers may be entitled, pursuant to relevant agreements entered into with us, to indemnification by us or any selling security holder against certain civil liabilities, including liabilities under the Securities Act that may arise from any untrue statement or alleged untrue statement of a material fact, or any omission or alleged omission to state a material fact in this prospectus, any supplement or amendment hereto, or in the registration statement of which this prospectus forms a part, or to contribution with respect to payments which the underwriters, agents, brokers or dealers may be required to make.

[Table of Contents](#)**LEGAL MATTERS**

The validity of the securities offered in this prospectus and any related prospectus supplement and certain legal matters will be passed upon for us by Morgan, Lewis & Bockius LLP, New York, New York. If the securities are being distributed in an underwritten offering, certain legal matters will be passed upon for the underwriters by counsel identified in the related prospectus supplement.

EXPERTS

The consolidated financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2011, have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. These SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov> and our website at <http://www.amwater.com>. You may also read and copy any document we file with the SEC at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room.

We are "incorporating by reference" into this prospectus specific documents that we file with the SEC, which means that we can disclose important information to you by referring you to those documents that are considered part of this prospectus. Information that we file subsequently with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below, and any future documents that we file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act", until the termination of the offerings of all of the securities covered by this prospectus. This prospectus is part of a registration statement filed with the SEC.

We are "incorporating by reference" into this prospectus the following documents filed with the SEC (excluding any portions of such documents that have been "furnished" but not "filed" for purposes of the Exchange Act):

<u>Filings</u>	<u>Period Covered or Date Filed</u>
Annual Report on Form 10-K, including the portions of our Proxy Statement on Schedule 14A filed on March 30, 2012 that are incorporated therein	Year ended December 31, 2011
Quarterly Report on Form 10-Q	Quarter ended March 31, 2012
Current Reports on Form 8-K (other than the portions not deemed to be filed)	Filed on March 30, 2012
Registration Statement on Form 8-A for a description of our common stock, par value \$0.01 per share	Filed on April 22, 2008, including any amendments or reports filed to update such description.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request and without charge, a copy of the documents referred to above that we have incorporated

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in this prospectus by reference. You can request copies of such documents if you call or write us at the following address or telephone number: American Water Works Company, Inc., 1025 Laurel Oak Road, Voorhees, New Jersey 08043, Attention: General Counsel, (856) 346-8200.

This prospectus, any accompanying prospectus supplement or information incorporated by reference herein or therein, contains summaries of certain agreements that we have filed as exhibits to various SEC filings, as well as certain agreements that we will enter into in connection with the offering of securities covered by any particular accompanying prospectus supplement. The descriptions of these agreements contained in this prospectus, any accompanying prospectus supplement or information incorporated by reference herein or therein do not purport to be complete and are subject to, and qualified in their entirety by reference to, the definitive agreements. Copies of the definitive agreements will be made available without charge to you by making a written or oral request to us.

You should rely only upon the information contained in this prospectus, any prospectus supplement or incorporated by reference in this prospectus or in any prospectus supplement. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than that on the front cover of this prospectus.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein, in any other subsequently filed document which also is or is deemed to be incorporated by reference herein or in any accompanying prospectus supplement, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified and superseded, to constitute a part of this prospectus.

[Table of Contents](#)**PART II
INFORMATION NOT REQUIRED IN PROSPECTUS****Item 14. Other Expenses of Issuance and Distribution.**

The following table lists the estimated expenses to be incurred by the registrant in connection with the offer and sale of securities registered under this registration statement.

SEC registration fee	(1)
Legal fees and expenses	(2)
Accounting fees and expenses	(2)
Printing fees	(2)
Trustee fees and expenses	(2)
Rating Agency fees	(2)
Miscellaneous	<u>(2)</u>
Total	(2)

- (1) Under Rules 456(b) and 457(r) of the Securities Act of 1933, as amended, which we refer to as the Securities Act, applicable SEC registration fees have been deferred and will be paid at the time of any particular offering of securities under this registration statement, and are therefore not estimable at this time.
- (2) Estimated fees and expenses are not presently known. The foregoing sets forth the general categories of fees and expenses (other than underwriting discounts and commissions) that we anticipate we will incur in connection with the offering of securities under the registration statement. An estimate of the aggregate fees and expenses in connection with the issuance and distribution of the securities being offered will be included in the applicable prospectus supplement.

Item 15. Indemnification of Directors and Officers.

Section 145(a) of the DGCL, provides in relevant part that a corporation may indemnify any officer or director who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director or officer of the corporation, or is or was serving at the request of the corporation as a director or officer of another entity, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person's conduct was unlawful.

Section 145(b) of the DGCL provides in relevant part that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

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American Water's bylaws and certificate of incorporation generally provide that American Water will indemnify its directors and officers to the fullest extent permitted by law.

The registrant also obtained officers' and directors' liability insurance which insures against liabilities that officers and directors of the registrant may, in such capacities, incur. Section 145(g) of the DGCL provides that a corporation shall have power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under that section.

Item 16. Exhibits.

<u>Exhibit Number</u>	<u>Description</u>
1.1	Form of Equity Securities Underwriting Agreement.*
1.2	Form of Debt Securities Underwriting Agreement.
1.3	Form of Warrant Underwriting Agreement.*
1.4	Form of Stock Purchase Contracts Underwriting Agreement.*
1.5	Form of Stock Purchase Units Underwriting Agreement.*
1.6	Form of Distribution Agreement.*
4.1	Restated Certificate of Incorporation of American Water Works Company, Inc. (incorporated herein by reference to Exhibit 3.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, filed on November 6, 2008).
4.2	Amended and Restated Bylaws of American Water Works Company, Inc. (incorporated herein by reference to Exhibit 3.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, filed on November 6, 2008).
4.3	Specimen Common Stock Certificate (incorporated herein by reference to Exhibit 4.1 to Amendment No. 5 of the American Water Works Company, Inc.'s Registration Statement on Form S-1 (file no. 333-145725), filed on March 31, 2008).
4.4	Support Agreement, dated June 22, 2000, and First Amendment to Support Agreement, dated July 26, 2000, between American Water Works Company, Inc. and American Water Capital Corp. (incorporated herein by reference to Exhibit 10.3 to Amendment No. 1 of American Water Works Company, Inc.'s Registration Statement on Form S-1 (file no. 333-145757) filed on October 11, 2007).
4.5	Indenture, dated as of December 4, 2009, between American Water Capital Corp. and Wells Fargo Bank, National Association (incorporated herein by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Form 8-K, file No. 001-34028, filed December 3, 2010).
4.6	Form of Debt Security (included in Exhibit 4.5 to this registration statement).
4.7	Form of Warrant Agreement.*
4.8	Form of Warrant.*
4.9	Form of Depositary Agreement.*
4.10	Form of Depositary Receipt.*

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<u>Exhibit Number</u>	<u>Description</u>
4.11	Form of Stock Purchase Contracts.*
4.12	Form of Stock Purchase Units.*
5	Opinion of Morgan, Lewis & Bockius LLP.
12	Computation of ratio of earnings to fixed charges and preferred stock dividends.
23.1	Consent of PricewaterhouseCoopers LLP.
23.2	Consent of Morgan, Lewis & Bockius LLP (included in Exhibit 5 to this registration statement).
24	Powers of Attorney (included on the signature page of this registration statement).
25	Form T-1 Statement of Eligibility under Trust Indenture Act of Wells Fargo Bank, National Association, as 1939 of Trustee relating to the Debt Securities.

* To be filed, if necessary, as an exhibit to a post-effective amendment to this registration statement or as an exhibit to a Current Report on Form 8-K to be filed by the registrant in connection with a specific offering, and incorporated herein by reference.

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) under the Securities Act if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that clauses (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those clauses is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424 (b) that is part of the registration statement;

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof;

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering;

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(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which the prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof; provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date;

(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(c) For an offering in which the securities to be registered are to be offered to existing security holders pursuant to warrants or rights and any securities not taken by security holders are to be reoffered to the public, the undersigned registrant hereby undertakes to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms

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of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

(d) The undersigned registrant hereby undertakes to deliver or cause to be delivered with the prospectus, to each person to whom the prospectus is sent or given, the latest annual report to security holders that is incorporated by reference in the prospectus and furnished to and meeting the requirements of Rule 14a-3 or Rule 14c-3 under the Securities Exchange Act of 1934, as amended; and, where interim financial information required to be presented by Article 3 of Regulation S-X is not set forth in the prospectus, to deliver, or cause to be delivered to each person to whom the prospectus is sent or given, the latest quarterly report that is specifically incorporated by reference in the prospectus to provide such interim financial information.

(e) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(f) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective; and

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(g) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the Trustee to act under subsection (a) of Section 310 of the Trust Indenture Act, as amended, in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Trust Indenture Act, as amended.

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<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Julia L. Johnson</u> Julia L. Johnson	Director	May 4, 2012
<u>/s/ George MacKenzie</u> George MacKenzie	Director	May 4, 2012
<u>/s/ William J. Marrazzo</u> William J. Marrazzo	Director	May 4, 2012

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[Table of Contents](#)**INDEX TO EXHIBITS**

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* To be filed, if necessary, as an exhibit to a post-effective amendment to this registration statement or as an exhibit to a Current Report on Form 8-K to be filed by the registrant in connection with a specific offering, and incorporated herein by reference.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren/Cheryl D. Norton**

23. CC – Reference: Cost of Capital. Please provide copies of all studies performed by AWWC and/or KAWC, or by consultants or investment firms hired by AWWC and/or KAWC, to assess:
- a. The KAWC's financial performance;
 - b. The performance of the KAWC relative to other utilities;
 - c. The adequacy of the KAWC's return on equity or overall rate of return.

Response:

- a. Certain information in the attached document contains confidential information. Therefore, the Company has filed a Petition for Confidential Treatment contemporaneously with these responses. The Company will provide copies of the requested documents to all parties in this case upon execution of an appropriate confidentiality agreement.
- b. There are none.
- c. Please refer to the response to part a.



AMERICAN WATER

**Business Performance Report
Kentucky**

For the period ended December 2012

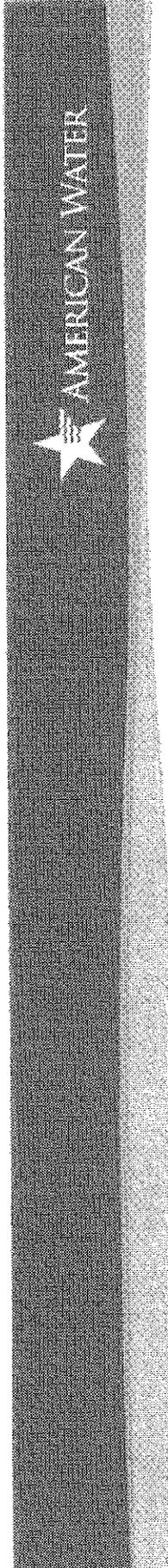


Sign-off

I have reviewed the contents of the Business Performance Report and, to the best of my knowledge and belief, the information presented in this report is accurate.

Cheryl D. Weston
State President (Signature)

01/24/13
(Date)



Index

- **Key Performance Indicators**
 - Discussion
- **Other Significant Items**
- **ROE Reconciliation**
- **Regulatory Activity**
- **Business Development**
- **Appendix**
 - Condensed Income Statement
 - Condensed Balance Sheet



Key Performance Indicators – December 2012

	Dollars in thousands, gallons in millions					
	YTD Actual	YTD Budget	Variance	%	Prior Year	Variance
System delivery	14,394	13,693	701	5.1%	13,785	608
Total water sales	12,508	12,050	459	3.8%	11,912	596
Non-revenue water (rolling 12 mos)	13.1%	12.0%	(1.1%)	(9.1%)	13.0%	0.5%
Customer connections	123,068	121,577	1,491	1.2%	120,511	2,557
Customer Satisfaction Survey	92.0%	90.0%	2.0%	2.2%	88.0%	4.0%
Service Quality Survey	90.1%	85.0%	5.1%	6.0%	88.6%	1.5%
Headcount	127	141	14	9.9%	141	14
Net capital expenditures (without BT)	17,719	19,575	1,856	9.5%	17,614	(105)
Environmental NOV	0	-	0	-	-	0
OSHA recordable injury rate	1.3	2.8	1.5	52.7%	2.9	1.6
Operating revenues	\$85,989	\$84,149	\$1,840	2.2%	\$83,316	\$2,673
Total operation and maintenance	\$34,136	\$34,971	\$835	2.4%	\$32,987	(\$1,149)
O&M efficiency ratio	39.7%	41.6%	1.9%	4.5%	39.6%	(0.1%)
Operating income (loss)	\$35,158	\$32,556	\$2,602	8.0%	\$34,129	\$1,030
Operating margin	40.9%	38.7%	2.2%	5.7%	41.0%	(0.1%)
Net income to Common Stock	\$14,498	\$12,400	\$2,098	16.9%	\$18,032	(\$3,535)
Return on equity	9.2%	7.9%	1.4%	17.3%	11.8%	(2.6%)



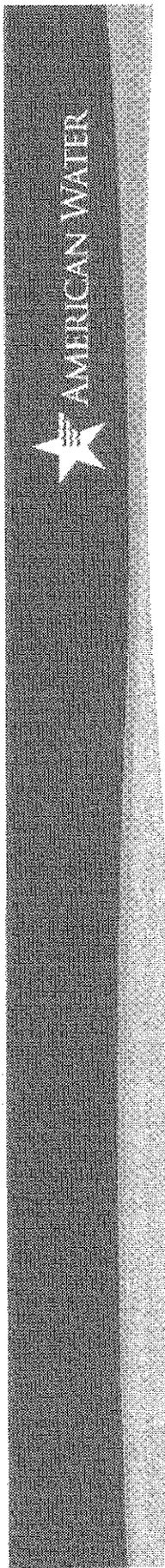
Discussion Points

- NRW – Although KAW did not meet the NRW target percent of 12%, KAW's Water Loss Strategy resulted in flat volume loss in 2012 compared to 2011 (1,877mgs to 1,871 mgs respectively).
- Capital Spend – KAW's lower than planned capital spend was primarily due to the lack of Main Relocation projects requested from the state transportation cabinet or county government in 2012. Service & Lateral Replacements were also under plan but this was mitigated by accelerating the AMR project. In 2012, KAW converted over 24,000 meters to radio read meters, resulting in the use of AMRs in 80% of our system and 69% of our meter reading routes.



Other Significant Items

- * KAW hosted more than 600 visitors to its community open house event (Waterfest), providing education, plant tours and equipment demonstrations.
- * Successfully transitioned the LFUCG Sewer, Landfill and Stormwater fees to LFUCG's third party vendor September 1.
- * Made significant donation to University of Kentucky library system (\$22,000) for renovation of conference room that bears company name. Formal dedication to be held in 2013 with university president.
- * Presenting sponsor for series of chamber luncheons that featured two U.S. congressman from Kentucky as speakers in 3Q and 4Q (Sen. Rand Paul and Rep. Andy Barr).



ROE Reconciliation

Kentucky American Water
Return on Equity Reconciliation
Summary Reconciliation 12/31/12

Reconciling Items	\$ in 1000's	%
Revenues	\$ 85,989	
Net Income to Common Stock	\$ 14,498	
Total Average Common Equity	\$ 157,236	9.22%
Actual ROE		9.22%
Authorized ROE (1)		9.70%
Regulatory Imposed		
Short Term Exclusions	\$ (308)	-0.20%
Long Term Exclusions	\$ (653)	-0.42%
Total Regulatory Imposed (2)	\$ (961)	-0.62%
Regulatory Lag		
Total Rate Base Lag	\$ 228	0.14%
Regulatory Asset Lag	\$ -	0.00%
Total Revenue Lag	\$ (615)	-0.39%
Operating Expense Lag	\$ 321	0.20%
Cost of Capital Lag	\$ 517	0.33%
Total Other Lag	\$ (234)	-0.15%
Total Regulatory Lag (3)	\$ 217	0.14%
Actual ROE (= 1 + 2 + 3)		9.22%



Regulatory Activity

Late Fee Filing

- * KAW received approval, effective November 1, to implement a 5% late fee on customer bills.

Certificate for Northern Connection

- * Briefs were submitted to the PSC and KAW is awaiting the findings of the PSC.

Rate Case

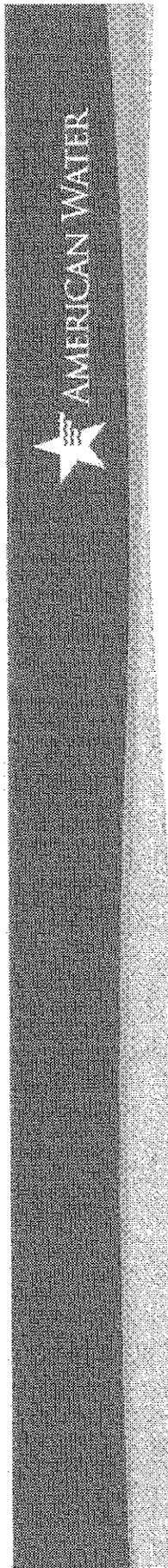
- * On December 28, KAW filed an application for a rate increase of 14.64% overall with additional revenues of \$12,317,702. A hearing will likely occur in June, with rates effective no earlier than July 28, 2013.

Tariff Filing

- * On December 18, KAW filed a request for a tariff change to be approved January 17, effective May 12 for new SAP bill format and 7.48 gallon per CCF conversion.

Other

- * DSIC Presentation to PSC and AG staff on September 27 was well attended by staff. Because of the three ongoing proceedings, commissioners did not attend.
- * Progress on legislation to allow fair market value purchase price for acquisitions has included requesting feedback on draft language from key groups, including PSC. Positioned to file in 2013 Legislative Session pending confirmation of legislative sponsor.
- * Progress on legislation for discounted rate for low-income customers has included producing draft language with input from key groups, including Community Action Council. Have targeted filing bill in 2013 Legislative Session pending confirmation of a legislative sponsor.



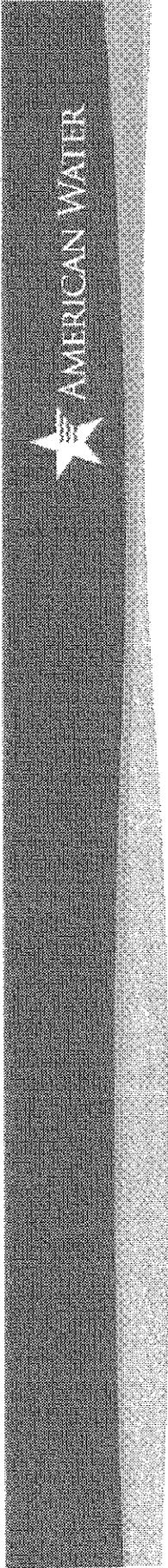
Business Development

Name Closed Deals	Implement Date	Deal Type	Agreement Status	Number of Customers	Revenue		EBIT		Initial Investment		Prob %
					Impact on Current Year	Annualized	Impact on Current Year	Annualized	YTD	Total Year	
			Total Closed Deals		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
			Total 2012 Budget		\$ 75,023	\$ 24,007					
			Over (Under) Target - CLOSED & PIPELINE % vs. Target		\$ (75,023)	\$ (24,007)			\$ -	\$ -	



Business Development Costs

Service Co	YTD Actual	YTD Budget	Variance
Divisional Costs	70,036	62,254	(7,782)
Total	9,789	65,583	55,793
	79,825	127,836	48,011



Appendix



Income Statement: For the period ended December 31, 2012

<i>(Dollars in thousands)</i>	YTD Actual	YTD Budget	Variance Favorable (Unfavorable)	Prior Year	Variance Favorable (Unfavorable)
Operating revenues	\$85,989	\$84,149	\$1,840	\$83,316	\$2,673
Operating expenses					
Total operation and maintenance	34,136	34,971	835	32,987	(1,149)
Depreciation and Amortization	11,799	11,704	(95)	11,098	(701)
General taxes	4,914	4,918	4	5,102	188
Loss (gain) on sale of assets	(19)	-	19	-	19
Total operating expenses net	50,830	51,593	762	49,187	(1,644)
Operating income (loss)	35,158	32,556	2,602	34,129	1,030
Other income (deductions)					
Interest, net	(11,766)	(12,345)	579	(10,933)	(632)
AFUDC	992	757	235	412	580
Amortization of debt expense	(73)	(67)	(7)	(86)	13
Other Net	(96)	(339)	243	(395)	299
Total other income (expenses)	(10,943)	(11,993)	1,050	(11,002)	59
Income (loss) before income taxes	24,215	20,563	3,652	23,127	1,089
Provision for income taxes	9,677	8,085	(1,592)	5,017	(4,661)
Net income (loss)	\$14,538	\$12,478	\$2,060	\$18,110	(\$3,572)

Amounts may not total due to rounding

* Net income to common \$2,098K favorable to budget, which includes Preferred dividend declared \$38K favorable.



Balance Sheet: For the period ended December 31, 2012

<i>(Dollars in thousands)</i>	DECYTD Current Year	DECYTD Prior Year
Assets		
Cash and cash equivalents	(\$1,094)	(\$224)
Other current assets	8,023	7,343
Total Property Plant and Equipment	500,017	486,217
Total Regulatory & Other L/T Assets	11,868	11,836
Total Assets	\$518,814	\$505,171
Capitalization and liabilities		
Short Term Debt	9,545	11,003
Current Portion of Long-term Debt	0	0
Other Current Liabilities	20,405	8,375
Total Long-term debt	192,390	192,390
Regulatory & Other Long Term Liabilities	85,506	87,014
Stockholders' equity	159,179	156,751
Contributions in aid of construction	51,790	49,638
Total capitalization and liabilities	\$518,814	\$505,171

Amounts may not total due to rounding

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: **Scott W. Rungren**

24. CC- Reference: Cost of Capital. Please provide copies of all known investment reports on AWWC published since January 1, 2012.

Response:

Please see the attached.

January 25, 2013

Heads Up

American Water (AWK-NYSE)

Rating and Market Data

Rating/Risk:	Outperform/Moderate
Price:	\$38.59
Target Price (US\$):	\$43.00
Market Cap (\$M):	\$6,821
ADTV (\$M):	\$27.0

*Price as of prior day's close

*Target Price and Rating is for 12 months

EPS Estimates

EPS	Q1	Q2	Q3	Q4	FY	P/E
2011A*	\$0.23	\$0.42	\$0.76	\$0.34	\$1.75	22.0x
2012E	\$0.28	\$0.66	\$0.87	\$0.33	\$2.13	18.1x
2013E					\$2.24	17.2x

*Adjusted for pending divestitures. Restatements are pending for 4Q 2011.

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Summer Gave and Sandy Took Away; 2013 Guidance

2012 Expected Results: After the close yesterday American Water announced its 2012 results would be at the low end of previously disclosed guidance of \$2.12 - \$2.22 prior to a \$7 million donation to American Water Charitable Foundation. We had 2012 full year estimates of \$2.24 and consensus was \$2.22. Further, the company estimates \$0.13 - \$0.16 of 2012 results were directly attributable to the above average hot weather in the summer months. The fourth quarter was negatively impacted by Hurricane Sandy, accelerated maintenance schedules and year end SAP implementation deadlines.

Guidance at the beginning of 2012 was for \$1.90 - \$2.00 and was raised in August to \$2.12 - \$2.22 after a very hot June and August. Overall, AWK was at the higher end of its guidance to exceeding it when excluding positive weather impacts.

2013 Guidance: AWK also announced 2013 guidance of \$2.15 - \$2.25 which is 8.5-14% growth over 2012 after backing out weather related impact from 2012. The 2013 growth rate is in line to above the company's stated long term goal of 7-10%. Factors which could impact this target in order of importance are: consumption, O&M expense, fuel & power, chemical and interest rates. Consumption is a function of weather with hot and dry being positive.

Sandy: AWK dodged major damage from Sandy, no loss of pump or treatment facilities. However, the longer term power outages across the state reduced overall consumption.

Donation: Previously, AWK announced it made a \$7 million donation to its American Water Charitable Foundation. The company did not make a donation in 2011, but did make a \$5 million donation in 2010. The after tax EPS effect will be approximately \$0.02. We classify it as a one time item.

Estimates: We have reworked our 2012 estimates to \$2.13 from \$2.24 not including \$0.02 or \$7 million from the donation. The reduced estimates are from lower revenue (1.3%) and a higher O&M ratio for the year (46.76% versus 45.80%). We have lowered our 2013 estimate by \$0.01 to \$2.24 due to the slightly lower revenue and potential for continued higher costs associated with Sandy cleanup.

Valuation remains attractive: AWK remains at the lower end of the valuation range for the water utility group in spite of improving fundamentals, above average EPS growth and the potential for strong dividend growth (matched with EPS growth going forward). We continue to view it as the company with the best risk / reward ratio in the water utility universe. We reiterate our Outperform rating and \$43 target which is 19.2x our 2013 estimate of \$2.24 – a small discount to the peer median average of 19.9x.

See Peer Valuation Comparison table on page 2.

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PEER VALUATION COMPARISON

Company	Price	Mkt. Cap	P/E LTM	F P/E 2013	P/Book	TEV/ EBITDA	TEV/ EBIT	Margin (%)		
								EBITDA	EBIT	Net
American States Water (NYSE:AWR)	\$50.60	972.3	19.1	19.1	2.2	8.7	12.1	32.5%	23.4%	11.2%
American Water Works (NYSE:AWK)	\$38.59	6821.1	18.0	17.2	1.5	9.5	13.2	46.0%	33.0%	13.0%
Aqua America (NYSE:WTR)	\$27.16	3800.8	24.7	22.6	2.9	12.5	17.1	57.1%	41.8%	21.5%
Artesian Resources (Nasdaq:ARTN.A)	\$22.88	196.7	20.2	19.9	1.7	10.4	13.9	43.5%	32.4%	14.1%
California Water Service (NYSE:CWT)	\$19.50	817.1	17.9	19.0	1.7	9.3	15.1	26.8%	16.5%	8.4%
Connecticut Water (Nasdaq:CTWS)	\$29.63	313.1	18.9	21.8	2.1	15.0	20.8	43.6%	31.4%	17.4%
Middlesex Water (Nasdaq:MSEX)	\$19.38	305.3	22.6	18.2	1.7	12.7	18.1	34.8%	24.5%	12.9%
San Jose Water (NYSE: SJW)	\$26.74	498.8	21.9	20.0	1.8	9.1	14.4	35.2%	22.1%	8.8%
York Water (Nasdaq:YORW)	\$18.27	235.5	25.9	24.4	2.4	12.7	15.9	61.3%	48.9%	22.0%
BOENNING & SCATTERGOOD	High		24.7	22.6	2.9	15.0	20.8	57.1%	41.8%	21.5%
	Low		17.9	17.2	1.5	8.7	12.1	26.8%	16.5%	8.4%
	Mean		20.4	20.2	2.0	10.9	15.6	39.9%	28.1%	13.4%
	Median		19.7	19.9	1.8	9.9	14.8	39.3%	27.9%	12.9%

Source: Capital IQ, Company Filings

American Water Works (AWK)
Income Statement (In \$ thousands, except per share data)

	2009	2010	2011	Q1A	Q2A	Q3A	Q4E	2012E	2013E
Operating Revenues	2,440,703	2,555,035	2,666,236	618,554	745,607	831,815	670,482	2,866,458	2,969,905
Operating Costs & Expenses									
O & M	1,324,355	1,290,941	1,301,793	310,004	327,577	355,126	347,737	1,340,444	1,360,217
Depreciation	294,240	330,264	351,821	92,104	92,329	96,219	98,206	378,858	404,999
Taxes & Other Income	199,262	205,597	210,478	57,121	55,282	52,861	54,060	219,324	230,290
Loss (Gain) on sale of assets	(763)	111	(993)	-413	-213	-31	0		0
Impairment Charge	450,000	-	-	-	-	-	-	-	-
Total Operating Costs	2,267,094	1,826,913	1,863,099	458,816	474,975	504,175	500,002	1,937,968	1,995,505
Operating Income	173,609	728,122	803,137	159,738	270,632	327,640	170,480	928,490	974,400
Other Income (deductions)	467,849	-	-	(79,654)	(79,730)	(76,616)	(77,765)	-	(321,609)
Interest expense (net)	(296,545)	(313,765)	(312,415)	4,362	5,076	3,735	3,500	(313,765)	15,000
All. For funds dur. Const.	11,486	9,644	13,131	2,081	2,313	1,548	1,500	16,673	6,500
All for funds borrowed during Const.	7,224	5,225	5,923	(1,266)	(1,361)	(1,322)	(1,375)	7,442	(5,000)
Amortization of debt expense	(6,647)	(4,516)	(5,055)	(616)	335	39	250	(5,324)	-
Other net	(792)	4,714	(1,041)	(75,093)	(73,367)	(72,616)	(73,890)	8	(305,109)
Total other income (deductions)	(285,274)	(298,698)	(299,457)	(75,093)	(73,367)	(72,616)	(73,890)	(294,966)	(305,109)
Income before tax	(111,665)	429,424	503,680	84,645	197,265	255,024	96,590	633,524	669,290
Provision for income tax	121,418	174,352	198,751	35,393	80,602	100,913	38,636	255,544	267,716
Net Income Cont. Oper.	(233,083)	255,072	304,929	49,252	116,663	154,111	57,954	377,980	401,574
Discontinued Oper.		12,755	4,684	(7,498)	(9,637)	-299		(17,434)	
Net Income	(233,083)	267,827	309,613	41,754	107,026	153,812	57,954	360,546	401,574
Diluted EPS	\$ (1.39)	\$ 1.53	\$ 1.75	\$ 0.24	\$ 0.60	\$ 0.86	\$ 0.33	\$ 2.03	\$ 2.24
Adjustments									
Adjustments to EPS	2.63	0.07	0.16	0.04	0.05	0.00	-	-	-
Diluted EPS Including Adj.	\$ 1.25	\$ 1.46	\$ 1.75	\$ 0.28	\$ 0.66	\$ 0.87	\$ 0.33	\$ 2.13	\$ 2.24
SHOUT - Diluted	168,164	175,124	176,475	177,028	177,491	177,841	178,063	177,606	179,500

Margin Analysis

O&M	54.26%	50.53%	48.83%	50.12%	43.93%	42.69%	51.86%	46.76%	45.80%
D&A	12.06%	12.93%	13.20%	14.89%	12.38%	11.57%	14.65%	13.22%	13.64%
OP Margin	7.11%	28.50%	30.12%	25.82%	36.30%	39.39%	25.43%	32.39%	32.81%
Net Income	-9.55%	10.48%	11.61%	6.75%	14.35%	18.49%	8.64%	12.58%	13.52%
Tax Rate	-108.73%	40.60%	39.46%	41.81%	40.86%	39.57%	40.00%	40.34%	41.00%
EBITDA	37.61%	41.42%	43.32%	40.71%	48.68%	50.96%	40.07%	45.59%	46.45%

Source: Company Filing, B&S Estimates

Disclosure Appendix

Rating and Price Target History:



Associated Risk Factors

The realization of any or all of the following risk factors, among others, may adversely affect the company's stock price: downturn in the economy, change in the valuation of mid- and large-cap banks, flatness or inversion of the yield curve and unanticipated large credit losses.

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Outperform (Buy)	44%	Outperform (Buy)	6%
Neutral (Hold)	51%	Neutral (Hold)	5%
Underperform (Sell)	5%	Underperform (Sell)	0%

(a) Related to services provided within the past 12 months.

(b) Total may not add up to 100% due to rounding.

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ESTIMATE / TARGET PRICE REVISIONS

BREAN CAPITAL, LLC

American Water Works Co., Inc.

(AWK/ NYSE)

January 25, 2013

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Pre-Announces 2012 Results and Offers 2013 Guidance; Maintain Buy Rating

Buy
PT: \$45.00

Investment Summary

After the close yesterday, AWK pre-announced 2012 results and offered 2013 EPS guidance. Final 2012 results are expected to come in at the low end of the previously communicated \$2.12 - \$2.22 range, which would be below current consensus of \$2.19. Superstorm Sandy negatively impacted 4Q12 volumes in New Jersey, not an unexpected occurrence, given the damage to the state's coastal areas. Looking forward, 2013's guidance range of \$2.15 - \$2.25 per share falls squarely within consensus (\$2.22), which we view as very obtainable excluding any significant weather impacts. We have lowered our 4Q12 forecast, are maintaining our 2013 and 2014 estimates, and are reiterating our Buy rating and \$45 target price.

Discussion

Impacts from Superstorm Sandy no real surprise. AWK's pre-announcement that 4Q12 results would come in at the bottom end of the previous communicated guidance range of \$2.12 - \$2.22 was not surprising, given the impacts other utilities like New Jersey Resources (NJR, \$41.43, Buy) have seen. The caveat to the "low end of guidance" commentary is the exclusion of a \$7 million donation to the American Water Charitable Foundation (an approximate \$0.04 impact). Beyond Sandy, some higher operational and CAPEX expenses also impacted results; given the favorable impact on the company's financials in 2Q12 and 3Q12, it appears they accelerated some infrastructure investment that wouldn't have been expected to negatively impact results, sans Superstorm Sandy.

2013 Guidance in line with our expectations. The initial 2013 guidance range of \$2.15 - \$2.25 looks very obtainable and represents solid YOY growth if we weather-normalize 2012's anticipated EPS results by removing the \$0.13 - \$0.16 of EPS gain from 2012's extraordinarily hot summer. We note guidance mates up nicely with the \$2.22 consensus estimate.

Adjusting 4Q12 results. We've lowered our 4Q12 GAAP EPS estimate from \$0.36 to \$0.28. We have already been using our 2013 EPS estimate of \$2.22 for valuation purposes, so there is no change in our outlook or fair value share estimate of \$45.00.

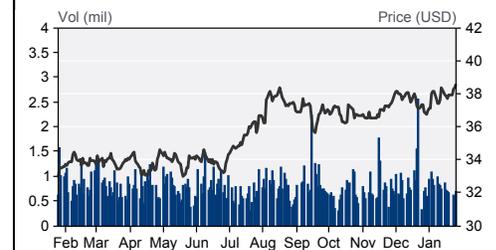
Summary - it's been an unusual couple of weeks for AWK. CFO Ellen Wolf announced her impending departure recently, and the 4Q12 pre-announcement, while not a surprise given the impacts of Superstorm Sandy, has interrupted what has been an almost event-free string of positive YOY results on a quarterly basis, dating back to 1Q10 (and many of those quarters had outsized outperformances relative to consensus). That said, we don't see 4Q12 results as an inflection point in terms of share price appreciation. AWK's YOY results (2013 vs. 2012) should be significantly better (weather normalized), as it continues to see positive impacts from rate case awards and continued streamlining of the cost structure. The shares, currently trading at 17.4x 2013 consensus, are well below the peer group average of 19.5x. We continue to recommend accumulation at current levels, particularly on any pullbacks that may occur.

Valuation / Target Price

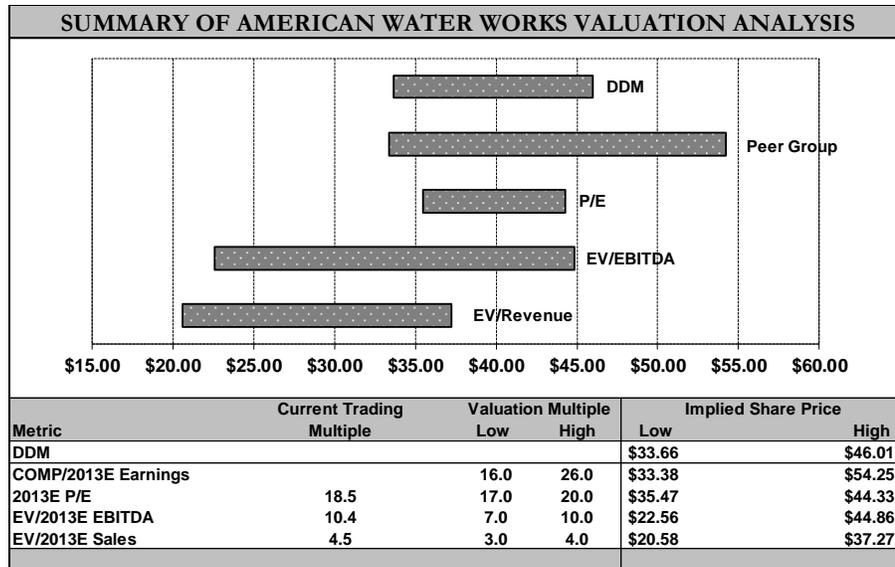
AWK: Our target price of \$45 is based on the shares attaining a level of just over 20x our 2013 EPS estimate of \$2.22.

Price	\$38.59
52-Week High/Low	\$39.38-\$32.21
Shares Out (mm)	176.8
Market Cap (mm)	\$6,821
Avg. Daily Vol (000)	831,993
Short Interest	0.4%
EV (mm)	NA

EPS	FY11A	FY12E	FY13E
Mar	\$0.24	\$0.28A	\$0.31
June	\$0.48	\$0.66A	\$0.66
Sept	\$0.78	\$0.87A	\$0.82
Dec	\$0.34	\$0.28	\$0.44
Prior:	--	\$0.36	--
FY (Dec)	\$1.73	\$2.09	\$2.22
Prior:	--	\$2.17	--
P/E (x)	22.3	18.5	17.4



Source: Bloomberg



Water Industry Comparables

Peer Group Analysis		01/24/13	Mkt. Cap	EPS	EPS	EPS	P/E	P/E	P/E	Est LT	EPS
Company Name	Ticker	Price	Rating	(MM)	CY2011	CY2012	CY2013	CY11E	CY12E	CY13E	Growth
American Water Works Company, Inc.	AWK	\$38.59	BUY	\$6,777	\$1.66	\$2.19	\$2.22	23.2x	17.6x	17.4x	8.5%
Aqua America, Inc.	WTR	\$27.16	BUY	\$3,777	\$1.05	\$1.10	\$1.19	25.9x	24.8x	22.8x	7.3%
The York Water Company	YORW	\$18.27	BUY	\$234	\$0.71	\$0.72	\$0.77	25.7x	25.5x	23.6x	4.9%
Connecticut Water Service, Inc.	CTWS	\$29.63	NA	\$315	\$1.29	\$1.54	\$1.45	23.0x	19.3x	20.5x	6.1%
Consolidated Water Co. Ltd.	CWCO	\$8.62	BUY	\$125	\$0.42	\$0.55	\$0.62	20.5x	15.7x	14.0x	20.0%
American States Water Company	AWR	\$50.60	HOLD	\$981	\$2.23	\$2.63	\$2.68	22.7x	19.2x	18.9x	4.0%
California Water Service Group	CWT	\$19.50	BUY	\$811	\$0.86	\$0.98	\$1.02	22.8x	19.9x	19.1x	5.0%
Sjw Corp.	SJW	\$26.74	BUY	\$499	\$0.93	\$1.05	\$1.34	28.8x	25.5x	20.0x	14.0%
Group Average								24.1x	20.9x	19.5x	8.7%

Source: TRSL

Peer Group Analysis		01/24/13	Mkt. Cap	Current	Target	Target	Price	Price	Target	Upside	Yield	
Company Name	Ticker	Price	Rating	(MM)	Multiple	Multiple	Range	Range	Price	Potential		
					CY11	(Low)	(Low)	(High)				
American Water Works Company, Inc.	AWK	\$38.59	BUY	\$6,777	23.2x	15.0x	20.0x	\$43.74	\$44.32	\$45.00	17%	2.6%
Aqua America, Inc.	WTR	\$27.16	BUY	\$3,777	25.9x	18.0x	24.0x	\$21.47	\$28.63	\$29.00	7%	2.6%
The York Water Company	YORW	\$18.27	BUY	\$234	25.7x	19.0x	26.0x	\$14.71	\$20.12	\$20.00	9%	3.0%
Connecticut Water Service, Inc.	CTWS	\$29.63	NA	\$315	23.0x	19.0x	24.0x	\$27.51	\$34.75	NA	NA	3.3%
Consolidated Water Co. Ltd.	CWCO	\$8.62	BUY	\$125	20.5x	15.0x	21.0x	\$9.26	\$12.96	\$13.00	51%	3.5%
American States Water Company	AWR	\$50.60	HOLD	\$981	22.7x	14.0x	19.0x	\$37.48	\$50.86	NA	NA	2.8%
California Water Service Group	CWT	\$19.50	BUY	\$811	22.8x	14.0x	21.0x	\$14.28	\$21.42	\$22.00	13%	3.2%
Sjw Corp.	SJW	\$26.74	BUY	\$499	28.8x	16.0x	21.0x	\$21.41	\$28.10	\$28.00	5%	2.7%
Group Average								16.3x	22.0x			3.0%

Sources: TRSL, Brean Murray, Carret & Co.

Source: Company Reports, Brean Capital LLC estimates

American Water Works Company, Inc., 2012E										
(SM, except per share data)										
Fiscal year ends December 31										
	1Q12	Rate or Margin	2Q12	Rate or Margin	3Q12	Rate or Margin	4Q12E	Rate or Margin	2012E	Rate or Margin
Operating Revenues	618.6		745.6		831.8		719.9		2,915.9	
Operation and maintenance	310.0	50.1%	327.6	43.9%	355.1	42.7%	406.8	56.5%	1,399.5	48.0%
Depreciation and amortization	92.1	14.9%	92.3	12.4%	96.2	11.6%	97.5	13.5%	378.1	13.0%
General taxes	57.1	9.2%	55.3	7.4%	52.9	6.4%	50.4	7.0%	215.7	7.4%
Loss (gain) on sales of assets	(0.4)	-0.1%	(0.2)	0.0%	(0.3)	0.0%	-	0.0%	(0.9)	0.0%
Impairment charges	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Total operating expenses, net	458.8	74.2%	475.0	63.7%	504.2	60.6%	554.7	77.0%	1,992.6	68.3%
Operating income	159.7	25.8%	270.6	36.3%	327.6	39.4%	165.3	23.0%	923.3	31.7%
Interest, net	(79.7)	-12.9%	(79.7)	-10.7%	(76.6)	-9.2%	(77.0)	-10.7%	(313.0)	-10.7%
Amortization of debt expense	(1.3)	-0.2%	(1.4)	-0.2%	(1.3)	-0.2%	(1.4)	-0.2%	(5.4)	-0.2%
Other, net	5.8	0.9%	7.7	5.0%	5.7	5.0%	(1.0)	-0.1%	18.2	0.6%
Total other income (deductions)	(75.1)	-12.1%	(73.4)	-9.8%	(72.6)	-8.7%	(79.4)	-11.0%	(300.5)	-10.3%
Pre-tax earnings	84.6	13.7%	197.2	26.4%	255.0	30.7%	85.8	11.9%	622.7	21.4%
Income taxes	35.4	41.8%	80.6	40.9%	100.9	39.6%	35.2	41.0%	252.1	40.5%
Net income	49.3	8.0%	116.6	15.6%	154.1	18.5%	50.6	7.0%	370.6	12.7%
Earnings per share:										
From continuing operations	\$0.28		\$0.66		\$0.87		\$0.28		\$2.09	
Average common shares outstanding	177		178		178		178		178	
American Water Works Company, Inc., 2013E										
(SM, except per share data)										
Fiscal year ends December 31										
	1Q13E	Rate or Margin	2Q13E	Rate or Margin	3Q13E	Rate or Margin	4Q13E	Rate or Margin	2013E	Rate or Margin
Operating Revenues	642.1		755.1		844.86		795.46		3,037.6	
Operation and maintenance	321.1	50.0%	330.0	43.7%	371.7	44.0%	429.6	54.0%	1,452.4	47.8%
Depreciation and amortization	96.0	14.9%	97.0	12.8%	98.0	11.6%	99.0	12.4%	390.0	12.8%
General taxes	59.1	9.2%	55.1	7.3%	54.9	6.5%	55.7	7.0%	224.8	7.4%
Loss (gain) on sales of assets	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Impairment charges	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Total operating expenses, net	476.1	74.1%	482.1	63.8%	524.7	62.1%	584.2	73.4%	2,067.2	68.1%
Operating income	166.0	25.9%	273.0	36.2%	320.2	37.9%	211.2	26.6%	970.4	31.9%
Interest, net	(77.0)	-12.0%	(77.2)	-10.2%	(77.4)	-9.2%	(77.6)	-9.8%	(309.2)	-10.2%
Amortization of debt expense	(1.3)	-0.2%	(1.3)	-0.2%	(1.3)	-0.2%	(1.3)	-0.2%	(5.2)	-0.2%
Other, net	5.0	0.8%	5.0	5.0%	5.0	5.0%	5.0	0.6%	20.0	0.7%
Total other income (deductions)	(73.3)	-11.4%	(73.5)	-9.7%	(73.7)	-8.7%	(73.9)	-9.3%	(294.4)	-9.7%
Pre-tax earnings	92.7	14.4%	199.5	26.4%	246.5	29.2%	137.3	17.3%	676.1	22.3%
Income taxes	37.1	40.0%	79.8	40.0%	98.6	40.0%	54.9	40.0%	270.4	40.0%
Net income	55.6	8.7%	119.7	15.9%	147.9	17.5%	82.4	10.4%	405.6	13.4%
Earnings per share:										
From continuing operations	\$0.30		\$0.65		\$0.81		\$0.45		\$2.22	
Average common shares outstanding	183		183		183		183		183	
American Water Works Company, Inc., 2014E										
(SM, except per share data)										
Fiscal year ends December 31										
	1Q14E	Rate or Margin	2Q14E	Rate or Margin	3Q14E	Rate or Margin	4Q14E	Rate or Margin	2014E	Rate or Margin
Operating Revenues	674.8		789.4		884.42		822.09		3,170.7	
Operation and maintenance	330.6	49.0%	343.4	43.5%	384.7	43.5%	439.8	53.5%	1,498.6	47.3%
Depreciation and amortization	99.0	14.7%	99.5	12.6%	100.0	11.3%	100.5	12.2%	399.0	12.6%
General taxes	62.1	9.2%	63.2	8.0%	57.5	6.5%	57.5	7.0%	240.3	7.6%
Loss (gain) on sales of assets	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Impairment charges	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Total operating expenses, net	491.7	72.9%	506.1	64.1%	542.2	61.3%	597.9	72.7%	2,137.8	67.4%
Operating income	183.1	27.1%	283.4	35.9%	342.2	38.7%	224.2	27.3%	1,032.9	32.6%
Interest, net	(78.0)	-11.6%	(78.4)	-9.9%	(78.8)	-8.9%	(80.2)	-9.8%	(315.4)	-9.9%
Amortization of debt expense	(1.3)	-0.2%	(1.6)	-0.2%	(1.8)	-0.2%	(1.6)	-0.2%	(6.3)	-0.2%
Other, net	5.0	0.7%	5.0	5.0%	5.0	5.0%	5.0	0.6%	20.0	0.6%
Total other income (deductions)	(74.3)	-11.0%	(75.0)	-9.5%	(75.6)	-8.5%	(76.8)	-9.3%	(301.7)	-9.5%
Pre-tax earnings	108.7	16.1%	208.4	26.4%	266.6	30.1%	147.4	17.9%	731.1	23.1%
Income taxes	43.5	40.0%	83.4	40.0%	106.7	40.0%	59.0	40.0%	292.4	40.0%
Net income	65.2	9.7%	125.0	15.8%	160.0	18.1%	88.4	10.8%	438.7	13.8%
Earnings per share:										
From continuing operations	\$0.36		\$0.68		\$0.87		\$0.48		\$2.40	
Average common shares outstanding	183		183		183		183		183	

Source: Company Reports, Brean Capital LLC estimates

ESTIMATE / TARGET PRICE REVISIONS

RELATED COMPANIES			
Company	Ticker	Rating	Price
American States Water Company	AWR	Hold	50.60
Consolidated Water Co., Ltd.	CWCO	Buy	8.62
SJW Corp.	SJW	Buy	26.74
Aqua America, Inc.	WTR	Buy	27.16
The York Water Company	YORW	Buy	18.27

Risks

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Buy - Expected to appreciate by at least 10% within the next 12 months.

Hold - Fully valued, not expected to appreciate or decline materially within the next 12 months.

Sell - Expected to decline by at least 10% within the next 12 months.

Rating Category	Count	Percent	IB Serv./ Past 12Mos.	
			Count	Percent
BUY	141	66.20%	84	59.57%
HOLD	67	31.46%	31	46.27%
SELL	5	2.35%	4	80.00%
NOT RATED				

Note: Stock price volatility may cause temporary non-alignment of some ratings with some target prices.

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ESTIMATE / TARGET PRICE REVISIONS

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25 January 2013 | 8 pages

 Water Utilities (GICS) | Utilities (Citi)
 North America | United States

American Water Works Company, Inc. (AWK)

Alert: Weather, One Time Items Mar 4Q12, But Longer-Term Outlook Unchanged

American Water provides a 2013 Guidance range of \$2.15 - \$2.25. On 1/24/13 the company established 2013 guidance slightly above our 2013 estimates of \$2.16 and generally in line with consensus at \$2.20.

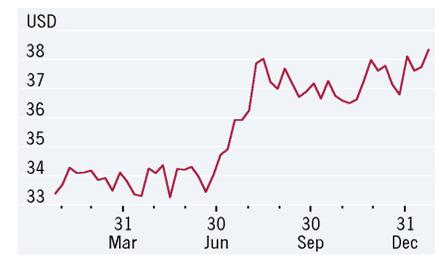
Fourth Quarter Performance Weighs on 2012 Earnings. American Water also announced that it expects 2012 EPS from continued operations to fall within the low-end of its previously established range of \$2.12 to \$2.22. These figures include the \$0.13-0.16 impact from increased sales due to above average temperatures mid-year. Fourth quarter performance was impacted by the accelerated maintenance of water and wastewater infrastructure, increased costs and lower sales associated with Hurricane Sandy, and higher than expected costs in SAP software implementation. In our view the issues affecting 4Q12 appear to not have material lasting effects to long term earnings power.

Our Target Price Remains \$40. Our target price is predicated on a 17.5x P/E multiple.

■ Company Update

Buy	1
Price (24 Jan 13)	US\$38.59
Target price	US\$40.00
Expected share price return	3.7%
Expected dividend yield	2.6%
Expected total return	6.2%
Market Cap	US\$6,821M

Price Performance (RIC: AWK.N, BB: AWK US)



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See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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American Water Works Company, Inc.

Valuation

We calculate a target price of \$40 per share for American Water using our P/E valuation model. We apply an 18x target multiple to our \$2.29/share EPS estimate for 2014, which yields a \$41.30 share value. This share value is then discounted 1/2 of a year which gets us to a rounded \$40/share target price.

We calculate the target multiple using two separate approaches and average the two. In our first approach we use a regression that plots BBB bond yields against one year forward water utility multiples. This is the method we use to calculate our target multiples for the electric utilities. We assume 2014 BBB bond yields will increase by 100 bps in one year to ~6.6%. The regression implies a target multiple of 21.5x for water utilities based on where we believe BBB bonds will be trading in one year. We then apply a 4.0x discount for American Water, which is based on the historical spread between AWK and the water utility average and arrive at a target multiple of 17.5x.

Our second approach applies a spread to our electric utility target multiple which we set at 16x. We found that AWK has historically traded at a 2.5x multiple spread to the electric group which gets us to a 18.5x target multiple. The average of these two approaches results in an 18x multiple.

Risks

When assessing the risks to achieving our target price it is appropriate to consider American Water's geographic diversity, earnings stability, limited commodity exposure, manageable leverage, and low level of asset obsolescence. Compared to most other Utilities which operate in one or only a handful of States, American Water operates in 30 different States. This reduces idiosyncratic risk at the parent level both from a regulatory perspective and from earnings fluctuation driven by abnormal weather in a given region. Earnings are relatively stable, with more than 90% of operating income coming from regulated utilities, where rates are set by State Commission.

Management guided a long term 45-50% equity to capital ratio, which is appropriate for an investment grade utility. The current 42% equity/capital ratio borders on the high end of investment grade utilities, but the Company should be able to achieve its target by 2013. Finally, water infrastructure in general has a long life with little risk of becoming obsolete.

We list below, risks that could prevent American Water from achieving our target price:

Capital Investment Growth – AWK spends capital in excess of depreciation to provide acceptable service to its growing customer base and relies on an adequate rate to earn its cost of capital. Failure to obtain adequate financing through the equity and debt markets could limit investment.

Bad Debt Recovery – In a bad economy, customers are less able to pay their utility bills on time or at all.

Weather & Conservation – Without weather normalization or decoupling rate mechanisms, AWK is exposed to fluctuations in temperatures, water conditions and customer conservation.

Regulatory Costs – The Company's operations are subject to various regulations, including environmental. Costs to comply with rules may be significant.

Rate Relief – Several hundred million dollars of rate relief is pending for AWK and only a portion is included in our estimates. The company may be successful in obtaining more rate relief than we currently anticipate. This would positively impact earnings and cash flows.

Target Multiple – Our target multiple is based on our assumption of where BBB bonds yields will be in one year. If our assumption proves too conservative and BBB yields trend higher than our forecast, this would have negative implications for our target multiple and valuation.

If the impact on the company from any of these factors proves to be less or more than we anticipate, the stock could materially outperform or underperform our target.

Appendix A-1 Analyst Certification

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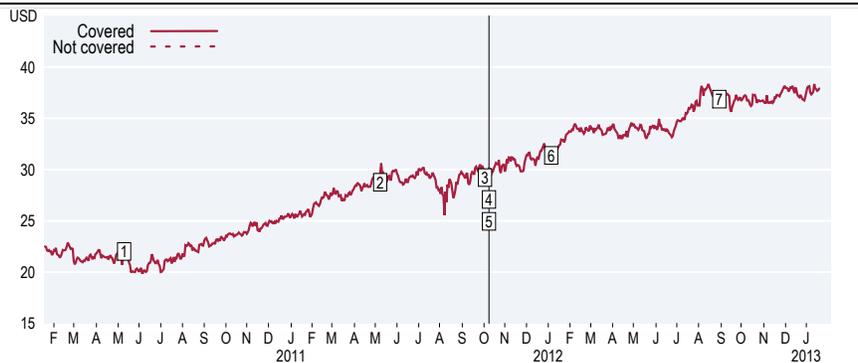
American Water Works Company, Inc. (AWK)

Ratings and Target Price History

Fundamental Research

Analyst: Brian Chin

Covered since May 16 2011



	Date	Rating	Target Price	Closing Price
1	11-May-10	2M	*23.50	21.65
2	9-May-11	*1L	*32.00	29.64
3	4-Oct-11	1L	*35.00	29.45

	Date	Rating	Target Price	Closing Price
4	8-Oct-11	Stock rating system changed		
5	8-Oct-11	*1	35.00	29.37
6	5-Jan-12	1	*36.00	31.69

	Date	Rating	Target Price	Closing Price
7	30-Aug-12	1	*40.00	36.99

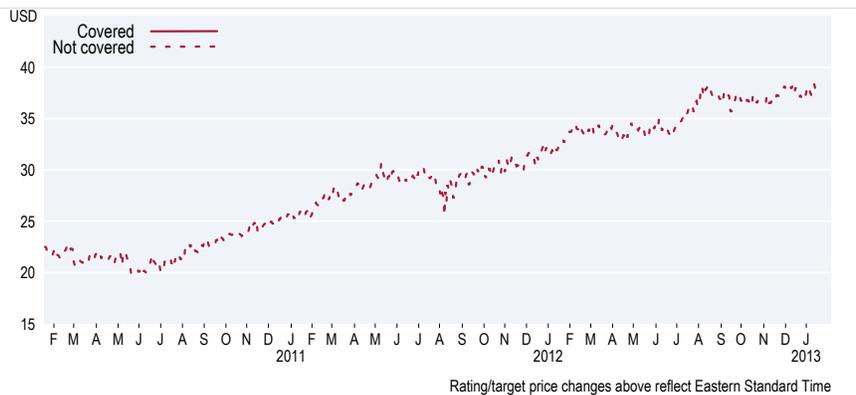
* Indicates change

Rating/target price changes above reflect Eastern Standard Time

American Water Works Company, Inc. (AWK)

Ratings and Target Price History
Best Ideas Research
Relative Call (3 Month)

Analyst: Brian Chin
 Covered since May 16 2011



* Indicates change

Rating/target price changes above reflect Eastern Standard Time

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Data current as of 31 Dec 2012

Citi Research Global Fundamental Coverage	12 Month Rating			Relative Rating		
	Buy	Hold	Sell	Buy	Hold	Sell
% of companies in each rating category that are investment banking clients	53%	49%	45%	60%	49%	55%

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American Water Works (AWK)

Rating	NEUTRAL*
Price (24 Jan 13, US\$)	38.59
Target price (US\$)	41.00 [†]
52-week price range	38.59 - 32.90
Market cap. (US\$ m)	6,821
Enterprise value (US\$ m)	12,510

*Stock ratings are relative to the coverage universe in each analyst's or each team's respective sector.
[†]Target price is for 12 months.

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EARNINGS

Modestly Lower than Expected 2013

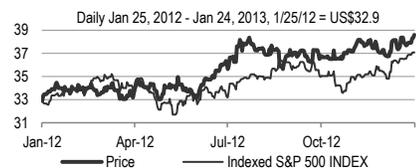
AWK initiated 2013 earnings guidance of \$2.15-2.25 vs. our and Street's \$2.22. Mgmt indicated the modestly lower-than-expected earnings range includes remaining costs for SAP system integration, which is expected to be fully implemented by year-end 2013. **We expect the market to be modestly disappointed** with the range given the bottom-end, for the first time since IPO, slipped below their targeted 7-10% growth rate (after adjusting for \$0.13-\$0.16 of 2012 weather benefit).

- We are maintaining our 2013 EPS of \$2.22, which is slightly above the mid-point due to expected ability to upward surprise as a result of increased Hurricane Sandy-related infrastructure replacement and hardening and continued ability to cut costs.

AWK also guided down 2012 full year EPS to the low-end of the \$2.12-2.22 range vs. our \$2.18 and Street's \$2.19. The worse-than-expected performance is a result of lower volumes post Sandy coupled with accelerated maintenance. The bottom-end implies 4Q EPS of \$0.31, which if including the 4Q one-time \$0.02 American Water Charitable Foundation points to \$0.29. We are updating our 4Q EPS to \$0.31 and full year 2012 to \$2.12.

Earnings Call. AWK will host an earnings call February 27, 2013 at 9AM EST. During the earnings call we expect investors to be focused on (a) CFO succession (b) updated capex expectations – namely Sandy, M&A, and spend concentration in DSIC states, (c) cost mitigation efforts and visibility into achieving their targeted sub-40% efficiency ratio by 2015, and (d) durability of 7-10% EPS growth rate.

Share price performance



Financial and valuation metrics

Year	12/11A	12/12E	12/13E	12/14E
EPS (CS adj.) (US\$)	1.75	2.12	2.22	2.38
Prev. EPS (US\$)	—	2.18	—	—
P/E (x)	22.1	18.2	17.4	16.2
P/E rel. (%)	144.9	126.9	131.5	137.0
EBITDA (US\$ m)	1,148	1,296	1,341	1,413
EV/EBITDA (current)	10.7	9.5	9.2	8.7
Net debt (US\$ m)	5,870	5,689	5,994	6,252
FFO/Interest	2.1	2.4	2.4	2.4
FFO/Total Debt	0.11	0.13	0.13	0.13
Number of shares (m)	177	BV/share (Next Qtr., US\$)		25
Net debt (Next Qtr., US\$ m)	5,689	Dividend (current, US\$)		0.98
Net debt/tot cap (Next Qtr., %)	126.9	Dividend yield (%)		0.65

Source: Company data, Credit Suisse estimates.

Quarterly EPS	Q1	Q2	Q3	Q4
2011A	0.18	0.46	0.76	0.35
2012E	0.28	0.66	0.87	0.31
2013E	0.36	0.65	0.82	0.39

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Companies Mentioned *(Price as of 24-Jan-2013)*

American Water Works (AWK.N, \$38.59, NEUTRAL, TP \$41.0)

Disclosure Appendix

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Price and Rating History for American Water Works (AWK.N)

AWK.N	Closing Price	Target Price	
Date	(US\$)	(US\$)	Rating
11-Feb-11	26.62	29.00	N *
24-Jun-11	29.24	32.00	
09-Dec-11	31.08	35.00	
03-Aug-12	37.62	41.00	

* Asterisk signifies initiation or assumption of coverage.



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Price Target: (12 months) for American Water Works (AWK.N)

Method: We reach our \$41 target price for American Water (AWK) through use of traditional price-to-earnings (P/E) multiples and dividend discount valuation for multiple validation. In solving for a normalized stock target price we took a two stage multiple approach that discounts AWK's normalized 2015 EPS to today using 14x undiscounted target P/E multiple backstopping this we used combination of comparable group multiples with a methodology of: (a) 2015 EPS used as a baseline (b) applying a group multiple to the 2015 estimate and grow shares with the dividend multiplier (c) reinvestment of the dividend each year to capture the compounding multiplier effect on ownership interest, and (d) finally discounting back the future value to 2012 to derive a price target. (see 'A Thought...Evolution-izing Regulated Utility Valuation, 6/24/11' and 'Could 17x be the new 12.5x, 12/12/11' for a more detailed methodology description)

Risk: Risks to our \$41 target price for American Water (AWK): Our earnings growth and subsequent target price valuation is dependent on continuation of (a) constructive regulatory relationships (b) ability to invest organically (c) execution of M&A. Also near-term estimates will vary due to weather, O&M, and non-regulated gross margin variations.

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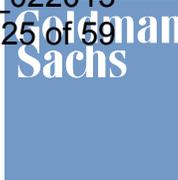


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COMPANY UPDATE

American Water Works Co., Inc. (AWK)

Buy

Equity Research

Pullback presents an attractive entry point to own a secular winner

What's changed

On Friday, January 25 AWK underperformed the S&P by 350bp after pre-announcing 4Q2012 results below consensus (\$0.32 vs. consensus of \$0.39), but providing in-line 2013 guidance. The company will provide additional details on the quarter and guidance on its conference call on February 27. The company highlighted the negative impact of Hurricane Sandy on New Jersey water volumes as the key reason for the quarterly miss.

Implications

We view soft 4Q2012 results as non-recurring due to Hurricane Sandy, with no impact on our forward estimates. Storm conditions and weather will create volatility in quarterly results, but we believe investors should focus on longer-term earnings power in valuing utilities.

Strong EPS growth remains ahead for this secular winner. AWK benefits from the need to replace outdated water pipelines, driving solid rate base and earnings growth. We estimate, after stripping out the benefit of weather in 2012, AWK will deliver a 9% EPS CAGR through 2014.

AWK will deliver first quartile dividend growth, driving long-term outperformance. Our analysis suggests owning above-average dividend growers among utilities consistently generates alpha.

Historically, taking advantage of one-day pullbacks in AWK also yields near-term results. Since mid-2009, AWK underperformed the S&P by at least 250bp in 13 trading sessions. In the following three months, AWK outperformed the XLU/S&P by an average of 6%/3%.

Valuation

We maintain our 12-month, P/E-based price target of \$42, implying 15% total return. AWK trades at a 14% P/E discount to water utility peers.

Key risks

Key risks relate to demand, regulatory outcomes and cost management.

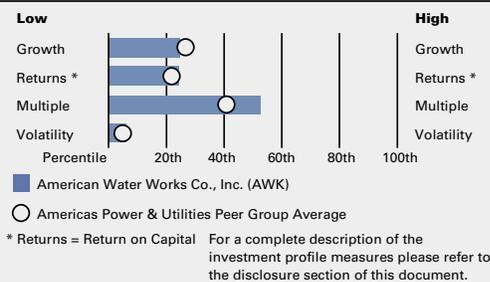
INVESTMENT LIST MEMBERSHIP

Americas Buy List
Americas Conviction Buy List

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Investment Profile

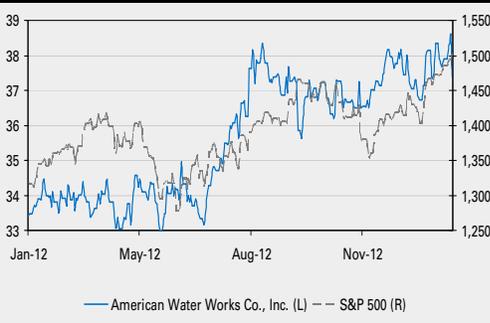


Key data	Current
Price (\$)	37.40
12 month price target (\$)	42.00
Market cap (\$ mn)	6,638.2
Dividend yield (%)	2.6
Net margin (%)	13.2
Debt/total capital (%)	56.1

	12/11	12/12E	12/13E	12/14E
Revenue (\$ mn)	2,691.4	2,853.2	2,902.3	3,016.4
EPS (\$)	1.81	2.22	2.23	2.41
P/E (X)	20.7	16.8	16.8	15.6
EV/EBITDA (X)	9.5	9.2	9.2	8.8
ROE (%)	7.6	9.1	8.7	8.9

	9/12	12/12E	3/13E	6/13E
EPS (\$)	0.87	0.42	0.36	0.58

Price performance chart



Share price performance (%)	3 month	6 month	12 month
Absolute	1.7	4.9	13.7
Rel. to S&P 500	(4.4)	(6.6)	0.3

Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 1/25/2013 close.

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American Water Works Co., Inc.: Summary Financials

Profit model (\$ mn)	12/11	12/12E	12/13E	12/14E	Balance sheet (\$ mn)	12/11	12/12E	12/13E	12/14E
Total revenue	2,691.4	2,853.2	2,902.3	3,016.4	Cash & equivalents	14.2	15.3	23.9	13.1
Cost of goods sold	0.0	0.0	0.0	0.0	Accounts receivable	270.3	370.3	370.3	370.3
SG&A	0.0	0.0	0.0	0.0	Inventory	28.6	31.9	31.9	31.9
R&D	0.0	0.0	0.0	0.0	Other current assets	1,084.5	221.8	221.8	221.8
Other operating profit/(expense)	(1,533.6)	(1,515.4)	(1,552.0)	(1,593.5)	Total current assets	1,397.7	639.2	647.9	637.1
ESO expense	0.0	0.0	0.0	0.0	Net PP&E	11,021.1	11,664.2	12,198.5	12,714.7
EBITDA	1,157.8	1,337.8	1,350.3	1,422.9	Net intangibles	1,195.1	1,207.6	1,207.6	1,207.6
Depreciation & amortization	(353.4)	(375.8)	(385.7)	(403.8)	Total investments	0.0	0.0	0.0	0.0
EBIT	804.4	962.0	964.6	1,019.1	Other long-term assets	1,162.6	1,215.1	1,215.1	1,215.1
Net interest income/(expense)	(314.1)	(314.4)	(318.9)	(322.1)	Total assets	14,776.4	14,726.1	15,269.1	15,774.5
Income/(loss) from associates	0.0	0.0	0.0	0.0	Accounts payable	243.7	202.3	202.3	202.3
Others	14.4	14.9	20.1	20.7	Short-term debt	543.9	332.8	332.8	332.8
Pretax profits	504.7	662.5	665.8	717.7	Other current liabilities	701.5	470.8	470.8	470.8
Provision for taxes	(199.3)	(268.4)	(269.6)	(290.7)	Total current liabilities	1,489.1	1,005.9	1,005.9	1,005.9
Minority interest	0.0	0.0	0.0	0.0	Long-term debt	5,361.1	5,328.9	5,502.9	5,652.9
Net income pre-preferred dividends	305.4	394.1	396.1	427.0	Other long-term liabilities	3,685.8	3,956.8	4,073.4	4,209.0
Preferred dividends	13.6	0.0	0.0	0.0	Total long-term liabilities	9,046.9	9,285.7	9,576.3	9,861.8
Net income (pre-exceptionals)	319.1	394.1	396.1	427.0	Total liabilities	10,536.0	10,291.5	10,582.2	10,867.7
Post tax exceptionals	13.6	(17.4)	0.0	0.0	Preferred shares	4.5	1.7	1.7	1.7
Net income (post-exceptionals)	332.7	376.7	396.1	427.0	Total common equity	4,235.8	4,432.9	4,685.2	4,905.1
EPS (basic, pre-exception) (\$)	1.82	2.23	2.24	2.42	Minority interest	0.0	0.0	0.0	0.0
EPS (diluted, pre-exception) (\$)	1.81	2.22	2.23	2.41	Total liabilities & equity	14,776.4	14,726.1	15,269.1	15,774.5
EPS (basic, post-exception) (\$)	1.90	2.13	2.24	2.42	Additional financials	12/11	12/12E	12/13E	12/14E
EPS (diluted, post-exception) (\$)	1.88	2.12	2.23	2.41	Net debt/equity (%)	138.9	127.3	124.0	121.7
Common dividends paid	0.0	0.0	0.0	0.0	Interest cover (X)	2.6	3.1	3.0	3.2
DPS (\$)	0.89	0.98	1.06	1.17	Inventory days	NM	NM	NM	NM
Dividend payout ratio (%)	49.2	43.9	47.2	48.2	Receivable days	32.5	41.0	46.6	44.8
					BVPS (\$)	24.14	25.12	26.55	27.80
Growth & margins (%)	12/11	12/12E	12/13E	12/14E	ROA (%)	2.2	2.7	2.6	2.8
Sales growth	(0.7)	6.0	1.7	3.9	CROCI (%)	7.5	9.7	9.3	9.4
EBITDA growth	5.0	15.5	0.9	5.4	Dupont ROE (%)	7.5	8.9	8.5	8.7
EBIT growth	7.5	19.6	0.3	5.7	Margin (%)	11.9	13.8	13.6	14.2
Net income (pre-exception) growth	19.1	23.5	0.5	7.8	Turnover (X)	0.2	0.2	0.2	0.2
EPS growth	18.7	22.8	0.5	7.8	Leverage (X)	3.5	3.3	3.3	3.2
Gross margin	100.0	100.0	100.0	100.0	Free cash flow per share (\$)	(0.66)	0.09	(0.12)	0.26
EBITDA margin	43.0	46.9	46.5	47.2	Free cash flow yield (%)	(2.3)	0.2	(0.3)	0.7
EBIT margin	29.9	33.7	33.2	33.8					
Cash flow statement (\$ mn)	12/11	12/12E	12/13E	12/14E					
Net income	309.6	376.7	396.1	427.0					
D&A add-back (incl. ESO)	351.8	375.8	385.7	403.8					
Minority interest add-back	0.0	0.0	0.0	0.0					
Net (inc)/dec working capital	(175.1)	(126.8)	(126.0)	(126.0)					
Other operating cash flow	322.0	294.9	242.7	261.6					
Cash flow from operations	808.4	920.6	898.4	966.3					
Capital expenditures	(924.9)	(905.4)	(920.0)	(920.0)					
Acquisitions	(7.2)	(44.3)	0.0	0.0					
Divestitures	10.0	560.1	0.0	0.0					
Others	9.7	(20.8)	0.0	0.0					
Cash flow from investing	(912.4)	(410.4)	(920.0)	(920.0)					
Dividends paid (common & pref)	(157.9)	(213.9)	(143.8)	(207.1)					
Inc/(dec) in debt	228.6	(339.6)	174.0	150.0					
Other financing cash flows	34.4	44.3	0.0	0.0					
Cash flow from financing	105.1	(509.2)	30.2	(57.1)					
Total cash flow	1.1	1.0	8.6	(10.7)					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

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PM Summary: AWK offers strong growth, low risk and attractive valuation

We maintain our Conviction Buy designation on American Water (AWK) after the 3% pullback on Friday, January 25. We view soft 4Q results as non-recurring given the impact of Hurricane Sandy on volumes in the quarter. In our view AWK offers strong EPS growth, a defensive business model, and attractive relative/absolute valuation. We see 15% total return to our unchanged 12-month \$42 price target.

Positives: Above-average EPS growth and a defensive risk profile

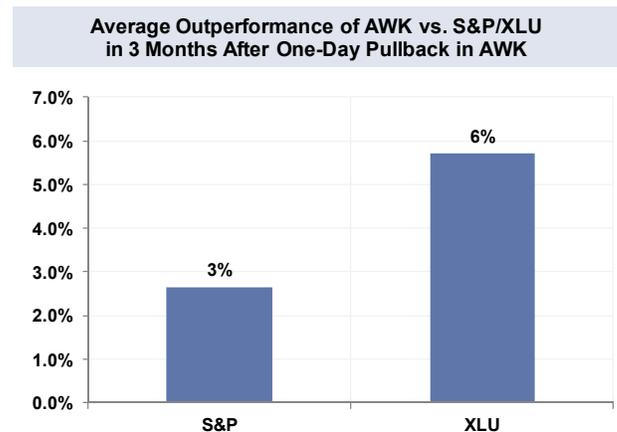
- **We estimate AWK will deliver above-average EPS growth, driven by the need for new US water infrastructure, rate increases and continued cost control.** We forecast strong rate base growth of 7% as AWK spends to replace aging water pipelines, enabling EPS growth above most water, gas and electric utilities. A continued expense control program and recently granted rate increases in New Jersey, Pennsylvania and California should also help to drive solid earnings growth. After stripping out the benefit of drought conditions and the estimated drag of Hurricane Sandy in 2012, we estimate a 9% EPS CAGR through 2014.
- **AWK offers an attractive risk profile.** As reflected by a 0.3 beta versus an electric and gas utility average of 0.6, we view AWK as a defensive investment opportunity. Two drivers of this low risk profile: (1) AWK operates in almost 17 regulatory jurisdictions, which minimizes the risk around any one rate case, and (2) capex primarily relates to smaller pipeline replacement projects, so limited risk exists around large project construction (i.e., a new power plant for an electric utility).
- **We forecast above-average dividend growth.** We estimate AWK will deliver solid dividend growth given a below-average payout and strong EPS growth. As detailed in the body of this report, first quartile dividend growers consistently outperform over the long-term, boding well for AWK shares.

Exhibit 1: We maintain our CL Buy on AWK given strong growth ratings distribution

	Regulated Utilities (Neutral)	Diversified Utilities (Neutral)	IPPs (Attractive)
Buy	AWK*, NU* DUK, GXP EIX, CNL	PPL	NRG* CPN
Neutral	AEP EE, POR, NVE, PCG WR, WEC, XEL	AEE, D NEE, SRE PEG, EXC	
Sell	SCG, SO, ED, PNW	FE	
Not Rated	ETR		

*Conviction Buy List

Exhibit 2: Historically, in the three months after a one-day pullback, AWK has outperformed utilities/S&P price performance three months after a pullback, where AWK underperforms the S&P by 250bp



Source: Goldman Sachs Research, FactSet.

Source: Goldman Sachs Research, FactSet.

Valuation: Our 12-month \$42 price target implies 15% total return

- **We maintain our 12-month, P/E-based price target of \$42, implying 15% total return.** Our price target incorporates (1) a 2014 EPS estimate of \$2.41, and (2) a target P/E multiple of 17.5x. A 17.5x multiple is below the 4-year average FY2 P/E multiple of 18.2x for water utilities. We believe AWK warrants a premium to the S&P and regulated electric/gas utilities due to (1) a lower beta at 0.3, driving a lower cost of equity, (2) strong growth potential given rate base opportunities, and (3) a more diversified footprint than most utilities, with exposure to multiple jurisdictions.
- **AWK currently trades at an attractive P/E multiple discount to peers even after recent outperformance.** On our 2013/2014 EPS estimates, AWK trades at 16.8x/15.5x versus water peers at 19.2x/18.1x, representing an attractive P/E discount of 14%. AWK trades at a 24% P/E discount to WTR on 2014 EPS, despite a slightly better growth trajectory.

Exhibit 3: AWK trades at a discount to water utilities, representing an attractive entry point
 comparable analysis

Water Utilities Comparable Analysis									
	Share Price	P/E Multiples			Price Performance			Div Yield	
		2012	2013	2014	-1m	-3m	-6m		
American Water	AWK	\$37.40	17.6x	16.8x	15.5x	1.6%	2.0%	2.1%	2.7%
American States Water	AWR	\$50.59	19.2x	18.9x	19.5x	6.9%	15.1%	24.6%	2.8%
Aqua America	WTR	\$26.77	24.1x	22.1x	20.4x	6.2%	6.0%	0.2%	2.6%
Artesian Resources	ARTNA	\$22.50	19.4x	19.2x	18.0x	3.9%	-0.5%	3.8%	3.6%
California Water Service	CWT	\$19.35	19.5x	19.0x	16.7x	6.2%	5.0%	3.8%	3.3%
Connecticut Water Service	CTWS	\$29.67	20.0x	20.6x	19.3x	0.1%	-3.3%	-6.1%	3.3%
Middlesex Water Co.	MSEX	\$19.26	14.4x	13.3x	13.4x	-0.9%	0.3%	0.9%	3.9%
SJW Corp.	SJW	\$26.45	25.2x	19.7x	18.4x	0.6%	10.0%	14.9%	2.7%
York Water Co.	YORW	\$18.31	25.4x	23.2x	21.8x	4.4%	5.4%	0.5%	3.0%
<i>Mean</i>	<i>Average</i>		<i>20.5x</i>	<i>19.2x</i>	<i>18.1x</i>	<i>3.2%</i>	<i>4.5%</i>	<i>5.0%</i>	<i>3.1%</i>
<i>Median</i>	<i>Median</i>		<i>19.5x</i>	<i>19.2x</i>	<i>18.4x</i>	<i>3.9%</i>	<i>5.0%</i>	<i>2.1%</i>	<i>3.0%</i>

Source: Goldman Sachs Research, FactSet.

Exhibit 4: We see 15% total return to our 12-month P/E-based price target
 valuation analysis

Actual Target Price Methodology							
P/E Valuation							
2014 EPS	\$2.41						
P/E Multiple	17.5						
Implied Valuation	\$42						
Last Known Price	\$37.40						
Capital Appreciation	12%						
Yield	3%						
Total Return	15%						
12 Month Target Price	\$42/share						
Total Return Analysis							
		P/E Multiple					
		15.5x	16.5x	17.5x	18.5x	19.5x	Avg
EPS	\$ 2.21	-6%	-1%	7%	12%	18%	15%
	\$ 2.31	-1%	4%	10%	18%	23%	High
	\$ 2.41	2%	10%	15%	20%	28%	39%
	\$ 2.51	7%	12%	20%	26%	34%	Low
	\$ 2.61	10%	18%	26%	31%	39%	-6%

Source: Goldman Sachs Research, FactSet.

While we view AWK as a relatively defensive investment, we believe investors need to monitor four key risks.

- Lower-than-expected demand levels, with every 50bp change to our base assumption of -0.8% annual weather-normal volume growth impacting EPS by \$0.05.
- Financing risk, particularly if AWK requires equity issuances contrary to our forecast.
- Disappointing cost management, with every 100bp change to our annual O&M growth expectation impacting EPS by \$0.04.
- Worse-than-expected regulatory outcomes, particularly in major jurisdictions such as California, New Jersey, Illinois, Indiana, Missouri and Pennsylvania.

Taking advantage of pullbacks in AWK yields outperformance

Since mid-2009, AWK underperformed the S&P by 250bp on 13 different trading sessions. Investors who took advantage of these pullbacks consistently outperformed the broader market and the utilities sector in the following three months. We believe Friday's 350bp underperformance versus the S&P/XLU presents another attractive entry point for investors.

Exhibit 5: Taking advantage of pullbacks in AWK yields outperformance

AWK relative performance versus the S&P and XLU 3 months after a one-day pull back

#	Date of Pullback	AWK Relative Performance in Next 3 Months vs.	
		XLU	S&P500
1	9/14/2012	6.6%	7.8%
2	1/3/2012	9.2%	-1.0%
3	11/30/2011	7.1%	-0.3%
4	11/28/2011	7.9%	-3.4%
5	10/12/2011	4.3%	1.6%
6	10/5/2011	2.0%	-1.4%
7	7/1/2010	5.3%	7.1%
8	6/10/2010	5.3%	11.6%
9	3/1/2010	1.6%	0.1%
10	10/14/2009	8.1%	10.1%
11	8/12/2009	4.7%	-1.4%
12	7/15/2009	1.3%	-9.1%
13	6/1/2009	10.9%	12.6%
Average		5.7%	2.7%

Source: Goldman Sachs Research, FactSet.

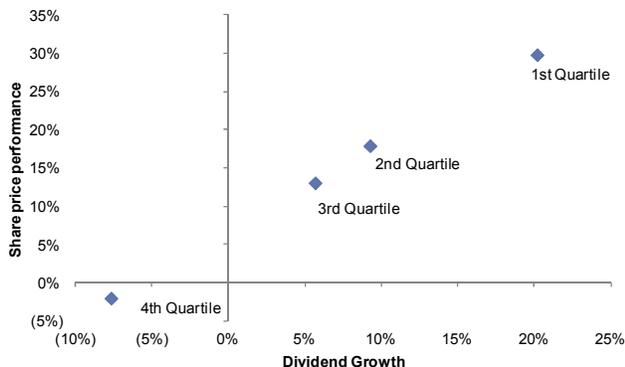
AWK remains more than a trade...it's a long-term investment

We forecast AWK will deliver strong dividend growth, with potential upside to our base case. We estimate 9% dividend growth in 2013/2014 for AWK, in line with EPS growth. However, given only a 48% payout ratio versus other utilities closer to 60%, we see significant upside potential to our base case forecasts if AWK chooses to pursue a payout ratio in line with peers.

Utilities that grow dividends faster than peers typically outperform over the long-term, boding well for AWK. Several of our top picks, including small cap CNL and larger cap NU and EIX, should deliver above average dividend growth, near or above double-digit levels versus peer averages of roughly 5% annually. Historically, as shown in Exhibit 6 below, first quartile dividend growers significantly outperform peers.

Exhibit 6: Top quartile dividend growers among Utilities & LDCs consistently outperformed

Utilities and LDCs, average performance in rolling three-year periods since 2000 vs. respective period dividend growth



Source: Goldman Sachs Research, FactSet.

Exhibit 7: We view Buy-rated CNL, NU, EIX, AWK and GXP as dividend growth winners in 2013

dividend growth, %

		FY 2012	FY 2013	FY 2014	CAGR
1	WEC	\$1.20	\$1.33	\$1.61	16%
2	CNL	\$1.33	\$1.52	\$1.75	15%
3	NEE	\$2.40	\$2.64	\$3.03	12%
4	NVE	\$0.64	\$0.73	\$0.80	12%
5	NU	\$1.32	\$1.44	\$1.58	9%
6	AWK	\$0.98	\$1.06	\$1.17	9%
7	EIX	\$1.30	\$1.35	\$1.55	9%
8	GXP	\$0.86	\$0.94	\$1.00	8%
9	D	\$2.11	\$2.26	\$2.42	7%
10	EE	\$0.97	\$1.03	\$1.07	5%
11	SRE	\$2.40	\$2.52	\$2.65	5%
12	SO	\$1.94	\$2.02	\$2.10	4%
13	PNW	\$2.12	\$2.20	\$2.29	4%
14	POR	\$1.08	\$1.12	\$1.16	4%
15	XEL	\$1.07	\$1.11	\$1.15	3%
16	PCG	\$1.82	\$1.87	\$1.94	3%
17	PEG	\$1.42	\$1.46	\$1.51	3%
18	AEP	\$1.88	\$1.94	\$2.00	3%
19	PPL	\$1.44	\$1.48	\$1.53	3%
20	WR	\$1.32	\$1.36	\$1.40	3%
21	NRG	\$0.36	\$0.37	\$0.38	2%
22	ED	\$2.42	\$2.48	\$2.54	2%
23	DUK	\$3.00	\$3.06	\$3.12	2%
24	SCG	\$1.98	\$1.99	\$2.04	1%
25	AEE	\$1.60	\$1.60	\$1.60	0%
26	ETR	\$3.32	\$3.32	\$3.32	0%
27	FE	\$2.20	\$2.20	\$2.20	0%
28	EXC	\$2.10	\$1.26	\$1.26	-23%

Buy Rated Dividend Growth Winners

Note: NU is on the Americas Conviction List

Source: Goldman Sachs Research, FactSet.

Disclosure Appendix

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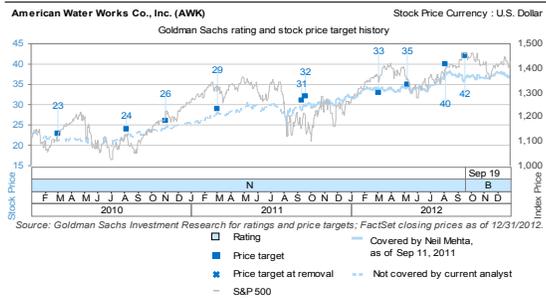
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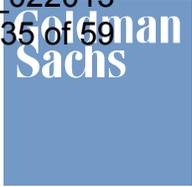
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January 25, 2013

COMMENT

American Water Works Co., Inc. (AWK) \$38.59

Equity Research

First Take: 2013 guidance implies strong EPS growth; CL Buy

News

American Water (AWK, Conviction Buy) announced 2013 guidance of \$2.15-\$2.25, near GS/consensus of \$2.23/\$2.22. The company indicated that FY2012 results, when reported on February 26, will come in on the low end of its 2012 ongoing guidance of \$2.12-\$2.22, largely due to the one-time impact of Hurricane Sandy on volumes.

Analysis

- **AWK set to continue to deliver best-in-class EPS growth.** After normalizing for an estimated \$0.13-\$0.15 EPS benefit from drought conditions in 2012 and an estimated \$0.05 EPS drag from Hurricane Sandy, normalized EPS in 2012 for AWK appears closer to \$2.03. The midpoint of AWK's 2013 guidance implies 9% EPS growth versus normalized 2012 EPS. We believe AWK will ultimately execute on the higher end of its 2013 guidance, given a strong track record of earnings execution, solid rate base growth from new water infrastructure investment and limited equity financing needs.
- **Key focus items for the conference call in late February:** (1) timing of general rate cases and new infrastructure trackers, which should drive long-term earnings growth, (2) the potential for dividend growth, given above-average EPS growth and a below-average payout ratio; and (3) an update on the ongoing CFO transition, given the recent retirement announcement of Ellen Wolf.

Implications

We reiterate our Conviction Buy on AWK and our price target remains unchanged. As detailed in recent notes, "The AWK Debate" and "Have To Own (H2O)," we view AWK as a top idea given strong earnings growth, a low risk profile, improving cash flow and attractive valuation.

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Americas Conviction Buy List

Coverage View: Neutral

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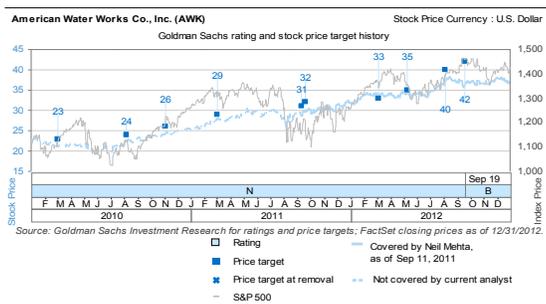
Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global coverage universe

	Rating Distribution			Investment Banking Relationships		
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COMPANY UPDATE/ ESTIMATE CHANGE

Key Metrics

AWK - NYSE - as of	1/24/13	\$38.59
Price Target		\$45.00
52-Week Range	\$32.21 -	\$39.38
Shares Outstanding (mm)		176.8
Market Cap. (\$mm)		\$6,821.1
1-Mo. Average Daily Volume		892,651
Institutional Ownership		83.6%
Debt/Total Capital	Q3'12	53.7%
ROE	TTM	8.5%
Book Value / Share	Q3'12	\$25.02
Price / Book Value		1.5x
Dividend Yield		2.6%
LTM EBITDA Margin		-

EPS (Cont'd Ops) FY 12/31

	2011A	Prior 2012E	Current 2012E	Prior 2013E	Current 2013E
1Q	\$0.23	--	\$0.28	A --	--
2Q	\$0.42	--	\$0.66	A --	--
3Q	\$0.73	--	\$0.87	A --	--
4Q	\$0.34	\$0.44	\$0.33	--	--
Year	\$1.73	\$2.25	\$2.13	\$2.28	\$2.24
P/E	22.3x		18.1x		17.2x

Revenue (\$mm)

	2011A	Prior 2012E	Current 2012E	Prior 2013E	Current 2013E
1Q	\$611	--	\$619	A --	--
2Q	\$674	--	\$746	A --	--
3Q	\$766	--	\$859	A --	--
4Q	\$640	\$701	\$672	--	--
Year	\$2,666	\$2,897	\$2,868	\$2,962	\$2,942

Company Description: *Founded in 1886, American Water is the largest investor-owned U.S. water and wastewater utility company. With headquarters in Voorhees, NJ, the company employs more than 7,000 professionals who provide drinking water, wastewater and other related services to approximately 15 million people in more than 30 states and parts of Canada.*

Water Utilities

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January 25, 2013

American Water Works Co.

AWK -- NYSE -- Buy-2

2013 Guidance; Sandy to Impact Q4'12 but No Damage to Long-term Thesis; Adjusting Estimates.

Investment Highlights

- Late on 1/24/13, American Water Works issued 2013 EPS guidance in a range of \$2.15-\$2.25. AWK also expects full year 2012 EPS from continuing operations to come in at the low end of the company's \$2.12-\$2.22 guidance range.
- Incorporated into existing '12 guidance (raised from \$1.90-\$2.00 on 8/2/12) is a projected \$0.13-\$0.16 of weather upside due to a dry summer. Mentioned in yesterday's release, this is consistent with AWK's previously disclosed drought-impact projections.
- Volume declines attributable to Superstorm Sandy, higher than expected costs from SAP implementation and select discretionary maintenance expenditures compelled management to guide toward the lower end of its 2012 EPS range.
- American is scheduled to release Q4 and full year 2012 results on February 27, 2013. We will issue initial 2014 estimates and release quarterly 2013 numbers at that time.
- We are lowering our Q4'12 and full year 2012 EPS estimate by ~\$0.11-\$0.12 to \$0.33 and \$2.13, respectively; we are trimming our 2013 EPS estimate by \$0.04 to \$2.24. **(see additional discussion)**
- We are reiterating our Buy rating and 12-month \$45 price target, which we derive by applying a 20x multiple to our 2013 EPS estimate. We believe this is appropriate given AWK's sustainable long-term earnings and dividend growth prospects.

Note Important Disclosures on Pages 6-7

Note Analyst Certifications on Page 6

ADDITIONAL DISCUSSION—GUIDANCE

We are somewhat surprised to see management cite Sandy as a material drag in the fourth quarter given our impression following the Q3'12 conference call; however, we note that AWK's initial comments took place less than two weeks after the storm. While damage to American's systems and service outages were minimal, decreased usage was more impactful than expected. Given AWK's solid recent history regarding expenses, the mention of SAP implementation costing more than expected was surprising as well, though we expect management has adjusted any IT related spending issues as-needed in giving 2013 guidance.

On a more positive note, we are pleased with 2013 guidance of \$2.15-\$2.25; current consensus falls within this range, and we believe the top end of the range is attainable. The past ~12 months have been noisy, with the drought impacting results and Superstorm Sandy causing both concerns mid-year and ultimately influencing a downward revision, but we note that the mid-point of 2013 guidance is ~13% above the mid-point of initial 2012 guidance (\$1.90-\$2.00), and ~10% above our expected 'weather-adjusted' 2012 EPS of ~\$2.00. In our calculation, '13 guidance implies EPS growth at or slightly above management's long-term target range of 7-10%, which we believe supports our target multiple.

ADDITIONAL DISCUSSION—Q4 2012 & FULL YEAR 2013 ESTIMATES

Our Q4'12 and full year 2012 EPS targets move substantially lower in agreement with management's emphasis on the lower end of its \$2.12-\$2.22 guidance range. We have raised our projections for maintenance expense, while also trimming our revenue target by ~\$30MM in anticipation of Sandy-related usage declines. Looking to 2013, we are lowering our EPS estimate by \$0.04, but are making no major revisions to any individual line items or any changes to our fundamental outlook.

ADDITIONAL DISCUSSION—FINAL THOUGHTS

We believe Q4'12 will depict a rare misstep for the company, but the convergence of several unique (negative) items in one quarter is most appropriately viewed as a buying opportunity, in our view. The stock made an all-time closing high of yesterday of \$38.59, and we expect the Q4 news will overshadow good 2013 guidance over the near-term. We recommend that investors hesitant to accumulate shares into strength capitalize on any pending weakness in AWK to initiate and/or expand positions.

We also remind investors that a concern we outlined in our last note was the question of how the stock would react to what we were projecting as flattish yr/yr earnings growth in 2013 (due to positive weather in '12). A possible silver lining to a weak Q4'12 number is that it removes this scenario from our base-case; absent extraordinary weather, we believe AWK will grow EPS ~5% in 2013. Though Q2 and Q3 may still hold difficult comps, we now believe AWK should be able to sidestep the negative optics of stagnant yr/yr growth, and that Street estimates across the board should project full year earnings growth in '13. Additionally, we continue to believe long-term growth rates of 7-10% are achievable and should be a major focal point for investors.

CONSIDERATIONS AND RISKS

We view all companies in the Water Utilities industry as being subject to significant regulatory and political risks. Utility operations are heavily regulated; negative rate-making climates and/or new environmental restrictions may affect the company's ability to earn a sufficient return on invested capital. Weather, natural disaster, and availability of water supplies could negatively impact sources of water, demand for water services, and a utility's ability to supply water to customers. Risks associated with the collection, treatment, and disposal of wastewater could also impose significant costs.

Significant capital expenditures are required to maintain infrastructure and expand the rate base. Should the company suffer from the lack of ability to secure funding, or if delays are incurred, operating results could be impacted. Water assets can be subject to condemnation through eminent domain. The company's non-regulated businesses provide performance guarantees and have long-term contracts. The company is subject to all other risks that result from operating as a publicly traded company.

Our Suitability rating is 2 on a 1-to-4 scale (1 = most conservative, 4 = most aggressive).

Additional information is available upon request.

American Water Works Co.

American Water Works Co.

Income Statements (000's)	FY'09	FY'10	Q1'11	Q2'11	Q3'11	Q4'11	FY'11	Q1'12	Q2'12	Q3'12	Q4'12E	FY'12E	FY'13E	
Operating revenues	\$2,440,703	\$2,555,035	\$596,715	\$668,873	\$760,869	\$639,779	\$2,666,236	\$618,554	\$745,607	\$831,815	\$671,620	\$2,867,600	\$2,941,800	
Operating expenses														
Operation and maintenance	1,283,417	1,290,941	310,821	327,157	340,339	323,476	1,301,794	310,004	327,577	355,126	348,570	1,341,300	1,367,000	
Depreciation and amortization	335,178	330,264	86,878	87,342	88,323	89,278	351,821	92,104	92,329	96,219	96,300	377,000	386,700	
General taxes	199,262	205,597	55,498	52,951	52,433	49,596	210,478	57,121	55,282	52,861	52,390	217,700	232,400	
(Gain) on sale of assets	(763)	111	268	28	(1,635)	346	(993)	(413)	(213)	(31)	(200)	(860)	(1,700)	
Impairment charge	450,000													
Operating income (loss)	173,609	728,122	143,250	201,395	281,409	177,083	803,136	159,738	270,632	327,640	174,560	932,460	957,400	
%	7.1%	28.5%	24.0%	30.1%	37.0%	27.7%	30.1%	25.8%	36.3%	39.4%	26.0%	32.5%	32.5%	
Interest (Expense)/Income	(296,545)	(313,765)	(76,191)	(78,469)	(78,562)	(79,193)	(312,415)	(79,654)	(79,730)	(76,616)	(76,616)	(312,616)	(312,000)	
Other (Expense)/Income	11,271	15,067	1,585	3,158	4,043	4,172	12,959	4,561	6,363	4,000	4,300	19,224	21,100	
Inc (loss) Cont'd Ops Before Tax	(111,665)	429,424	68,644	126,084	206,890	102,062	503,680	84,645	197,265	255,024	102,244	639,068	666,500	
Provision for income taxes	121,418	174,352	27,945	51,267	78,395	41,144	198,751	35,393	80,602	100,913	43,100	260,008	266,432	
%	-108.7%	40.6%	40.7%	40.7%	37.9%	40.3%	39.5%	41.8%	40.9%	39.6%	42.2%	40.7%	40.0%	
Income (loss) from continuing ops	(233,083)	255,072	40,699	74,817	128,495	60,918	304,929	49,252	116,663	154,111	59,144	379,060	400,068	
Inc (loss) from discontinued ops, net of tax		12,755	(14,466)	6,293	8,927	3,930	4,684	(7,498)	(9,637)	(299)		(17,434)		
Net income (loss)	(\$233,083)	\$267,827	\$26,233	\$81,110	\$137,422	\$64,848	\$309,613	\$41,754	\$107,026	\$153,812	\$59,144	\$361,626	\$400,068	
Diluted avg share count	168,164	175,124	176,048	176,419	176,593	176,838	176,531	177,028	177,491	177,841	178,200	177,702	178,827	
GAAP EPS	\$ (1.39)	\$ 1.53	\$ 0.15	\$ 0.46	\$ 0.78	\$ 0.37	\$ 1.76	\$ 0.24	\$ 0.60	\$ 0.86				
Inc (loss) frm disc'd ops, net/tax		\$ 0.07	\$ (0.08)	\$ 0.04	\$ 0.05	\$ 0.02	\$ 0.03	\$ (0.04)	\$ (0.05)	\$ (0.00)				
EPS from Cont'd Ops	\$ 1.25	\$ 1.46	\$ 0.23	\$ 0.42	\$ 0.73	\$ 0.34	\$ 1.73	\$ 0.28	\$ 0.66	\$ 0.87	\$ 0.33	\$ 2.13	\$ 2.24	
Cash dividend per share of common stock	\$ 0.820	\$ 0.860	\$ 0.220	\$ 0.220	\$ 0.230	\$ 0.230	\$ 0.900	\$ 0.230	\$ 0.230	\$ 0.250	\$ 0.250	\$ 0.960	\$ 1.050	
Rate of Change Analysis:							52%							
Revenues	4.4%	4.7%	5.3%	5.3%	1.6%	2.2%	4.4%	3.7%	11.5%	9.3%	5.0%	7.6%	2.6%	
Operating income	10.7%	16.8%	14.9%	7.0%	5.6%	18.5%	10.3%	11.5%	34.4%	16.4%	-1.4%	16.1%	2.7%	
EPS--Cont'd Ops	13.6%	16.5%	36.2%	9.0%	7.0%	57.7%	18.6%	20.3%	55.0%	19.1%	-3.7%	23.5%	4.9%	
EBITDA	14.9%	10.5%	11.5%	6.9%	4.9%	14.4%	9.0%	9.1%	25.6%	15.1%	1.5%	13.4%	2.6%	
O&M Expense	-1.6%	0.6%	1.7%	4.2%	-1.7%	-5.5%	0.8%	-0.3%	0.1%	4.3%	7.8%	3.0%	1.9%	
Margin Analysis:														
O&M	52.6%	50.5%	52.1%	48.9%	44.7%	50.6%	48.8%	50.1%	43.9%	42.7%	51.9%	46.8%	46.5%	
D&A	13.7%	12.9%	14.6%	13.1%	11.6%	14.0%	13.2%	14.9%	12.4%	11.6%	14.3%	13.1%	13.1%	
General taxes	8.2%	8.0%	9.3%	7.9%	6.9%	7.8%	7.9%	9.2%	7.4%	6.4%	7.8%	7.6%	7.9%	
Operating income	25.6%	28.5%	24.0%	30.1%	37.0%	27.7%	30.1%	25.8%	36.3%	39.4%	26.0%	32.5%	32.5%	
Net income	8.6%	10.5%	4.4%	12.1%	18.1%	10.1%	12.6%	6.8%	14.4%	18.5%	8.8%	12.6%	13.6%	
Tax rate	-108.7%	40.6%	40.7%	40.7%	37.9%	40.3%	39.5%	41.8%	40.9%	39.6%	42.2%	40.7%	40.0%	
tax rate 39.5% ex impnt impact // EPS adjusted for writedown								*Completed sale of AZ & NM assets	*Rec'd final approval for NY for OH asset swap w/ WTR			*Superstorm Sandy **\$7MM (~\$0.02/sh) charity donation not in estimates	*EPS Guidance \$2.12-\$2.22-- emphasis on low end	*EPS Guidance \$2.15-\$2.25

Source: Company reports and Hilliard Lyons estimates

American Water Works Co.

American Water Works Co.

Balance Sheet Analysis	FY'09	FY'10	Q1'11	Q2'11	Q3'11	Q4'11	FY'11	Q1'12	Q2'12	Q3'12	Q4'12E	FY'12E	FY'13E
Cash	\$22,256	\$13,112	\$13,528	\$13,466	\$15,621	\$14,207	\$14,207	\$9,502	\$12,919	\$18,531	\$15,368	\$15,368	(\$330)
A/R	149,417	152,878	138,317	165,686	184,235	150,720	150,720	141,415	187,738	219,157	177,310	177,310	190,690
Unbilled Utility Rev	130,262	140,933	128,526	145,500	142,302	134,938	134,938	127,068	161,851	151,124	158,500	158,500	170,460
Net Oth Receivables	75,086	74,309	60,251	73,125	62,934	60,413	60,413	63,235	63,195	61,462	80,590	80,590	86,680
Other Current Assets	122,106	153,075	964,917	1,095,437	1,074,369	1,051,588	1,051,588	110,384	180,671	192,251	188,050	188,050	156,020
Total current assets	499,127	534,307	1,305,539	1,493,214	1,479,461	1,397,659	1,397,659	451,604	606,374	642,525	619,818	619,818	603,520
Net PP&E	10,677,393	11,201,617	10,555,698	10,599,942	10,787,844	11,021,098	11,021,098	11,139,499	11,387,311	11,534,327	11,683,030	11,683,030	12,246,380
Regulatory assets	952,020	1,016,007	991,797	989,932	997,511	1,079,661	1,079,661	1,090,003	1,139,223	1,134,260	1,140,000	1,140,000	1,180,000
Goodwill	1,250,381	1,250,692	1,204,227	1,195,510	1,195,510	1,195,069	1,195,069	1,195,069	1,207,572	1,207,572	1,207,570	1,207,570	1,207,570
Other LT Assets	73,730	77,150	71,546	68,618	78,407	82,904	82,904	211,564	72,281	80,851	241,780	241,780	144,460
Total Assets	\$13,452,651	\$14,079,773	\$14,128,807	\$14,347,216	\$14,538,733	\$14,776,391	\$14,776,391	\$14,087,739	\$14,412,761	\$14,599,535	\$14,892,198	\$14,892,198	\$15,381,930
Short-term debt	119,497	229,699	323,484	449,940	408,998	515,050	515,050	147,212	361,972	297,859	197,860	197,860	332,860
Current portion of LTD	54,068	44,760	12,168	8,439	8,949	28,858	28,858	30,126	120,289	34,964	34,960	34,960	40,000
Accounts payable	138,609	199,240	132,725	159,024	190,556	243,709	243,709	162,414	183,908	202,283	185,370	185,370	199,350
Other	295,218	300,807	666,503	710,243	771,511	701,488	701,488	403,937	351,795	470,768	351,929	351,929	231,140
Total current liab	607,392	774,506	1,134,880	1,327,646	1,380,014	1,489,105	1,489,105	743,689	1,017,964	1,005,874	770,119	770,119	803,350
LTD	5,308,733	5,401,653	5,362,325	5,362,604	5,361,531	5,339,947	5,339,947	5,350,514	5,203,133	5,184,546	5,384,550	5,384,550	5,538,700
Common Shareholders' equity	4,000,859	4,127,725	4,146,107	4,157,920	4,258,643	4,235,837	4,235,837	4,250,889	4,325,975	4,449,340	4,582,230	4,582,230	4,706,704
Total liab & SE	\$13,452,651	\$14,079,773	\$14,128,807	\$14,347,216	\$14,538,733	\$14,776,391	\$14,776,391	\$14,087,739	\$14,412,761	\$14,599,535	\$14,892,198	\$14,892,198	\$15,381,930
Cash Flow Analysis	FY'09	FY'10	Q1'11	Q2'11	Q3'11	Q4'11	FY'11	Q1'12	Q2'12	Q3'12	Q4'12E	FY'12E	FY'13E
Net income	(\$233,083)	\$267,827	\$26,233	\$81,110	\$137,422	\$64,848	\$309,613	\$41,754	\$107,026	\$153,812	\$59,144	\$361,736	\$400,000
D&A	335,178	330,264	88,019	86,584	88,424	89,278	351,821	92,104	92,329	96,219	96,300	376,952	386,700
Impairment charge	450,000	-	-	-	-	-	-	-	-	-	-	-	-
(Inc.) dec. in working cap.	(84,839)	21,896	(471,635)	(117,698)	108,708	63,518	417,107	562,504	(182,001)	106,809	(24,057)	463,255	1,250
Other operating activities	128,900	130,560	518,909	50,874	(20,906)	14,669	563,546	(548,263)	151,418	61,303	50,000	(285,542)	60,000
Operating cash flow	596,156	750,547	161,526	100,870	313,648	232,313	808,357	148,099	168,772	418,143	181,387	916,401	847,950
Cap Ex	(785,265)	(765,636)	(176,411)	(215,381)	(230,148)	(302,918)	(924,858)	(233,366)	(242,934)	(204,057)	(245,000)	(925,357)	(950,000)
Acquisitions	(18,144)	(1,642)	(1,445)	(3,324)	(1,612)	(839)	(7,220)	(104)	(44,189)	(40)	(2,000)	(46,333)	(12,000)
Proceeds from Sale of Assets	-	-	-	-	-	-	-	461,375	98,635	85	-	560,100	-
Other investing activities	99,798	20,535	11,668	9,468	1,184	(2,639)	19,681	1,700	(11,448)	(11,013)	2,000	(18,800)	-
Investing cash flow	(703,611)	(746,743)	(166,188)	(209,237)	(230,576)	(306,396)	(912,397)	229,605	(199,936)	(215,025)	(245,000)	(430,390)	(962,000)
Adv & contributions for cnstrctn	21,211	7,042	5,111	6,082	4,574	6,531	22,298	7,820	8,900	5,342	-	22,062	-
Long-term debt proceeds	542,926	268,559	298	11,977	75	160	12,510	14,372	358	-	300,000	314,700	150,000
Long-term debt (repaid)	(178,131)	(272,700)	(62,637)	(1,571)	(4,481)	(1,356)	(70,045)	(6,229)	(151,959)	(25,002)	(100,000)	(283,190)	(35,000)
ST Debt Drawn (repaid)	(352,005)	93,029	135,217	112,729	(36,403)	91,481	303,024	(347,951)	228,874	(64,113)	(100,000)	(283,000)	135,000
Stock issued	244,390	6,711	6,694	2,158	1,511	3,503	13,866	9,634	2,960	9,468	5,000	27,062	36,000
Dividends	(137,331)	(150,301)	(38,525)	(38,580)	(40,358)	(40,392)	(157,855)	(40,414)	(40,529)	(44,080)	(44,550)	(170,000)	(188,000)
Other financing activities	(20,891)	10,326	(41,080)	15,510	(5,835)	12,742	(18,663)	(19,641)	(14,023)	(79,121)	-	(112,785)	-
Financing cash flow	120,169	(37,334)	5,078	108,305	(80,917)	72,669	105,135	(382,409)	34,581	(197,506)	60,450	(485,151)	98,000
Net cash flow	12,714	(33,530)	416	(62)	2,155	(1,414)	1,095	(4,705)	3,417	5,612	(3,163)	860	(16,050)
Op + Inv CF + Div	(244,786)	(146,497)	(43,187)	(146,947)	42,714	(114,475)	(261,895)	337,290	(71,693)	159,038	(108,163)	316,011	(302,050)
FCF/share	\$ (1.48)	\$ (0.70)	\$ (0.25)	\$ (0.83)	\$ 0.24	\$ (0.65)	\$ (1.48)	\$ 1.91	\$ (0.40)	\$ 0.89	\$ (0.61)	\$ 1.79	\$ (1.69)
EBITDA	958,024	1,058,497	230,396	288,765	368,097	266,707	1,153,964	251,429	362,748	423,828	270,660	1,308,600	1,342,400
EBITDA margin	39.3%	41.4%	38.6%	43.2%	48.4%	41.7%	43.3%	40.6%	48.7%	51.0%	40.3%	45.6%	45.6%
EBITDA/share	\$5.70	\$6.04	\$1.31	\$1.64	\$2.08	\$1.51	\$6.54	\$1.42	\$2.04	\$2.38	\$1.52	\$7.36	\$7.51
EV/EBITDA	9.5x	9.3x	11.2x	9.1x	7.3x	10.0x	9.2x	11.3x	7.8x	7.1x	11.3x	9.3x	9.3x
Selected Financial Statistics	FY'09	FY'10	Q1'11	Q2'11	Q3'11	Q4'11	FY'11	Q1'12	Q2'12	Q3'12	Q4'12E	FY'12E	FY'13E
Book Value	\$ 23.79	\$ 23.57	\$ 23.55	\$ 23.57	\$ 24.12	\$ 23.95	\$ 23.99	\$ 24.01	\$ 24.37	\$ 25.02	\$ 25.71	\$ 25.79	\$ 26.32
Tangible BV	\$ 16.36	\$ 16.43	\$ 16.71	\$ 16.79	\$ 17.35	\$ 17.20	\$ 17.23	\$ 17.26	\$ 17.57	\$ 18.23	\$ 18.94	\$ 18.99	\$ 19.57
Price / Book	0.9x	1.1x	1.2x	1.2x	1.3x	1.3x	1.3x	1.4x	1.4x	1.5x	1.5x	1.5x	1.5x
LT debt / Total Capital	56.9%	56.5%	56.2%	56.2%	55.6%	55.6%	55.6%	55.6%	54.5%	53.7%	53.9%	53.9%	54.0%
Net Indebtedness / Total Capital	57.7%	57.8%	57.8%	58.3%	57.5%	58.1%	58.1%	56.5%	56.7%	55.3%	55.0%	55.0%	55.7%
ROE (TTM)	5.2%	6.6%	6.5%	6.6%	6.8%	7.4%	8.0%	7.7%	8.2%	8.5%	8.2%	8.2%	8.6%

Source: Company reports and Hilliard Lyons estimates

Analyst Certification

I, Joel K. Havard, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject company(ies) and its (their) securities. I also certify that I have not been, am not, and will not be receiving direct or indirect compensation in exchange for expressing the specific recommendation(s) in this report.

I, Spencer E. Joyce, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject company(ies) and its (their) securities. I also certify that I have not been, am not, and will not be receiving direct or indirect compensation in exchange for expressing the specific recommendation(s) in this report.

Important Disclosures

Hilliard Lyons' analysts receive bonus compensation based on Hilliard Lyons' profitability. They do not receive direct payments from investment banking activity.

Suitability Ratings

- 1** - A large cap, core holding with a solid history
- 2** - A historically secure company which could be cyclical, has a shorter history than a "1" or is subject to event driven setbacks
- 3** - An above average risk/reward ratio could be due to small size, lack of product diversity, sporadic earnings or high leverage
- 4** - Speculative, due to small size, inconsistent profitability, erratic revenues, volatility, low trading volume or a narrow customer or product base

Investment Ratings

Buy - We believe the stock has significant total return potential in the coming 12 months.

Long-term Buy - We believe the stock is an above average holding in its sector, and expect solid returns to be realized over a longer time frame than our Buy rated issues.

Neutral - We believe the stock is an average holding in its sector, is currently fully valued, and may be used as a source of funds if better opportunities arise.

Underperform - We believe the stock is vulnerable to a price setback in the next 12 months.



Rating	Hilliard Lyons Recommended Issues		Investment Banking Provided in Past 12 Mo.	
	# of Stocks Covered	% of Stocks Covered	Banking	No Banking
Buy	64	47%	9%	91%
Hold/Neutral	65	48%	8%	92%
Sell	4	3%	0%	100%
Restricted	3	2%	100%	0%

As of 7 January 2013

Other Disclosures

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American Water Works Company, Inc. (AWK)

Initiates 2013 Guidance in Line with Expectations; Maintain Rating

BAIRD

Our 2013 estimate at midpoint of AWK's initial guidance range; maintain Outperform rating. Disciplined infrastructure investment and continued operating expense discipline, coupled with growth from Market-Based Operations is expected to drive annual EPS growth of 7-10%. We are encouraged by improved earned ROEs, driven by better operational efficiency, and improved cash flow from operations, which should mitigate the need for additional equity for at least the next several years.

- **Management initiates 2013 EPS guidance of \$2.15 to \$2.25 per share.** Our estimate of \$2.20 and the consensus estimate of \$2.21 are within management's range.
- **2013/2014 estimates unchanged.** We maintain our 2013 and 2014 estimates of \$2.20 and \$2.35, respectively.
 - Our \$2.20 estimate assumes ~10% EPS growth, excluding the \$0.13-\$0.16 benefit the company enjoyed during the summer of 2012 driven by higher water sales volumes driven by warmer weather.
 - Upside to our estimate could stem from improved customer consumption, additional cost synergies, or an increased contribution from Market-Based operations.
- **AWK now expects 2012 to be at the low end of the previously announced \$2.12-\$2.22 range.** We lower our estimate to \$2.14 from \$2.20 expecting additional expenses in 4Q12 related to accelerated infrastructure expenses, Hurricane Sandy-related volume declines, and higher costs associated with SAP implementation to pressure margin.
- **CFO departure unlikely to have material impact on AWK's strategy.** On January 14, CFO Ellen Wolf announced that she would be retiring during the first half of 2013, once a successor has been appointed and an appropriate transition has transpired. We expect the company to make an internal promotion and we would expect a smooth transition.
- **Maintain Outperform rating and \$41 price target, ~17.5x our 2014 EPS estimate** due to improving earned ROEs via rate relief, cost containment efforts, and growth of Market-Based operations. The 17.5x multiple is a slight discount to its peers when fully valued (currently trading at 17.6x 2014 EPS) .

AWK is the largest US investor-owned regulated water utility serving about 3.2 million water & 150,000 wastewater customers in 20 states.

ESTIMATE CHANGE

1-Year Price Chart



Stock Data

Rating:	Outperform
Suitability:	Lower Risk
Price Target:	\$41
Price (1/24/13):	\$38.59
Market Cap (mil):	\$6,861
Shares Out (mil):	177.8
Average Daily Vol (mil):	0.83
Dividend Yield:	2.6%

Estimates

FY Dec	2011A	2012E	2013E
Q1	0.24 A	0.28 A	
Q2	0.46 A	0.66 A	
Q3	0.76 A	0.87 A	
Q4	0.36 A	0.34 E	
Fiscal EPS	1.76 A	2.14 E	2.20 E
Previous (FY)		2.20 E	
Fiscal P/E	21.9x	18.0x	17.5x

Chart/Table Sources: Bloomberg and Baird Data

**Please refer to Appendix
- Important Disclosures
and Analyst Certification**

Investment Thesis

YTD, AWK has made substantial progress in improving earned returns through rate relief and cost containment efforts, supporting our Outperform rating. Cost controls and constructive regulatory outcomes have improved operational efficiency well ahead of our expectations. As a result, we believe higher earned ROEs support increased EPS expectations and improved financial metrics, including cash flow from operations, which should mitigate the need for additional equity for at least the next several years. Key investment attributes include:

- **Capital investment and margin expansion to drive 7-10 EPS CAGR.** Over the next five years, AWK expects to grow EPS 7-10% annually, driven largely by the company's \$800 million to \$1 billion/annual capital investment program and subsequent regulatory filing to earn a return on these investments.
- **Refocused efforts on regulatory policy changes.** AWK maintains constructive regulatory relationships with the majority of its jurisdictions. AWK plans to take a more active role in shaping and promoting the adoption of enhanced regulatory policies. In particular, management is focused on increasing its use of infrastructure surcharge mechanisms and minimizing the impact of declining usage.
 - For more information on the importance of constructive regulation and our assessment of state commissions, please see our Regulatory Toolkit.
- **Portfolio optimization.** Management aims for a more targeted approach to its regulated operations, with emphasis placed on regulatory environments, rate base growth opportunities, and optimized cost structure. AWK completed several asset transactions over the last nine months, and has exited Arizona, New Mexico, Texas, and Ohio, and has increased its presence in Missouri and New York. AWK continues to evaluate other operating jurisdictions based on regulatory climate, strategic relevance, capital needs, and potential to achieve critical mass.
- **Non-regulated strategy could enhance long-term EPS growth CAGR.** AWK sees the Homeowners Service business, as an untapped market with attractive returns and a steady revenue stream. A recent win to expand service into NYC could provide upside to our estimates. The company is committed to the military base business, where it has had multiple contract wins over the past two years and sizable market opportunity still exists. AWK has chosen to make investments in the Marcellus Shale region through its regulated operations, minimizing the company's exposure and risk to drilling volumes. During 2012, AWK reached agreements with XTO Energy to construct two small water pipelines (~1 mile/each) and with Rex Energy to construct a 3.3-mile potable water pipeline extension that will support shale gas development.
- **Valuation:** Our \$41 price target assumes ~17.5x our 2014 EPS estimate due to improving earned ROEs via rate relief, cost containment efforts, and growth of the Market-Based Operations. The 17.5x multiple is a slight discount to its peers when fully valued (currently trading at 18.1x 2014 EPS).

Risks & Caveats

- **Regulation.** Regulated operations are subject to local, state and federal regulations. Changes in the regulatory environment can affect AWK's near-term and long-term performance.
- **Decreased water consumption.** A large majority of AWK's businesses are sensitive to fluctuations in water consumption, which can occur due to increased consumer conservation efforts, state-imposed conservation efforts or unfavorable weather (either particularly wet or dry).
- **Financial market volatility could materially impact AWK's financial results** given external financing needs will be required to fund AWK's capital requirements. The availability and cost of funds depends on securities market conditions, interest rate levels and general economic

conditions generally, as well as the debt ratings and future income and cash flow.

- **Balance sheet risk.** Significant goodwill write-downs occurred in 2008/2009 related to RWE's divestiture of AWK. Further write-downs are possible with unfavorable market conditions.
- **Acquisition risk.** AWK is an active participator in the consolidation of the water industry. Acquisitions carry risks related to personnel, expected-versus-actual growth and a myriad of unforeseen hurdles, all of which can negatively affect earnings.
- **Product quality.** Unique among other regulated utility sectors, water utilities provide a product that is ingested. Despite robust mandated service quality standards that lower risk, a quality failure could materially impact the earnings and stock performance of AWK.
- **Water supply.** Though the vast majority of its operations are in service territories with abundant supply, certain jurisdictions (notably CA) face water supply issues. Inability to adjust to changing water supply patterns could adversely impact operations.
- **Valuation premium.** Water utilities have traded at a premium to broader utilities (~20x vs 12-15x) due to consistent earnings growth, industry consolidation, scarcity factor, and strong investment trends. Though AWK has historically traded at a discount to the sector, inability by the sector to maintain a premium valuation could materially impact AWK's future stock performance.

Company Description

AWK is the largest investor-owned regulated water and wastewater utility in North America. Its regulated utility serves about 3.2 million water and 150,000 wastewater customers (over 15 million people combined) in 20 states. Additionally, AWK has a non-regulated segment (~10% of total revenue). The company was previously owned by RWE, a European utility, from 2003 until AWK's IPO in April 2008; RWE's stake was fully divested in November 2009.

American Water Works (AWK - NYSE)



Income Statement (\$millions)

Robert W. Baird & Co., Inc.

	2006	2007	2008	2009	2010	1Q11	2Q11	3Q11	4Q11	2011	1Q12	2Q12	3Q12	4Q12E	2012E	2013E	2014E
Operating Revenue	2,093	2,214.2	2,336.9	2,440.7	2,710.7	610.3	674.2	766.5	611.1	2,666.2	618.6	745.6	831.8	632.7	2,828.7	2,927.4	3,067.6
Growth (%)	-2%	6%	6%	4%	11.1%	3.8%	0.4%	-2.6%	-2.3%	-1.6%	1.4%	10.6%	8.5%	3.5%	6.1%	3.5%	4.8%
Expenses																	
Market Based Operations O&M				287.8	293.8	55.6	72.7	57.6	23.3	209.2	52.1	71.1	55.4	24.8	203.3	203.3	206.2
O&M	1,175	1,246.5	1,303.8	1,036.6	1,095.4	265.0	259.6	288.1	274.9	1,087.6	257.9	256.5	299.8	292.8	1,106.9	1,106.9	1,122.4
Total O&M	1,174.5	1,246.5	1,303.8	1,324.4	1,389.2	320.6	332.3	345.8	298.2	1,296.8	310.0	327.6	355.1	317.5	1,310.2	1,310.2	1,328.6
Growth (%)	-2%	6%	5%	-20%	5.7%	-19.8%	-24.7%	-1.7%	-19.7%	-0.7%	-2.7%	-1.2%	4.0%	6.5%	1.8%	0.0%	1.4%
Efficiency Ratio	56%	56%	56%	42%	41.2%	46.9%	39.9%	38.3%	45.6%	42.3%	43.8%	34.5%	40.2%	51.0%	43.9%	42.5%	41.1%
D&A	259	267.3	271.3	294.2	354.7	88.0	87.7	88.4	89.3	351.8	92.1	92.3	96.2	92.8	373.5	399.6	429.6
Growth (%)	-1%	3%	1%	8%	20.5%	15.5%	14.6%	11.3%	6.5%	-0.8%	4.6%	5.3%	8.8%	4.0%	6.2%	7.0%	7.5%
General Taxes	185	183	199	199	219	57	53	53	48	210	57.1	55.1	52.9	49.3	214.3	224.0	235.1
Growth (%)	1%	-1%	9%	0%	9.7%	3.3%	-1.5%	-4.9%	-5.5%	-3.7%	-0.1%	3.7%	0.5%	3.5%	1.8%	4.5%	5.0%
Total Expense	1,618.9	1,689.7	1,773.8	1,817.1	1,963	465.5	473.1	485.1	435.9	1,858	459.2	475.0	504.2	459.6	1,898	1,934	1,993
Operating Ratio	77.3%	76.3%	75.9%	74.4%	72.4%	76.3%	70.2%	63.3%	71.3%	69.7%	74.2%	63.7%	60.6%	72.6%	67.1%	66.1%	65.0%
Expense Growth (%)	-1%	4%	5%	2%	8%	1%	0%	-5%	-8%	-5%	-1%	0%	4%	5%	2%	2%	3%
EBITDA	733.4	791.8	834.4	917.8	1,102.7	232.8	288.8	369.7	264.5	1,160.0	251.4	363.0	423.9	265.9	1,304.2	1,393.2	1,503.9
EBIT	474.2	524.5	563.1	623.6	748.1	144.8	201.1	281.3	175.2	808.1	159.3	270.6	327.6	173.1	930.7	993.6	1,074.2
EBIT Margin	22.7%	23.7%	24.1%	25.6%	27.6%	23.7%	29.8%	36.7%	28.7%	30.3%	25.8%	36.3%	39.4%	27.4%	32.9%	33.9%	35.0%
Growth (%)	-5%	11%	7%	11%	20%	15%	3%	3%	17%	8%	10%	35%	16%	-1%	15%	7%	8%
Interest Expense, net	(366)	(283.2)	(285.2)	(296.5)	(315.0)	(76.5)	(78.5)	(78.6)	(79)	(312.4)	(79.7)	(79.7)	(76.6)	(74.4)	(310.4)	(333.5)	(355.9)
Other expense (income)	5	13	21	11	16	2	3	4	4	13	5	6	4	4	19	12	12
Pretax Income	113	254	299	338	449	70.0	125.8	207	101	509	84	197	255	103	639	672	730
PT Margin	5.4%	11.5%	12.8%	13.9%	16.6%	11.5%	18.7%	27.0%	16.6%	19.1%	13.6%	26.5%	30.7%	16.2%	22.6%	23.0%	23.8%
Tax Rate (%)	45.3%	37.3%	41.2%	37.9%	40.4%	40.9%	40.7%	37.9%	40.6%	39.1%	42.0%	40.9%	39.6%	41.0%	40.5%	41.0%	41.0%
Net Income	62	159.2	176.0	210.0	267.8	41.4	81.4	133.9	63.3	314.6	48.8	116.7	154.1	60.6	380.2	396.6	430.9
Net Income (disc ops)					12.8	(15.1)	6.8	5.5	3.0	4.7	(7.5)	(9.6)	(0.3)				
Shares Outstanding, Diluted		160	160	168	175	175.1	175.1	176.6	176.8	176.5	175.9	177.5	177.8	178.6	177.4	180.3	183.2
EPS		\$1.00	\$1.10	\$1.25	\$1.53	\$0.24	\$0.46	\$0.76	\$0.36	\$1.79	\$0.28	\$0.66	\$0.87	\$0.34	\$2.14	\$2.20	\$2.35
Discontinuing Ops EPS				\$0.07	\$0.07	(\$0.09)	\$0.04	\$0.03	\$0.02	\$0.03	(\$0.04)	(\$0.05)	(\$0.00)				
Cont Ops		\$1.00	\$1.10	\$1.25	\$1.60	\$0.32	\$0.43	\$0.73	\$0.34	\$1.81	\$0.24	\$0.60	\$0.86	\$0.34	\$2.14	\$2.20	\$2.35
Growth (%)			11%	13%	22.6%	34.0%	11.8%	7.0%	56.4%	17.1%	17.5%	41.4%	14.3%	-5.2%	18.5%	2.6%	6.9%
GAAP EPS		-\$2.14	\$1.10	\$1.25	\$1.53	\$0.24	\$0.46	\$0.76	\$0.36	\$1.78	\$0.28	\$0.66	\$0.87	\$0.34	\$2.14	\$2.20	\$2.35
Dividend		\$0.00	\$0.40	\$0.82	\$0.86	\$0.22	\$0.22	\$0.23	\$0.23	\$0.90	\$0.23	\$0.23	\$0.24	\$0.24	\$0.95	\$1.01	\$1.08
Payout Ratio (%)			36%	66%	56%	93%	47%	30%	65%	50%	83%	35%	28%	71%	44%	46%	46%
Key Financial Metrics																	
Earned ROE	3.2%	4.7%	4.8%	5.3%	6.5%	6.8%	7.1%	7.3%	7.3%	7.3%	8.7%	8.9%	8.2%	8.1%	8.2%	8.1%	8.3%
Earned ROE (ex-parent debt)	6.0%	6.2%	6.2%	6.6%	7.9%	8.0%	8.4%	8.6%	8.6%	8.6%	9.1%	10.1%	9.3%	9.1%	9.3%	9.1%	9.3%
Capex/Depreciation	2.6x	2.8x	3.7x	2.7x	2.2x	2.0x	2.5x	2.6x	3.4x	2.6x	2.5x	2.6x	2.1x	2.4x	2.4x	2.3x	2.2x
Water Sold Y/Y	-	1.5%	-4.4%	-5.8%	-4.3%	-0.8%	-3.7%	-3.7%	-3.8%	-3.1%	-2.8%	8.0%	7.8%	-0.3%	3.6%	-1.2%	2.0%
Water Customer Growth	1.5%	0.7%	0.2%	-0.1%													

Source: Company Reports & Baird estimates

Please refer to Appendix - Important Disclosures and Analyst Certification.

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Robert W. Baird & Co.

1/24/13

Appendix - Important Disclosures and Analyst Certification



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Equity Research

Flash Comment



January 25, 2013

AWK-NYSE--Market Perform (2)
CHK-NYSE--Market Perform (2) / V

Energy Team

Energy And Utility Daily

David Tameron, Senior Analyst (303) 863-6891
Neil Kalton, CFA, Senior Analyst (314) 875-2051

Sector Rating: Energy Team, NA

Quick thoughts from Wells Fargo Securities, LLC Energy & Utility Team:

Utilities

American Water Works (AWK/Market Perform)(Kalton) AWK initiated 2013 EPS guidance of \$2.15-2.25 after the market closed yesterday. The guidance is in line with our 2013E EPS of \$2.18 and the 2013 consensus estimate of \$2.21. In addition, AWK indicated 2012 EPS from continuing operations are expected to be at the low end of its \$2.12-2.22 range as Q4 EPS was adversely impacted by 1) accelerated maintenance of water and wastewater infrastructure, 2) Hurricane Sandy (decline in water volume and increased costs) and 3) higher than expected costs in SAP implementation. Overall, we are encouraged by the announcement and believe it generally supports our EPS outlook. The Q4 2012 headwinds appear largely non-recurring in nature though the SAP costs, and O&M expenses in general, are worth monitoring in 2013. As always, we plan to perform a complete evaluation of our model following AWK's 10-K filing and year-end call (Feb. 26/27).

Exploration & Production

As Bakken Rig Count Falling - Snow is Accumulating (Tameron / Douthat). As we pointed out in the daily yesterday, basin-wide production declined in November partially due to a lower average rig count of 145 in Q4 down from 156 in Q3 per the Land Rig Newsletter. According to the NDIC production in ND decreased from a record high rate of 749,000 bopd in October to 733,000 bopd in November (down 2.2%). The WOC well count rose sharply to 410 wells from 340 in October and 300 in September. In spite of strong growth, apparently CLR's Q4 prod'n still disappointed with the stock underperforming the EPX by 1.5% yesterday (1/24). Production was within guidance (58% y/y growth), but it looks like Street assumed production would be higher (~60%). Kodiak previously reported lower production than our estimates in Q4 as well, but still showed nice growth. The rig count along with weather could slow the pace of growth for a few months through the winter, but overall we expect growth trajectory to continue and want to be long the basin.

Also weather plays a factor in the winter in North Dakota. There was a big storm in early November followed by a fair number of snowstorms in December and January. Snow depth in Williston hovers at around 15 inches according to NOAA data. This compares to about 2 inches at the same point last year and 25 inches during the very bad 2010-2011 winter. That year snow depth topped out at about 30 inches and caused flooding and a difficult mud season for operators (compounded by heavy May rains). Reported snow depth did not break above 4 inches last year. Snow looks like it has been more significant north of the river.

CHK and the EPA Team Up For Comprehensive Study of Fracking (Tameron/Douthat). According to the Wall Street Journal (1/24/2013), the outspoken "fracktivists" at Chesapeake Energy (CHK, \$18.77/Market Perform) will work with the EPA to study the impact of fracking on water supplies. The EPA will sample water before drilling and after well completion in an unnamed- and as of now undecided- CHK well. Timing has not been set, though it sounds like both sides would like to begin work before spring so that the EPA could include the results in its long-delayed review of fracking. That report was originally

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submitted to the EPA Science Advisors Board (SAB) in March of 2011, but has been delayed several times and is not expected to be concluded before summer. In addition to CHK, RRC is also interesting in working with the EPA, though legal issues have prevented the entities from reaching an agreement. Washington County, PA, is the likely location of the study. Already contaminated sites will also be studied, but the information gleaned from that analysis is not expected to provide as much insight given the lack of data prior to drilling.

Natural Gas Withdrawal Of 172 Bcf In Line With Estimates (Tameron / Douthat) 172 Bcf In Line with Street Expectations. The EIA reported a natural gas storage withdrawal for the week ending 01/18/12 of 172 Bcf, below our 180 Bcf estimate and in line with the Street's median forecast of 172 Bcf. The report pushed front-month contracts to \$3.54/MMBtu from ~\$3.58/MMBtu earlier this morning on the withdrawal. The 5 year average for the comparable week is a 188 Bcf withdrawal, while last year we saw a withdrawal of 192 Bcf (comparable week).

Storage at 2,996 Bcf, Stocks 157 Bcf Below 2012 Y/Y. The year-over-year storage (for comparable weeks) is at a deficit of -157 Bcf (-5%) from -147 Bcf (-4%) deficit last week. The surplus versus the 5 year average widened slightly to +320 Bcf (+12%) versus +316 Bcf (+11%) last week. Our model points to an end of withdrawal season storage level of 2,050 Bcf, which would be 320 Bcf below last season's low of 2,369, but still 336 Bcf above the 5- year average of 1,714 Bcf.

American Water Works Company, Inc. (AWK-NYSE)

Price as of 1/24/2013: \$38.59

FY 12 EPS: \$2.18

FY 13 EPS: \$2.18

Shares Out.: 176.3 MM

Market Cap.: \$6,803.42 MM

Chesapeake Energy Corporation (CHK-NYSE)

Price as of 1/24/2013: \$18.77

FY 12 EPS: \$0.45

FY 13 EPS: \$0.97

Shares Out.: 752.0 MM

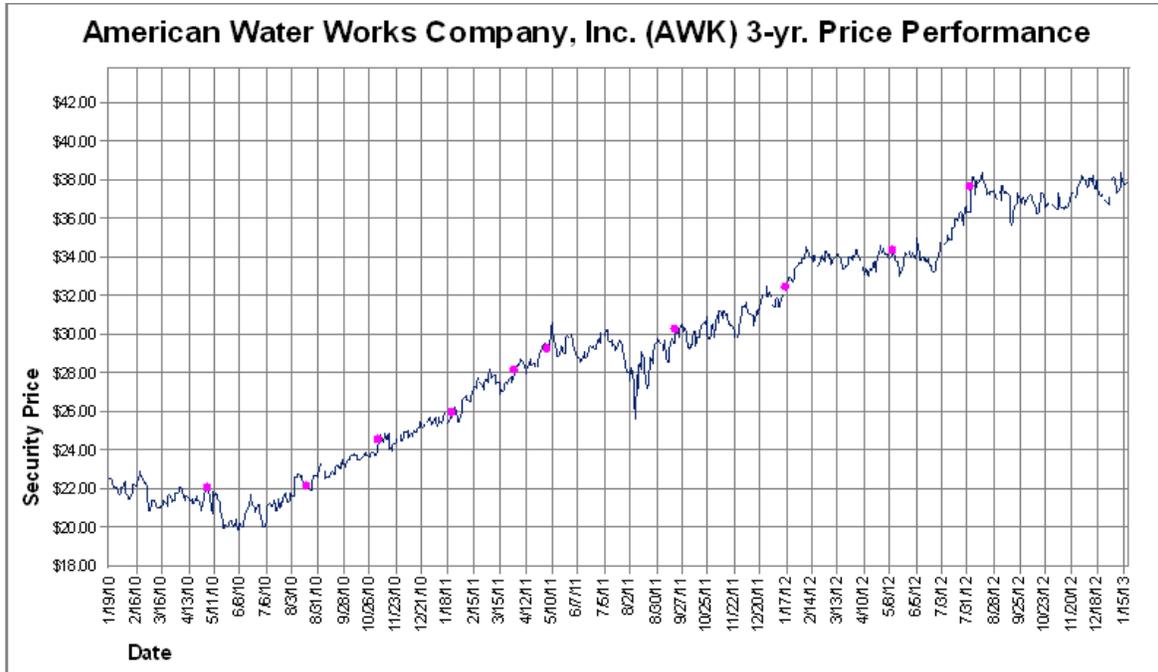
Market Cap.: \$14,115.04 MM

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Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
1/19/2010		Kalton			
1/19/2010	NA	2	20.00	21.00	22.50
● 5/5/2010	21.95	2	21.00	22.00	22.01
● 8/19/2010	22.06	2	23.00	24.00	22.09
● 11/4/2010	24.51	2	24.00	25.00	24.54
● 1/24/2011	25.91	2	26.00	27.00	25.90
● 3/31/2011	28.08	2	28.00	29.00	28.05
● 5/5/2011	28.98	2	29.00	30.00	29.20
● 9/20/2011	30.53	2	30.00	31.00	30.17
● 1/18/2012	32.24	2	32.00	33.00	32.44
● 5/11/2012	34.33	2	34.00	35.00	34.33
● 8/3/2012	37.26	2	38.00	39.00	37.62

Source: Wells Fargo Securities, LLC estimates and Reuters data

Symbol Key

- ▼ Rating Downgrade
- ▲ Rating Upgrade
- Valuation Range Change
- ◆ Initiation, Resumption, Drop or Suspend
- Analyst Change
- Split Adjustment

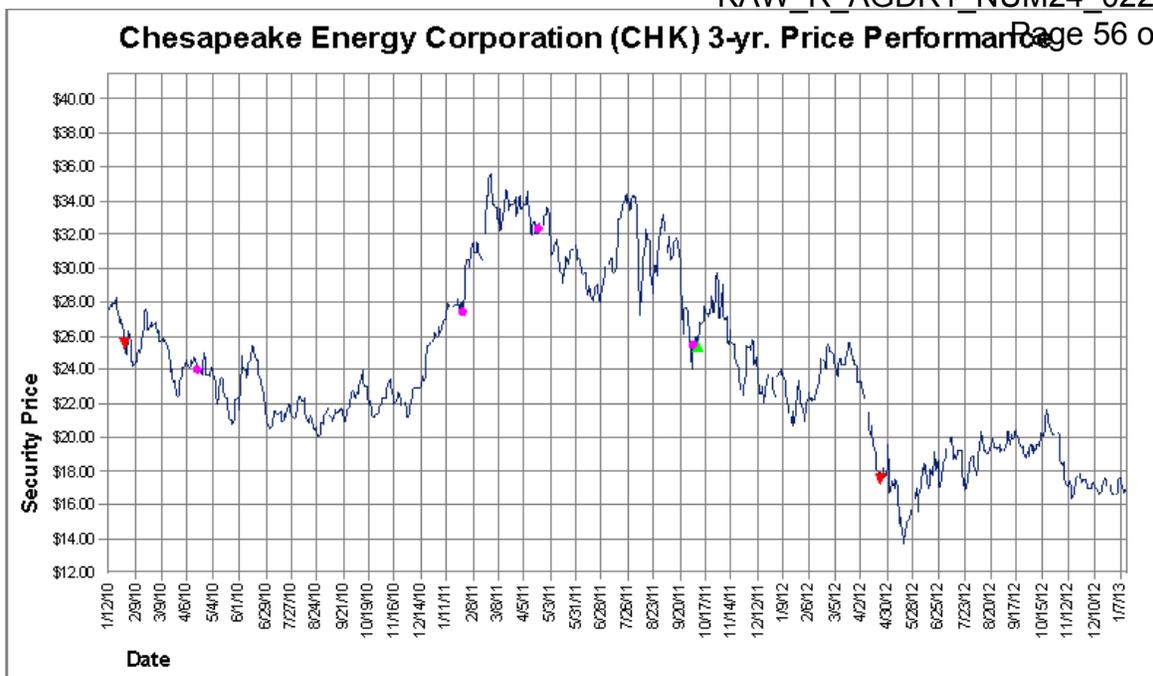
Rating Code Key

- 1 Outperform/Buy
- 2 Market Perform/Hold
- 3 Underperform/Sell
- SR Suspended
- NR Not Rated
- NE No Estimate

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	1/12/2010		Tameron			
	1/12/2010	NA	1	33.00	35.00	27.58
▼●	1/28/2010	25.93	2	27.00	31.00	25.51
●	4/16/2010	23.84	2	25.00	28.00	23.88
●	1/28/2011	27.70	2	26.00	30.00	27.33
●	4/20/2011	31.98	2	32.00	36.00	32.21
●	10/5/2011	NA	2	26.00	29.00	25.39
▲●	10/7/2011	25.91	1	38.00	42.00	25.35
▼●	4/20/2012	18.00	2	18.00	22.00	17.44

Source: Wells Fargo Securities, LLC estimates and Reuters data

Symbol Key

▼ Rating Downgrade
▲ Rating Upgrade
● Valuation Range Change

◆ Initiation, Resumption, Drop or Suspend
■ Analyst Change
□ Split Adjustment

Rating Code Key

1 Outperform/Buy SR Suspended
2 Market Perform/Hold NR Not Rated
3 Underperform/Sell NE No Estimate

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2 = Market Perform: The stock appears appropriately valued, and we believe the stock's total return will be in line with the market over the next 12 months. HOLD

3 = Underperform: The stock appears overvalued, and we believe the stock's total return will be below the market over the next 12 months. SELL

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M = Market Weight: Industry expected to perform in-line with the relevant broad market benchmark over the next 12 months.

U = Underweight: Industry expected to underperform the relevant broad market benchmark over the next 12 months.

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KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren**

25. CC – Reference: Cost of Capital. Please provide copies of credit reports for AWWC and KAWC from the major credit rating agencies (S&P, Moody's, and Fitch) published since January 1, 2011.

Response:

Kentucky American is not rated by the major credit rating agencies. Please see the attached for S&P and Moody's reports for American Water Works Company.



Announcement: Moody's changes American Water Works' outlook to positive

Global Credit Research - 14 Aug 2012

Approximately \$5.5 billion of debt affected

New York, August 14, 2012 – Moody's Investors Service affirmed the ratings of American Water Works (American Water) and changed the outlook to positive from stable. In addition, Moody's affirmed the ratings and changed the outlooks for American Water Capital Corp. (AWCC), Pennsylvania American Water (PAWC), and New Jersey American Water (NJ-AWC) to positive from stable. AWCC's P-2 commercial paper rating is also affirmed.

RATINGS RATIONALE

The change in the rating outlooks primarily reflects the progress made by the company since its spin-off by RWE AG (A3, negative) in 2008. This has been evidenced by successful rate case outcomes in multiple regulatory jurisdictions as well as recent divestitures of assets located in more challenging regulatory jurisdictions. Proceeds from those asset sales have been reinvested into operations domiciled in more credit supportive jurisdictions.

Specifically, American Water's regulatory profile has benefitted from the divestiture of its Arizona, New Mexico and Ohio subsidiaries, which consistently under-earned their authorized ROE. Furthermore, the company has recently acquired additional assets in New York; a more credit supportive regulatory jurisdiction.

American Water's FFO to net debt has steadily increased over the past five years and, at a level around 15% for LTM 2Q12, has benefitted from over \$100 million in general rate increases and infrastructure charges since the beginning of 2012. That said, American Water faces a demanding capex program estimated between \$800 million to \$1 billion, per year, over the intermediate-term. Financing this growth in a manner that allows the company to maintain key financial metric of over 15% FFO to net debt and 10% Retained Cash Flow to net debt, could trigger a ratings upgrade.

The change in outlooks for PAWC and NJ-AWC reflects improved financial profiles and the expectation for each utility to average around 17% FFO to net debt over the intermediate-term. This level of financial metrics would strongly position PAWC and NJ-AWC amongst A3 global water utility peers, given the relative strength of the Pennsylvania and New Jersey regulatory environments. New Jersey, in particular, has improved the cost recovery provisions that it offers NJ-AWC through a newly implemented distribution improvement systems charge (DISC), which enables the utility to automatically pass the costs of routine infrastructure improvements on to rate payers without the usual regulatory delay.

AWCC's outlook corresponds with its parent, American Water, which provides credit enhancement through a support agreement for all of AWCC's debt obligations.

Headquartered in Voorhees, New Jersey, American Water is the largest investor-owned provider of water, wastewater and related services in North America.

The principal methodology used in this rating was Global Regulated Water Utilities published in December 2009. Please see the Credit Policy page on www.moodys.com for a copy of this methodology.

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disclosures in relation to each rating of a subsequently issued bond or note of the same series or category/class of debt or pursuant to a program for which the ratings are derived exclusively from existing ratings in accordance with Moody's rating practices. For ratings issued on a support provider, this announcement provides relevant regulatory disclosures in relation to the rating action on the support provider and in relation to each particular rating action for securities that derive their credit ratings from the support provider's credit rating. For provisional ratings, this announcement provides relevant regulatory disclosures in relation to the provisional rating assigned, and in relation to a definitive rating that may be assigned subsequent to the final issuance of the debt, in each case where the transaction structure and terms have not changed prior to the assignment of the definitive rating in a manner that would have affected the rating. For further information please see the ratings tab on the issuer/entity page for the respective issuer on www.moody's.com.

Moody's considers the quality of information available on the rated entity, obligation or credit satisfactory for the purposes of issuing a rating.

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Please see Moody's Rating Symbols and Definitions on the Rating Process page on www.moody's.com for further information on the meaning of each rating category and the definition of default and recovery.

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Please see www.moody's.com for any updates on changes to the lead rating analyst and to the Moody's legal entity that has issued the rating.

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			of Date Published	
	Measure	Score	Measure	Score
Factor 1: Regulatory Framework & Asset Ownership (40%)				
a) Stability & Predictability of Regulatory Environment		Baa		Baa
b) Asset Ownership		Aa		Aa
c) Cost and Investment Recovery (Ability & Timeliness)		A		A
d) Revenue Risk		Baa		Baa
Factor 2: Operational Characteristics & Asset Risk (10%)				
a) Operational Efficiency		Baa		Baa
b) Scale of Capital Program and Asset Condition		Baa		Baa
Factor 3: Stability of Business Model and Financial Structure (10%)				
a) Ability & Willingness to Pursue Opportunistic Corp. Activity		Baa		Baa
b) Ability & Willingness to Increase Leverage		Baa		Baa
c) Proportion of Revenues Outside Core Water and Wastewater		A		A
Factor 4: Key Financial Metrics (40%)				
a) FFO Interest Coverage (3 Year Average)	3.3x	Baa	3.0x - 3.5x	Baa
b) Debt / Capitalization (3 Year Average)	55%	A	50% - 60%	A / Baa
c) FFO / Net Debt (3 Year Average)	13%	Baa	11% - 15%	Baa
d) RCF / Capex (3 Year Average)	0.78x	Ba	0.75x - 0.90x	Ba
Rating:				
Indicated Rating from Grid		Baa1		Baa1
Actual Rating Assigned		Baa2		Baa2

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Credit Opinion: American Water Works Company, Inc.

Global Credit Research - 15 Aug 2012

Voorhees, New Jersey, United States

Ratings

Category	Moody's Rating
Outlook	Positive
Issuer Rating	Baa2
New Jersey-American Water Company, Inc.	
Outlook	Positive
Issuer Rating	Baa1
American Water Capital Corp.	
Outlook	Positive
Issuer Rating	Baa2
Senior Unsecured	Baa2
Commercial Paper	P-2
Pennsylvania-American Water Company	
Outlook	Positive
Issuer Rating	Baa1
Bkd Senior Secured	A2

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Key Indicators

[1]American Water Works Company, Inc.

	LTM 2Q12	2011	2010	2009
(FFO + Interest) / Interest Expense	3.6x	3.6x	3.2x	3.0x
FFO / Net Debt	15%	14%	13%	11%
RCF / Capex	0.74x	0.82x	0.82x	0.70x
Debt / Capitalization	52%	54%	55%	56%

[1] All ratios calculated in accordance with the Regulated Water Utilities Rating Methodology using Moody's standard adjustments

Note: For definitions of Moody's most common ratio terms please see the accompanying [User's Guide](#).

Opinion

Rating Drivers

Well diversified utility operations in supportive regulatory environments

Unregulated operations remain within core competencies

Sizeable ongoing capital demands

Support Agreement at AWCC not a "guarantee"

Corporate Profile

Headquartered in Voorhees, New Jersey, American Water Works Company, Inc. ("American Water"), is the largest investor-owned provider of water, wastewater and related services in North America, with operations serving over 15 million people across approximately 30 states in the U.S. and Canada. American Water is a holding company and does not have any direct debt obligations; rather, it primarily issues debt through its non-operating financing subsidiary American Water Capital Corp. ("AWCC"), which has a support agreement with American Water. The family's consolidated debt also includes obligations issued at the regulated subsidiary level. At June 30, 2012, approximately \$3.4 billion of long-term debt was issued at the AWCC level (63% of consolidated long-term debt of \$5.4 billion), \$2.3 billion of which has been advanced via inter-company notes to various regulated utility subsidiaries.

Rating Rationale

American Water's Baa2 issuer rating is primarily driven by its geographically diverse regulated utility operations, which are expected to provide a relatively stable source of predictable cash flow. Moreover, water delivery entails a high level of environmental and regulatory oversight, and the importance of water to the communities served is an important rating consideration, one we believe adds stability to the sector. The company's credit metrics are viewed as average although improving for the current rating category (as a non-operating holding company). Funding the large capital spending forecast coupled with continuing efforts to realize actual authorized ROE's among its various jurisdictions (nearly 90% of consolidated revenues were derived from regulated operations in 2011) will continue to be key liquidity and regulatory considerations for the company.

DETAILED RATING CONSIDERATIONS

IMPROVING REGULATORY PROFILE DOMINATES BUSINESS MIX

American Water recently made several credit enhancing M&A transactions, which include divestitures of assets in challenging regulatory environments while using those proceeds to add to the size of its operations in more supportive environments. For example, the company completed the close of the sale of its Arizona and New Mexico subsidiaries in January 2012, which contributed over \$470 million of proceeds (including the assumption of \$215 million of long-term debt), which were used to reduce debt and invest in utility operations. In May of 2012, American Water sold its Ohio subsidiary in concert with the purchase of the capital stock of Aqua New York for net cash proceeds of \$50 million. The company also acquired three small Pennsylvania water and wastewater systems as tuck-in acquisitions, in May.

These actions are positive to the credit profile of American Water, given that the states exited by the company, were historically challenging from a regulatory and ROE perspective. The divestitures not only eliminate drag from poorly performing subsidiaries, but the addition of operations in Pennsylvania and New York adds exposure to reasonably supportive regulatory environments; albeit at a relatively minor increment.

American Water's most significant regulatory exposure is based upon its largest subsidiaries, including New Jersey-American Water (NJ-AWC, Baa1, positive), Pennsylvania-American Water (PAWC; Baa1, positive), Illinois-American Water (not rated), and Missouri-American Water (not rated). Collectively, these four water utilities accounted for approximately 60% of American Water's 2011 consolidated revenues. Although there can be differences in the level of profitability at each subsidiary, the regulated nature of the water utility business should ensure a relatively stable and healthy return over time. The geographic diversity can also provide a balancing effect to the variability of cash flows due to seasonal weather effects or timing of rate filings.

American Water's non-regulated water services segment is relatively small (12% of revenues in 2011) and is comprised of contracted water services with predominantly governmental entities, homeowner services and a

biosolids management group. The contracted operations group has historically comprised around 70% of the unregulated contributions to consolidated revenue, but on August 1, 2012 American Water was selected by New York City to provide service line protection programs to the city's homeowners. This development is likely to increase both the homeowner revenue contribution to the unregulated segment, as well as increase the amount of unregulated influence on consolidated revenue and cash flow. Nevertheless, we do not anticipate the unregulated segment growing beyond 15% of the consolidated operations.

We note as well that while non-regulated operations typically bring added credit risk, we do not believe that these activities impact the overall credit negatively as they are in related lines of business (contract water services) and have not, to date, required a significant amount of capital or reliance on credit support from the parent.

FINANCIAL METRICS HAVE IMPROVED, BUT CAPEX MAY TEMPER PREVIOUS TRAJECTORY

American Water's cash flow based credit metrics have continued to show a slow improving trend. With the steady implementation of new general base rates, and infrastructure surcharges where available, the company has continued to strengthen its financial profile. Through the LTM period ended June 30, 2012, the company's FFO to net debt was around 15% (compared with 14% in 2011, 13% in 2010 and 12% in 2009). Moody's believes a range between 10-15% is appropriate for regulated water utility issuers (operating companies) in the "Baa" range.

American Water's financial improvement has been driven by consistent and supportive general rate case outcomes throughout its 15 regulated state jurisdictions and a focus on controlling operating costs throughout the enterprise. In 2012 alone, American Water has benefitted from over \$100 million in general rate increases and infrastructure charges since the beginning of the year.

That said, American Water faces ongoing demands of this highly capital intensive industry. Capital spending rates for American Water have averaged around 230% of depreciation in the last three years. This level of spending is higher than what is immediately recoverable in rates and often leads to negative free cash flow, which is a perpetual challenge for the company and industry. Funding is often financed with debt until "rate-base" is established and factored into allowed returns. This typically requires periodic equity contributions to the operating utilities to maintain the targeted balance of debt and equity in the capital structure. We expect that over the next several years, American Water's capital investment schedule will remain significant for the foreseeable future, ranging from \$800 million to \$1 billion, annually. Timely rate increases and the ability to attract new equity capital will be two key drivers for not only maintaining, but also potentially upgrading, the rating going forward to support the company's current level of financial metrics.

Addressing the lag between time of investment and recovery in rates is one of two key strategic focal points for the company over the past two years. To that end, the company has pursued various mechanisms by which to shorten regulatory lag and quicken the pace of cost recovery. Some of these efforts include: distribution system investment charge (DISC) implementation; decoupling mechanisms (see Moody's report 'Decoupling and 21st Century Rate Making'), forward looking expenses in rate case test years and frequent filings of rate cases. Throughout its many state jurisdictions, American Water has had various degrees of success in implementing these mechanisms, which has resulted in a relatively beneficial suite of cost recovery features, overall, that should continue to improve over time.

SUPPORT AGREEMENT WITH AMERICAN WATER CAPITAL CORP

AWCC, a Delaware corporation, is the wholly-owned finance subsidiary of American Water, whose purpose is to streamline the financing function, create cash management efficiencies, and lower the cost of capital for American Water's regulated water utility subsidiaries. The source of upstream debt service funding comes from the regulated utility operations, which make cash principal and interest payments directly to AWCC. As noted above, approximately \$2.3 billion of AWCC's long-term debt has been advanced to several regulated utility subsidiaries via intercompany loans which is incorporated in their respective capital structures for rate-making purposes. We expect any additional up-streamed cash flows, in the form of dividends, will be limited to the retained, undistributed or current earnings of each jurisdiction.

AWCC's Baa2 senior unsecured rating is equalized with its parent, American Water, which provides credit enhancement through a support agreement between American Water and AWCC. Under that agreement, American Water has committed to own, during the term of the support agreement, all of the voting stock of AWCC and to ensure that a positive tangible net worth at AWCC will be maintained at all times. In addition, if AWCC is unable to make timely payment of interest, principal, or premium on any debt issued and outstanding, American Water has

committed to provide immediate and timely funds to AWCC to remedy the situation.

Although the support agreement has many attributes of what a guarantee provides, we note that it is not specifically or legally considered a guarantee. Also, debt at AWCC does not benefit from any explicit upstream guarantees from the regulated utility subsidiaries nor does the debt obligations of the subsidiaries benefit from any explicit downstream guarantee from American Water or AWCC. Nevertheless, given the agreement's stated protections, and the fact that a significant amount of AWCC's debt has been incurred to finance rate base, we effectively view the support agreement structure as being similar to a guarantee for rating purposes and have made no notching differentiation between the two entities.

Liquidity

American Water's liquidity is managed through its financing subsidiary, AWCC, which maintains an aggregate revolving credit facility of \$840 million that offers support to the \$700 million commercial paper program (P-2). Although there are no restrictions for revolver borrowings, related to CP outstanding, we expect the company to leave ample cushion under the revolver to effectively backstop any CP borrowings. The \$840 million facility is comprised of \$155 million expiring in September 2012 and \$685 million expiring September 2013. The facility has same-day drawing availability and no ongoing material adverse change clause. The lone financial covenant is maximum debt to capitalization ratio of 70%. Given the relatively near-term maturities of both credit facilities, we incorporate a view that the company will successfully refinance these, in some fashion, in short order. At June 30, 2012, there were no outstanding borrowings under either credit facility; however, about \$362 million of commercial paper was outstanding.

For the LTM period ending June 30, 2012, American Water generated approximately \$863 million of cash from operations, had capital expenditures of just over \$1 billion and paid dividends of \$162 million. The company's negative free cash flow position of over \$300 million was met with an increase in short-term debt borrowings and with proceeds from the divestiture of the Arizona and New Mexico properties. We expect a similar pattern of cash flows over the next four quarters, since our estimate of internally generated cash flow will not be sufficient to support the company's ongoing capital expenditures of approximately \$800 million - \$1 billion and annualized dividends (approximately \$160 million averaged over the past three years).

Rating Outlook

The positive rating outlook reflects our expectation that the company will continue to achieve regulatory support sufficient to maintain the current level of cash flow driven credit metrics despite an increasing debt profile associated with the company's anticipated capital expenditure program.

What Could Change the Rating - Up

The ratings for American Water and Capital company could be considered for a rating review if, on a consolidated basis, the company were able to maintain on a sustainable basis FFO to debt above 15% while also improving its other key credit metrics including retained cash flow to debt above 10%.

What Could Change the Rating - Down

Factors that could pressure the ratings downward, include: changes to the existing support agreement between AWCC and American Water; significant deterioration in credit metrics so that FFO to debt falls below 10% for an extended period; failure to secure appropriate rate relief from various regulatory jurisdictions; and/or an inappropriate mix of debt and equity utilized to finance its capital expenditure program.

Rating Factors

American Water Works Company, Inc.

Global Regulated Water Utilities [1][2]	Current LTM 12/31/2011	Moody's 12-18 month Forward View As
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MOODY'S
INVESTORS SERVICE

Credit Opinion: American Water Works Company, Inc.

Global Credit Research - 30 Nov 2011

Voorhees, New Jersey, United States

Ratings

Category	Moody's Rating
Outlook	Stable
Issuer Rating	Baa2
New Jersey-American Water Company, Inc.	
Outlook	Stable
Issuer Rating	Baa1
American Water Capital Corp.	
Outlook	Stable
Issuer Rating	Baa2
Senior Unsecured	Baa2
Commercial Paper	P-2
Pennsylvania-American Water Company	
Outlook	Stable
Issuer Rating	Baa1
Bkd Senior Secured	A2

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Key Indicators

American Water Works Company, Inc.

	2008	2009	2010	LTM 9-2011
Funds From Operations "FFO" / Debt	10.4%	11.4%	12.6%	12.8%
FFO + Interest / Interest	2.9x	3.0x	3.2x	3.3x
(FFO - Dividends) / Capex	0.5x	0.7x	0.8x	0.8x
Debt / Capitalization	55.6%	55.8%	54.9%	54.0%
Common Dividends / Net Income Available for Common [1]	-11.4%	-58.8%	56.0%	50.5%
Net Income Available for Common / Common Equity [1]	-14%	-6%	6%	7%

[1] Not adjusted to exclude non-cash goodwill write-down

Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.

Opinion

Rating Drivers

- Holding company owner of relatively stable, regulated water utility operations
- Improving credit metric trend
- Reduced, yet still sizeable capital spending plan
- Support Agreement at Cap-Corp not a "guarantee"

Corporate Profile

Headquartered in Voorhees, New Jersey, American Water Works Company, Inc. ("American Water"), is the largest investor-owned provider of water, wastewater and related services in North America. Through its numerous regulated water utility subsidiaries, and smaller water-related non-regulated operations, American Water generated approximately \$2.8 billion of revenues and \$1.2 billion of EBITDA for the last twelve months ended September 30, 2011.

American Water is a holding company and does not have any direct debt obligations. American Water primarily issues debt through its non-operating financing subsidiary American Water Capital Corp. ("Cap-Corp"), which has a support agreement with American Water. The family's consolidated debt also includes obligations issued at the regulated subsidiary level. At September 30, 2011, approximately \$3.4 billion of long-term debt was issued at the Cap-Corp level (63% of total consolidated long-term debt of \$5.5 billion), \$2.3 billion of which has been advanced via inter-company notes to various regulated utility subsidiaries.

Rating Rationale

American Water's Baa2 issuer rating is primarily driven by its geographically diverse regulated utility operations, which are expected to provide a relatively stable source of cash flows over time. Moreover, water delivery entails a high level of environmental and regulatory oversight, and the importance of water to the communities served is an important rating consideration, one we believe adds stability to the sector. The company's credit metrics are viewed as average although improving for the current rating category (as a non-operating holding company). Funding the large capital spending forecast coupled with continuing efforts to realize actual authorized ROE's among its various jurisdictions (approximately 90% of consolidated revenues were derived from regulated operations in 2010) will continue to be key liquidity and regulatory considerations for the company. Although current rate increase requests come at economically challenging times, the stable outlook incorporates Moody's expectation for adequate and timely rate relief in most of its jurisdictions.

Moody's rating for American Water is also guided by our rating methodology titled: "Global Regulated Water Utilities", published in December 2009. The key factors influencing American Water's long-term Baa2 (senior unsecured), and short-term P-2 ratings and stable outlook are noted below:

DETAILED RATING CONSIDERATIONS

GEOGRAPHIC DIVERSITY AND LARGELY REGULATED OPERATIONS

With operations in over 30 states and areas of Canada, American Water's operating reach is considerable. On the regulated side, American Water's four largest water utilities include: New Jersey-

American Water (Baa1 issuer / A2 senior secured; stable), Pennsylvania-American Water (Baa1 issuer / A2 senior secured; stable), Illinois-American Water (not rated), and Missouri-American Water (not rated). Collectively, these four water utilities accounted for approximately 58% of American Water's 2010 consolidated revenues. Although there can be differences in the level of profitability at each subsidiary, the regulated nature of the business should ensure a relatively stable and healthy return over time. The geographic diversity can also provide a balancing effect to the variability of cash flows due to seasonal weather effects or timing of rate filings.

American Water's non-regulated water services segment is relatively small (11% of revenues in 2010), has thinner operating margins, and will likely remain a secondary source of earnings for the foreseeable future. We note as well that while non-regulated operations typically bring added credit risk, we do not believe that these activities impact the overall credit negatively as they are in related lines of business (contract water services) and have not, to date, required a significant amount of capital or reliance on credit support from the parent.

KEY STRATEGIC INITIATIVES

In August 2010, Jeffrey Sterba was appointed as CEO of American Water. Shortly thereafter, several key initiatives were announced including a focus on operating expenses, rate case strategy, and portfolio optimization. The centerpiece of the cost strategy is the implementation of SAP software by 2013, and a focus on the so-called "operating efficiency ratio" (expense to revenue, excluding purchased water costs). On the regulatory front there has been an announced shift from "catch-up" rate case filings to a focus on authorization of infrastructure surcharges and mechanisms to consider declining water use per customer. With respect to the portfolio realignment, there has been notable activity to divest what the company views as non-core holdings while expanding its presence in other states. The status of these transactions are as follows:

- In July 2011, the company announced the acquisition of Aqua America Inc.'s regulated operations in New York and its intent to contemporaneously sell its regulated operations in Ohio to Aqua America. While these asset transactions are credit positive, they are small relative to the consolidated operating profile. Following the transaction's expected close in early 2012 (\$43 million net proceeds), American Water will be the largest investor-owned water utility in the state of New York.
- In June 2011, the sale of American Water's Arizona and New Mexico operations was announced. Proceeds from these sales are expected to be around \$470 million (\$255 million net of assumed debt). Closing is expected in late 2011 or early 2012.
- In June 2011, the company completed the divestiture of its Texas assets for \$6.2 million (\$3.2 million net) and acquired Aqua America's assets in Missouri for \$3.3 million.

Taken together, these initiatives are viewed as credit neutral to positive. American Water has long been a unique utility given the large number of states it operates in, which in some ways leaves it with very few peers to comp against. Should the efforts detailed above result in a more efficient consolidated entity with less cash flow "loss" at the holding company and improved credit metrics, without diminishing the regulatory and geographic diversity, then it could positively impact the rating.

IMPROVING CREDIT METRICS

American Water's cash flow based credit metrics have continued to show a slow improving trend. With the steady implementation of new general base rates, and infrastructure surcharges where available, the company has continued to strengthen its financial profile. Through the LTM period ended September 30, 2011, the company's FFO to debt was 12.8% (compared with 12.6% in 2010 and 11.5% in 2009). Moody's believes a range between 10-15% is appropriate for regulated water utility issuers (operating companies) in the "Baa" range.

CAPITAL INTENSIVE INDUSTRY

Given the regulated water utility business' highly capital intensive nature, capital spending rates for American Water have averaged around 260% of depreciation for the period 2008-10. This level of spending is higher than what is immediately recoverable in rates and often leads to negative free cash flow, which is not uncommon for regulated water and electric utilities. Funding is often financed with debt until "rate-base" is established and factored into allowed returns. This typically requires equity contributions to maintain the targeted balance of debt and equity in the capital structure. We expect that over the next several years, American Water's capital investment schedule will remain significant (at or near \$1.0 billion annually from 2011-2013). Timely rate increases and the ability to attract new equity capital will be two key drivers for maintaining the rating going forward in order to avoid future downward pressure on the rating or outlook.

SUPPORT AGREEMENT WITH AMERICAN WATER CAPITAL CORP

Cap-Corp, a Delaware corporation, is the wholly-owned finance subsidiary of American Water, whose purpose is to streamline the financing function, create cash management efficiencies, and lower the cost of capital for American Water's regulated water utility subsidiaries. Cap-Corp's Baa2 senior unsecured rating is equalized with its parent, American Water, who provides credit enhancement through a support agreement between American Water and Cap-Corp. Under that agreement, American Water will continue to own, during the term of the support agreement, all of the voting stock of Cap-Corp. American Water has also committed to ensure that a positive tangible net worth at Cap-Corp will be maintained at all times. In addition, if Cap-Corp is unable to make timely payment of interest, principal, or premium on any debt issued and outstanding, American Water has committed to provide immediate and timely funds to Cap-Corp.

American Water's primary source of cash to service debt at Capital comes from the company's regulated utility operations. As noted above, approximately \$2.3 billion of Cap-Corp's long-term debt has been advanced to several regulated utility subsidiaries and this debt is considered in their respective capital structures for rate-making purposes. We expect any additional up-streamed cash flows, in the form of dividends, will be limited to the retained, undistributed or current earnings of each jurisdiction. The company's currently expressed target is to have each of its regulated subsidiaries pay a quarterly dividend equal to 75% of net income (of the previous quarter).

Although the support agreement has many attributes of what a guarantee provides, we note that it is not specifically or legally considered a guarantee. Also, debt at Cap-Corp does not benefit from any explicit upstream guarantees from the regulated utility subsidiaries nor does the debt obligations of the subsidiaries benefit from any explicit downstream guarantee from American Water. Nevertheless, given the agreement's stated protections, and the fact that a significant amount of this debt was incurred to finance rate base, Moody's effectively views the support agreement structure similar to a guarantee for rating purposes and has made no notching differentiation between the two entities.

Liquidity

For the LTM period ending September 30, 2011, American Water generated approximately \$764 million of cash from operations, had capital expenditures of \$865 million and paid dividends of \$156 million. The company's negative free cash flow position of \$257 million was met with an increase in short-term debt borrowings. We expect a similar pattern of cash flows over the next four quarters since our estimate of internally generated cash flow will not be sufficient to support the company's ongoing average annual capital expenditures of approximately \$0.8 -1.0 billion and annualized dividends (approximately \$150 million - announced target is 50-70% of net income). Over the next twelve months we expect the negative free cash flow to be funded by commercial paper borrowings or proceeds from the sale of its Arizona and New Mexico assets.

The \$700 million commercial paper program established at Capital (P-2) is backstopped by a syndicated

revolving credit agreement totaling \$840 million, of which \$155 million expires in September 2012 and \$685 million in September 2013. The facility has same-day drawing availability and no ongoing material adverse change clause. The lone financial covenant is maximum debt to capitalization ratio of 70%. At September 30, 2011, American Water's debt to cap was 58%. The company also maintains a smaller \$10 million credit line with a single lender.

At September 30, 2011, there were no outstanding borrowings under either credit facility; however, \$36 million of outstanding letters of credit were issued and the company had approximately \$390 million of commercial paper outstanding leaving available capacity of \$414 million until next September and \$257 million until following September .

In recent years, American Water has taken several large charges to equity related to goodwill write-downs. Given that the market value of the company's equity is currently at or near book value, further write-downs are still possible; however, if you consider a complete write-down and charge to equity for the remaining goodwill, we believe American Water's debt to cap should remain within the covenanted 70% level.

Rating Outlook

The rating outlook is stable given our expectation that the company will be able to maintain the current level of cash flow driven credit metrics, which are appropriate for the rating level.

What Could Change the Rating - Up

The ratings for American Water and Capital are not likely to be upgraded in the near-term. Nevertheless, the company could be considered for a rating review if it were able to maintain on a sustainable basis FFO to debt above 15% while also improving its other key credit metrics including retained cash flow to debt above 10%.

What Could Change the Rating - Down

There are a number of factors that Moody's would take into account and likely see as placing negative pressure on American Water or Cap-Corp's ratings. These factors include any changes to the existing support agreement between Cap-Corp and American Water as well as any significant deterioration in credit metrics due to a failure to secure appropriate rate relief from various regulatory jurisdictions or an inappropriate mix of debt and equity utilized to finance its capital expenditure program resulting in FFO to debt falling below 10% for an extended period.

Rating Factors

American Water Works Company, Inc.

Global Regulated Water Utilities [1][2]	Current LTM 9/30/2011		Moody's 12-18 month Forward View As of November 18, 2011*	
Factor 1: Regulatory Framework & Asset Ownership (40%)	Measure	Score	Measure	Score
a) Stability & Predictability of Regulatory Environment		Baa		Baa

b) Asset Ownership		A		A
c) Cost and Investment Recovery (Ability & Timeliness)		Baa		Baa
d) Revenue Risk		A		A
Factor 2: Operational Characteristics & Asset Risk (10%)				
a) Operational Efficiency		Baa		Baa
b) Scale of Capital Program and Asset Condition		Baa		Baa
Factor 3: Stability of Business Model and Financial Structure (10%)				
a) Ability & Willingness to Pursue Opportunistic Corp. Activity		Baa		Baa
b) Ability & Willingness to Increase Leverage		Baa		Baa
c) Proportion of Revenues Outside Core Water and Wastewater		A		A
Factor 4: Key Financial Metrics (40%)				
a) FFO + Interest / Interest	3.3x	Baa	2.5-4.5x	Baa
b) Debt / Capitalization	54.0%	A	40-55%	A
c) FFO / Debt	12.9%	Baa	10-15%	Baa
d) RCF / Capex	0.8x	Ba	.5-1x	Ba
Rating:				
Indicated Rating from Grid		Baa1		Baa1
Actual Rating Assigned		Baa2		

* THIS REPRESENTS MOODY'S FORWARD VIEW; NOT THE VIEW OF THE ISSUER; AND UNLESS NOTED IN THE TEXT DOES NOT INCORPORATE SIGNIFICANT ACQUISITIONS OR DIVESTITURES

[1] All ratios are calculated using Moody's Standard Adjustments. [2] As of 9/30/2011(L); Source: Moody's Financial Metrics



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Research Update:

American Water Works And Subs Rating Outlook Is Revised To Positive On Stronger Financial Performance; Ratings Affirmed

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Research Update:

American Water Works And Subs Rating Outlook Is Revised To Positive On Stronger Financial Performance; Ratings Affirmed

Overview

- Voorhees, N.J.-based water utility company American Water Works Co. Inc. has continued to strengthen its financial measures and has demonstrated effective management of regulatory risk.
- We are affirming our ratings on the company and its subsidiaries American Water Capital Corp., New Jersey-American Water Co., and Pennsylvania-American Water Co., including the 'BBB+' corporate credit ratings and 'A-2' commercial paper ratings. We also are revising the ratings outlook to positive from stable.
- The positive outlook reflects the potential for a one-notch upgrade over the next 12 to 18 months based on continued improvement in the company's financial condition.

Rating Action

On July 18, 2012, Standard & Poor's Ratings Services affirmed its ratings on regulated water utility company American Water Works Co Inc. (AWW) and subsidiaries American Water Capital Corp. (AWCC), New Jersey-American Water Co., and Pennsylvania-American Water Co., including the 'BBB+' corporate credit ratings and 'A-2' commercial paper ratings. We revised the ratings outlook to positive from stable. About \$5.3 billion of total long-term debt was outstanding as of March 31, 2012.

Rationale

The outlook revision reflects our expectation that there is at least a one-in-three probability that the company will continue to achieve modest improvements in its financial measures that would support a one-notch upgrade over the intermediate term. Higher ratings are possible if the company continues to strengthen its overall financial condition and if the company continues to effectively manage its regulatory relationships to continually achieve constructive regulatory outcomes in its many jurisdictions.

Standard & Poor's ratings on AWW and its subsidiaries reflect its "excellent" business risk profile and "significant" financial risk profile. A favorable competitive position, a diverse and supportive regulatory environment, and stable service territories support AWW's excellent business risk profile. AWW's regulatory framework includes reasonably allowed returns on equity and

Research Update: American Water Works And Subs Rating Outlook Is Revised To Positive On Stronger Financial Performance; Ratings Affirmed

various cost-recovery mechanisms, including incentives for infrastructure improvements.

The company's geographic reach provides it with market, cash flow, and regulatory diversification. We view AWW's operating risks associated with its unregulated operations as fairly low. AWW's elevated capital-spending requirements for infrastructure replacement, increased costs of compliance with water quality standards, and the company's reliance on acquisitions to provide growth partly offset these strengths.

AWW provides regulated water and wastewater services to about 3.3 million customers in 15 states. The company's regulated utility subsidiaries represent about 89% of total revenues, but have provided more than 95% of adjusted EBITDA for the past three years. The company's unregulated subsidiaries engage in water and wastewater facility management and maintenance, as well as design and construction consulting services related to water and wastewater plants. We view these unregulated segments as having modest incremental risk for AWW, due to their lack of cash flow contribution and modest expected capital requirements.

A state commission regulates each of AWW's regulated subsidiaries, which supports revenue and cash flow stability. In a number of jurisdictions, which represent about 50% of consolidated revenues, the utility recovers replacement capital spending between rate cases up to a stated percentage. The importance of infrastructure surcharge mechanisms has increased, given AWW's large capital program. Certain states also allow for surcharges related to the cost of power, chemicals, and purchased water. For the next few years, we expect AWW to file additional rate cases and request additional recovery mechanisms to cover rising operating costs, capital spending, and pension and other postretirement obligations.

AWW estimates that it will need to spend about \$800 million to \$1 billion annually in each of the next three years to replace infrastructure, build new facilities to comply with water quality standards, and initiate projects to enhance reliability, quality of service, and efficiency. AWW's reliability of supply is high, as the company owns a substantial number of treatment facilities for surface and groundwater treatment, and the majority of supply comes from surface and groundwater. In 2011, surface water provided 65% of supply, groundwater 28%, and purchased water about 7%.

AWW's consolidated financial risk profile is significant under our criteria and reflects our baseline forecast that consolidated funds from operations (FFO) to debt and debt to EBITDA will approximate 14% and 4.9x, respectively, over the medium term. The company's cash flow measures continue to improve in 2012 compared with 2011, partially reflecting higher deferred tax benefits and general rate increases. For the 12 months ended March 31, 2012, AWW's adjusted FFO totaled \$897 million. FFO to debt was 14.5%, compared with 13.4% as of year-end 2011. Debt to EBITDA improved to 5.1x compared with 5.4x as of year-end 2011. Total debt to capital remained around 60% during the same period. Higher capital expenses are significant risks that may prevent

Research Update: American Water Works And Subs Rating Outlook Is Revised To Positive On Stronger Financial Performance; Ratings Affirmed

adequate improvements to the company's financial profile.

Liquidity

The short-term rating on AWW and AWCC is 'A-2' and largely reflects the long-term corporate credit ratings and our view of the company's "adequate" liquidity under Standard & Poor's corporate liquidity methodology, which categorizes liquidity in five standard descriptors. We base our liquidity assessment on the following factors and assumptions:

- AWW's liquidity sources during the next 12 months, including cash, FFO, and credit facility availability, should exceed uses by more than 1.2x. Uses include necessary capital expenditures, debt maturities, and anticipated shareholder distributions.
- Debt maturities are manageable during the next 12 months.
- Liquidity sources would exceed uses even if EBITDA declines by 15%.
- AWW's ability to absorb high-impact, low-probability events with limited need for refinancing, its flexibility to lower capital spending or sell assets, its sound bank relationships, its solid standing in credit markets, and its generally prudent risk management.

In our analysis of liquidity during the next 12 months, we assume about \$1.2 billion of liquidity sources, consisting primarily of FFO and credit facility availability. We estimate use of \$1 billion of liquidity for capital spending, maturing debt, and shareholder distributions.

The company maintains a bank credit facility totaling \$840 million that expires in September 2013. As of March 31, 2012, the company had \$594 million available under the facility. The bank facilities require the parent and the utilities to maintain a minimum total funded debt to capitalization ratio of 70%, with which they comfortably comply.

Outlook

The positive rating outlook on AWW and its subsidiaries reflects our view that we could raise the ratings one notch within the next 12 to 18 months if we see sustained financial performance above our base-case forecast level of adjusted FFO to total debt of 14% and adjusted debt to total capital of about 59%. Fundamental to our forecast is our expectation that the company continues to effectively manage its regulatory relationships to continually achieve constructive regulatory outcomes in its many jurisdictions. We could lower the rating if financial performance stalls or deteriorates, which could result from substantial debt-financing of capital expenditures or acquisitions, such that FFO to debt falls below 9% and debt to capital rises above 65%.

Related Criteria And Research

- Liquidity Descriptors For Global Corporate Issuers, Sept. 28, 2011
- Criteria Methodology: Business Risk/Financial Risk Matrix Expanded, May

Research Update: American Water Works And Subs Rating Outlook Is Revised To Positive On Stronger Financial Performance; Ratings Affirmed

27, 2009

- Analytical Methodology, April 15, 2008
- Ratios And Adjustments, April 15, 2008
- Assessing U.S. Utility Regulatory Environments, Nov. 7, 2007

Ratings List

Ratings Affirmed Outlook Revised		
	To	From
American Water Works Co. Inc.		
Corp. credit rating	BBB+/Positive/A-2	BBB+/Stable/A-2
American Water Capital Corp.		
Corp. credit rating	BBB+/Positive/A-2	BBB+/Stable/A-2
Senior unsecured debt	BBB+	
Commercial paper	A-2	
New Jersey-American Water Co.		
Corp. credit rating	BBB+/Positive/--	BBB+/Stable/--
Senior secured	A	
Recovery rating	1+	
Pennsylvania-American Water Co.		
Corp. credit rating	BBB+/Positive/--	BBB+/Stable/--
Senior secured	A	
Recovery rating	1+	

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STANDARD
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Standard & Poor's Research

January 30, 2012

Summary:

American Water Works Co. Inc.

Primary Credit Analyst:

Manish Consul, New York (1) 212-438-3870; manish_consul@standardandpoors.com

Secondary Contact:

William Ferara, New York (1) 212-438-1776; bill_ferara@standardandpoors.com

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Rationale

Outlook

Related Criteria And Research

Summary:

American Water Works Co. Inc.

Credit Rating: BBB+/Stable/A-2

Rationale

The ratings on Voorhees, N.J.-based American Water Works Co. Inc. (AWW) and its Voorhees, N.J.-based funding subsidiary American Water Capital Corp. (AWCC) reflect the consolidated credit quality of AWW. A favorable competitive position, a diverse and supportive regulatory environment, and a stable, above-average service territory support AWW's excellent business risk profile. AWW's regulatory framework includes reasonably allowed returns on equity and various cost-recovery mechanisms, including incentives for infrastructure improvements.

The company's geographic diversity provides it with some market, cash flow, and regulatory diversification. We view AWW's operating risks associated with its nonregulated operations as fairly low. AWW's aggressive financial profile, elevated capital-spending requirements for infrastructure replacement, increased costs of compliance with water quality standards, and the company's reliance on acquisitions to provide growth partly offset these strengths.

AWW provides regulated water and wastewater services to about 3.3 million customers in 18 states. The company's regulated utility subsidiaries represent about 89% of total revenues, but have provided more than 95% of adjusted EBITDA for the past three years. The company's nonregulated subsidiaries engage in water and wastewater facility management and maintenance, as well as design and construction consulting services related to water and wastewater plants. We view these nonregulated segments as having modest incremental risk for AWW, due to their lack of cash flow contribution and modest expected capital requirements.

A state commission regulates each of AWW's regulated subsidiaries, which supports revenue and cash flow stability. The average allowed return on equity (ROE) in AWW's seven largest jurisdictions, which account for about 80% of consolidated revenues, is about 10%. This is similar to the average allowed ROE in the water sector. In a number of jurisdictions, which represent about 50% of consolidated revenues, the utility recovers replacement capital spending between rate cases up to a stated percentage. The importance of infrastructure surcharge mechanisms has increased, given AWW's capital program of about \$1 billion per year. Certain states also allow for surcharges related to the cost of power, chemicals, and purchased water. For the next few years, we expect AWW to file additional rate cases and request additional recovery mechanisms to cover rising operating costs, capital expenditures, and pension and other postretirement obligations.

The U.S. Environmental Protection Agency believes that infrastructure replacement needs for water systems are significant over the next 20 years. AWW estimates that it will need to spend about \$1 billion annually in each of the next three years for replacement of infrastructure, new facilities to comply with water quality standards, and projects to enhance reliability, quality of service, and efficiency. AWW's reliability of supply is high, as the company owns a substantial number of treatment facilities for surface and groundwater treatment, and the majority of supply comes from surface and groundwater. In 2011, surface water provided 65% of the company's water supply, groundwater 28%, and it purchased about 7%.

Consolidated financial metrics are improving. In 2011, regulatory commissions granted AWW about \$118 million

Summary: American Water Works Co. Inc.

of general rate increases in various states, including \$99 million in New Jersey, Pennsylvania, and Arizona. The company asks for rate increases to cover rising operating costs, capital expenditures, and pension and other postretirement obligations.

For the 12 months ended Sept. 30, 2011, AWW's adjusted funds from operations (FFO) totaled \$895 million. FFO to debt was 13.9%, which is acceptable for the rating. Total debt to capital remained around 60% during the same period. Substantially higher capital expenses are significant risks that may prevent adequate improvements to the company's financial profile. Over the next 12 months we expect FFO to improve slightly due to additional rate increases, although a sustained improvement in both consolidated FFO to debt and debt to total capital may not materialize, given the company's financing needs.

In March 2011, AWW announced that it has entered into an agreement to sell to EPCOR Water (USA) its regulated operations in Arizona and New Mexico for an estimated \$470 million. We view the transaction as marginally beneficial to AWW's business and risk profile, albeit not material enough to influence the outlook. AWW will use a portion of the sale proceeds to reduce debt (less than 5% of consolidated debt). Arizona and New Mexico are some of the relatively weaker and smaller states that AWW serves, totaling less than 5% of cash flows. Similarly, in July 2011, AWW announced the sale of its regulated operations in Ohio to Aqua America Inc. for \$120 million and a purchase of Aqua America's regulated operations in New York for about \$70 million. These announcements do not affect AWW's ratings.

Liquidity

The short-term ratings on AWW and AWCC are 'A-2'. We view the company's overall liquidity as adequate. For the upcoming 12 months, we expect liquidity sources to exceed uses by more than 1.2x. Cash sources consist of projected FFO of about \$900 million and revolver availability of \$259 million. As of Sept. 30, 2011, there were no borrowings outstanding on the revolvers. However, we discount the borrowing availability on the revolver by about \$425 million to account for commercial paper and other short-term borrowings and do not give credit to a portion of the credit facility that expires within the next 12 months. Cash uses consist of expected total capital spending of about \$1 billion in 2012, although mandatory and compliance-related expenses are only a fraction of that amount. Other cash uses include dividend distributions of about \$165 million, debt maturities of about \$34 million and pension plan contributions of about \$150 million. Other potential cash uses, such as working capital needs are not significant.

Outlook

The stable outlook on AWW and AWCC reflects our expectation that the company will receive supportive rate increases over the next three years to address rising costs and increased capital spending plans. The current rating can accommodate some acquisitions, assuming management funds the acquisitions in a balanced manner. We could lower the rating if financial performance stalls or deteriorates, which could result from substantial debt-financing of capital expenditures or acquisitions, such that FFO to debt falls below 9% and debt to capital rises above 65%. We could also lower the rating if rate increases or allowed returns are set at levels substantially below the requested figures, and if the company takes significantly longer to resolve rate case filings than we currently expect. We could raise the rating if higher-than-expected rate increases or favorable cost recovery mechanisms allow for a sustained adjusted FFO to total debt ratio of 12% to 14% and adjusted leverage between 50% and 55%.

Summary: American Water Works Co. Inc.

Related Criteria And Research

- Top 10 Investor Questions: U.S. Investor-Owned Water Companies, published Jan. 25, 2010.
- Industry Report Card: U.S. Investor-Owned Water Utilities Continue to Display Rating Stability, published Jan. 12, 2010.
- Criteria: Key Credit Factors: Business And Financial Risks In the Investor-Owned Utilities Industry, published Nov. 26, 2008.

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STANDARD
& POOR'S

Standard & Poor's Research

January 28, 2011

Summary:

American Water Works Co. Inc.

Primary Credit Analyst:

William Ferara, New York (1) 212-438-1776; bill_ferara@standardandpoors.com

Secondary Contact:

Michael V Grande, New York (1) 212-438-2242; michael_grande@standardandpoors.com

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Rationale

Outlook

Related Criteria And Research

Summary:

American Water Works Co. Inc.

Credit Rating: BBB+/Stable/A-2

Rationale

The ratings on American Water Works Co. Inc. (AWW) and its funding subsidiary American Water Capital Corp. (AWCC) reflect the consolidated credit quality of AWW. A favorable competitive position, a diverse and supportive regulatory environment, and a stable, above-average service territory support AWW's excellent business risk profile. AWW's regulatory framework includes reasonably allowed returns on equity and various cost-recovery mechanisms, including incentives for infrastructure improvements. The company's geographic diversity provides it with some market, cash flow, and regulatory diversification. We view AWW's operating risks associated with its nonregulated operations as fairly low. AWW's aggressive financial profile, elevated capital-spending requirements for infrastructure replacement, increased compliance costs with water-quality standards, and the company's reliance on acquisitions to provide growth partly offset these strengths.

AWW provides regulated water and wastewater services to more than 3.3 million customers in 20 states. The company's regulated utility subsidiaries represent about 90% of total revenues, but have provided more than 95% of adjusted EBIT for the past three years. The company's nonregulated subsidiaries engage in water and wastewater facility management and maintenance, as well as design and construction consulting services related to water and wastewater plants. We view these nonregulated segments as having modest incremental risk for AWW due to their lack of cash flow contribution and modest expected capital requirements.

A state commission regulates each of AWW's regulated subsidiaries, which supports revenue and cash flow stability. The average allowed return on equity (ROE) in AWW's six largest jurisdictions, which account for about 75% of consolidated revenues, is about 10.3%. This is similar to the average allowed ROE in the water sector. In a number of jurisdictions, which represent about 50% of consolidated revenues, the utility recovers replacement capital spending between rate cases up to a stated percentage. The importance of infrastructure surcharge mechanisms has increased given AWW's capital program of \$750 million to \$1 billion per year. Certain states also allow for surcharges related to the cost of power, chemicals, and purchased water. For the next few years, we expect AWW to file additional rate cases and request additional recovery mechanisms to cover rising operating costs, capital expenditures, and pension and other postretirement obligations.

The U.S. Environmental Protection Agency believes that infrastructure replacement needs for water systems are significant over the next 20 years. AWW estimates that it will need to spend about \$1 billion annually in each of its next three years for replacement of infrastructure, new facilities to comply with water quality standards, and projects to enhance reliability, quality of service, and efficiency. AWW's reliability of supply is high, as the company owns a substantial amount of treatment facilities for surface and groundwater treatment and the majority of supply is sourced from surface and groundwater. In 2009, surface water provided 65% of the company's water supply, groundwater 29%, and about 6% was purchased.

Consolidated financial metrics are improving, and are acceptable for the 'BBB+' rating. In 2010, regulatory commissions granted AWW about \$75 million of rate increases in New Jersey, Kentucky, and Arizona; the company

Summary: American Water Works Co. Inc.

asks for rate increases to cover rising operating costs, capital expenditures, and pension and other postretirement obligations.

For the 12 months ended Sept. 30, 2010, AWW's adjusted funds from operations (FFO) totaled \$812 million. FFO to debt was 12.9%, which is acceptable for the rating. Total debt to capital remained at 60% as of Sept. 30, 2010. The uncertainties associated with the timing of the company's rate cases and the substantially higher capital plans are significant risks that may prevent adequate improvements to the company's financial profile. We expect FFO to benefit from additional rate increases, although a sustained improvement in consolidated FFO to debt may not materialize given the company's financing needs.

AWW recently announced that it has entered into an agreement to sell to EPCOR Water (USA) its regulated operations in Arizona and New Mexico for an estimated \$470 million. AWW's ratings are unaffected by the announcement. We view the transaction as marginally beneficial to AWW's business and risk profile, albeit not material enough to influence the outlook. AWW will use a portion of the sale proceeds to reduce debt (less than 5% of consolidated debt). Arizona and New Mexico are AWW's relatively weaker and smaller states that it serves, totaling less than 5% of cash flows.

Short-term credit factors

The short-term ratings on AWW and AWCC are 'A-2'. We view the company's overall liquidity as adequate. For the upcoming 12 months we expect liquidity sources to exceed uses by about 1.3x. Cash sources consist of projected FFO of about \$640 million and revolver availability of \$840 million. Cash uses consist of high expected capital spending of about \$900 million, debt maturities of about \$40 million, and dividend distributions of about \$150 million. Other potential cash uses, such as working capital needs, are not significant. In absolute dollars, we expect cash sources to exceed uses by roughly \$350 million over the next 12 months. This difference will remain positive even if EBITDA falls by more than 30%, which we would not anticipate given the company's regulated cash flows.

Outlook

The stable outlook on AWW and AWCC reflects our expectation that the company will receive supportive rate increases over the next three years to address rising costs and increased capital spending plans. The current rating can accommodate some acquisitions, assuming management funds the acquisitions in a balanced manner. We could lower the rating if financial performance stalls or deteriorates, which could result from substantial debt-financing of capital expenditures or acquisitions, such that FFO to debt falls below 9% and debt to capital rises above 65%. We could also lower the rating if rate increases or allowed returns are set at levels substantially below the requested figures and rate case filings take significantly longer to be resolved than currently expected. We could raise the rating if higher-than-expected rate increases or favorable cost recovery mechanisms allow for a sustained adjusted FFO to total debt ratio of 12% and adjusted leverage between 50% and 55%.

Related Criteria And Research

- Criteria: Key Credit Factors: Business And Financial Risks In the Investor-Owned Utilities Industry, published Nov. 26, 2008.
- Top 10 Investor Questions: U.S. Investor-Owned Water Companies, published Jan. 25, 2010.
- Industry Report Card: U.S. Investor-Owned Water Utilities Continue to Display Rating Stability, published Jan.

Summary: American Water Works Co. Inc.

12, 2010.

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**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: **Scott W. Rungren**

26. CC – Reference: Cost of Capital. Please provide the S&P and Moody's credit and bond ratings for AWWC and KAWC for the past five years.

Response:

Issuer	CUSIP	Coupon	Issue Date	Maturity	Moody's	S&P's
American Water Capital Corp	03040WAA3	6.085%	10/22/2007	10/15/2017	Baa2	BBB+
American Water Capital Corp	03040WAC9	6.593%	10/22/2007	10/15/2037	Baa2	BBB+
American Water Capital Corp	03040WAE5	10.000%	11/26/2008	12/1/2038	Baa2	BBB+
American Water Capital Corp	03040WAF2	8.250%	2/4/2009	12/1/2038	Baa2	BBB+
American Water Capital Corp	03040WAG0	6.000%	12/4/2009	12/1/2039	Baa2	BBB+
American Water Capital Corp	455058AD9	4.850%	9/16/2010	9/01/2040	Baa2	BBB+
American Water Capital Corp	03040WAH8	6.000%	12/15/2010	12/1/2040	Baa2	BBB+
American Water Capital Corp	03040WAJ4	4.300%	12/17/2012	12/1/2042	Baa2	BBB+

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Melissa L. Schwarzell**

27. CC – Reference: Cost of Capital. Please provide the breakdown in the expected return on pension plan assets for KAWC. Specifically, please provide the expected return on different assets classes (bonds, US stocks, international stocks, etc.) used in determining the expected return on plan assets. Please provide all associated source documents and work papers.

Response:

Pension assets are forecasted to increase at a rate of 7.49%. Please see the attached file for the support documents requested.



AMERICAN WATER

**2012 Projected Investment returns
AWW Pension**

Asset Class	Asset Allocation	Callan Capital market Assumptions*	Projected Returns
S&P 500	36%	8.95%	3.22%
Small Cap	12%	10.25%	1.23%
International	22%	9.30%	2.05%
Fixed Income	30%	3.30%	0.99%
Expected return on Plan Assets	100%		7.49%

* Used 1-year arithmetic return for EROA Calculation

2012 Capital Market Expectations Return and Risk

Summary of Callan's Long-Term Capital Market Projections (2012 - 2021)

Asset Class	Index	PROJECTED RETURN			PROJECTED RISK		2011 - 2020	
		1-Year Arithmetic	10-Year Geometric*	Real	Standard Deviation	Projected Yield	10-Year Geometric*	Standard Deviation
Equities								
Broad Domestic Equity	Russell 3000	9.20%	7.75%	5.25%	18.70%	2.00%	8.00%	18.10%
Large Cap	S&P 500	8.95%	7.60%	5.10%	18.00%	2.20%	7.85%	17.25%
Small/Mid Cap	Russell 2500	10.25%	7.90%	5.40%	23.00%	1.20%	8.25%	23.00%
International Equity	MSCI EAFE	9.30%	7.60%	5.10%	20.00%	2.00%	7.85%	19.75%
Emerging Markets Equity	MSCI EMF	11.50%	8.00%	5.50%	27.75%	0.00%	8.35%	27.50%
Global ex-US Equity	MSCI ACWI ex-US	9.85%	7.90%	5.40%	21.15%	1.50%	8.20%	20.90%
Fixed Income								
Defensive	BC Govt 1-3	3.00%	3.00%	0.50%	2.50%	3.00%	3.25%	2.50%
Domestic Fixed	BC Aggregate	3.30%	3.25%	0.75%	4.25%	3.30%	3.75%	4.50%
TIPS	BC TIPS	3.10%	3.00%	0.50%	5.60%	3.10%	3.50%	5.90%
Long Duration	BC Long Govt/Credit	4.10%	3.45%	0.95%	11.80%	4.10%	4.00%	11.15%
High Yield	BC High Yield	6.00%	5.35%	2.85%	12.50%	6.00%	5.60%	11.55%
Non-US Fixed	Citi Non-US Govt	3.25%	2.85%	0.35%	9.50%	3.25%	3.35%	9.70%
Other								
Real Estate	Callan Real Estate	7.65%	6.40%	3.90%	16.95%	5.00%	6.75%	16.35%
Private Equity	VE Post Venture Cap	13.05%	8.80%	6.30%	30.60%	0.00%	9.00%	30.00%
Hedge Funds	Callan Hedge FoF	5.90%	5.55%	3.05%	10.00%	0.00%	5.90%	10.00%
Commodities	DJ-UBS Commodity	4.75%	3.25%	0.75%	17.90%	2.75%	3.75%	24.00%
Cash Equivalents	90-Day T-Bill	2.75%	2.75%	0.25%	0.90%	2.75%	3.00%	0.90%
Inflation								
	CPI-U	2.50%	2.50%		1.40%		2.50%	1.40%

* Geometric returns are derived from arithmetic returns and the associated risk (standard deviation).

Source: Callan

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren/Gary VerDouw**

28. CC – Reference: Cost of Capital. Please provide the authorized and earned return on common equity over the past five years (2008, 2009, 2010, 2011, and 2012) for the KAWC. Please show the figures used in calculating the earned return on common equity for each year, including all adjustments to net income and/or common equity. Please provide copies of the source documents, work papers, and data in both hard copy and electronic (Microsoft Excel) formats, with all data and formulas intact.

Response:

Please see the Excel file and supporting data contained in the attachment.

The source of the net income and common equity values used for 2007-2011 is the audited financial statements of KAW, which includes non-utility income and expenses. The authorized return on common equity (ROE) was taken from Commission Orders of previous KAWC rate cases, which can be found on the KY PSC website. The authorized ROE was assumed to be 10% in 2008 and 2009, as it was carried forward from the Company's 2004 rate case through 2009. The Company's rate cases in 2007 and 2008 resulted in settlements and, therefore, a specific cost of equity capital was not addressed.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Linda C. Bridwell

29. CC – Reference: Cost of Capital. Please provide:

- a. A copy of the financial statements (balance sheet, income statement, statement of cash flows, and the notes to the financial statements) for KAWC for 2012 in both hard copy and electronic (Microsoft Excel) format, with all data and formulas intact, when available.
- b. Please provide copies of the 2010 and 2011 financial statements in electronic (Microsoft Excel) formats, with all data and formulas intact.

Response:

- a. The audited financial statements for 2012 are not yet complete and will not be available until the end of March. The statements will be forwarded upon completion at that time.
- b. Please see the attached.

Kentucky-American Water Company, Inc.

**(a wholly-owned subsidiary of
American Water Works Company, Inc.)**

Financial Statements

As of and for the years ended December 31, 2011 and 2010



Report of Independent Auditors

To the Board of Directors and Stockholder of
Kentucky-American Water Company

In our opinion, the accompanying balance sheets and statements of capitalization and the related statements of operations, of changes in common stockholder's equity and of cash flows present fairly, in all material respects, the financial position of Kentucky-American Water Company (a wholly-owned subsidiary of American Water Works Company, Inc.) at December 31, 2011 and 2010, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

A handwritten signature in black ink that reads "PricewaterhouseCoopers LLP". The signature is written in a cursive, flowing style.

March 26, 2012

KENTUCKY-AMERICAN WATER COMPANY**Balance Sheets****December 31, 2011 and 2010**

(Dollars in thousands)

Assets		
	2011	2010
Property, plant and equipment		
Utility plant - at original cost, net of accumulated depreciation	\$ 485,717	\$ 472,303
Utility plant acquisition adjustments	251	263
Nonutility property	250	270
Total property, plant and equipment	<u>486,218</u>	<u>472,836</u>
Current assets		
Cash and cash equivalents	282	269
Customer accounts receivable	2,826	3,011
Allowance for uncollectible accounts	(543)	(407)
Unbilled revenues	3,893	4,412
State income tax receivable	1,567	286
Federal income tax refund due from affiliated company	6,369	13,197
Materials and supplies	691	747
Other	478	868
Total current assets	<u>15,563</u>	<u>22,383</u>
Regulatory and other long-term assets		
Regulatory assets	11,784	11,846
Prepaid pension expense	1,332	-
Other	52	52
Total regulatory and other long-term assets	<u>13,168</u>	<u>11,898</u>
Total assets	<u>\$ 514,949</u>	<u>\$ 507,117</u>

The accompanying notes are an integral part of these financial statements.

KENTUCKY-AMERICAN WATER COMPANY**Balance Sheets****December 31, 2011 and 2010**

(Dollars in thousands)

	<u>2011</u>	<u>2010</u>
Capitalization and Liabilities		
Capitalization		
Common stockholder's equity	\$ 155,274	\$ 150,716
Preferred stock without mandatory redemption requirements	1,446	1,446
Long-term debt, excluding current portion		
Preferred stock with mandatory redemption requirements	4,500	4,500
Long-term debt	187,890	167,890
Total capitalization	<u>349,110</u>	<u>324,552</u>
Current liabilities		
Notes payable - affiliated company	11,509	15,517
Current portion of long-term debt	-	3,100
Accounts payable	6,453	6,161
Accrued interest	1,926	1,868
Accrued taxes	3,992	3,123
Other	4,020	5,256
Total current liabilities	<u>27,900</u>	<u>35,025</u>
Regulatory and other long-term liabilities		
Deferred income taxes	57,597	69,176
Advances for construction	12,675	12,774
Deferred investment tax credits	879	963
Regulatory liability - cost of removal	13,476	12,449
Regulatory liability - debt extinguishment	283	413
Accrued pension expense	-	729
Accrued postretirement benefit expense	552	504
Other tax liabilities	2,771	1,944
Other	68	63
Total regulatory and other long-term liabilities	<u>88,301</u>	<u>99,015</u>
Contributions in aid of construction	49,638	48,525
Commitments and contingencies (See Note 17)	<u>-</u>	<u>-</u>
Total capitalization and liabilities	<u>\$ 514,949</u>	<u>\$ 507,117</u>

The accompanying notes are an integral part of these financial statements.

KENTUCKY-AMERICAN WATER COMPANY
Statements of Income
For the Years Ended December 31, 2011 and 2010
(Dollars in thousands)

	<u>2011</u>	<u>2010</u>
Operating revenues	\$ 83,301	\$ 74,055
Operating expenses		
Operation and maintenance	33,024	33,992
Depreciation	8,915	6,690
Amortization	2,182	2,182
General taxes	5,102	4,804
Total operating expenses	<u>49,223</u>	<u>47,668</u>
Operating income	<u>34,078</u>	<u>26,387</u>
Other income (expenses)		
Interest on long-term debt	(10,864)	(6,862)
Interest on short-term debt to affiliated company	(73)	(114)
Allowance for other funds used during construction	281	2,244
Allowance for borrowed funds used during construction	132	1,127
Amortization of debt issuance costs	(86)	(129)
Other, net	(394)	(539)
Total other expenses	<u>(11,004)</u>	<u>(4,273)</u>
Income before income taxes	23,074	22,114
Provision for income taxes	<u>4,944</u>	<u>8,862</u>
Net income	<u>18,130</u>	<u>13,252</u>
Dividends on preferred stock	<u>78</u>	<u>78</u>
Net income available to common stockholder	<u>\$ 18,052</u>	<u>\$ 13,174</u>

The accompanying notes are an integral part of these financial statements.

KENTUCKY-AMERICAN WATER COMPANY**Statements of Cash Flows****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

	<u>2011</u>	<u>2010</u>
Cash flows from operating activities		
Net income	\$ 18,130	\$ 13,252
Adjustments		
Depreciation and amortization	11,097	8,872
Amortization of debt issuance costs	86	129
(Credits) provision for deferred income taxes	(11,750)	21,927
Amortization of deferred investment tax credits	(84)	(85)
Provision for losses on accounts receivable	602	526
Allowance for other funds used during construction	(281)	(2,244)
Pension and non-pension post retirement benefits	1,849	2,363
Other, net	(425)	(2,039)
Changes in assets and liabilities		
Accounts receivable and unbilled revenues	238	(1,976)
Federal income tax-affiliated company	7,895	(12,468)
Other current assets	(759)	1,220
Pension and non-pension post retirement benefits contribution	(3,910)	(2,988)
Accounts payable	1,095	(3,145)
Accrued taxes	956	270
Other current liabilities	(1,178)	(80)
Net cash provided by operating activities	<u>23,561</u>	<u>23,534</u>
Cash flows from investing activities		
Capital expenditures	(24,252)	(47,747)
Removal costs from property, plant and equipment retirements, net of salvage	(845)	(227)
Net proceeds from notes receivable - affiliated company	-	3,443
Net cash used in investing activities	<u>(25,097)</u>	<u>(44,531)</u>
Cash flows from financing activities		
Proceeds from issuance of long-term debt to affiliated company	20,000	26,000
Repayment of long-term debt to affiliate	(3,100)	(3,100)
Debt issuance costs to affiliate	-	(321)
Net repayments of short-term borrowings-affiliated company	(4,008)	(11,796)
Advances and contributions for construction, net of refunds of \$716 in 2011 and \$1,548 in 2010	2,308	1,326
Capital contributions	-	18,000
Redemption of preferred stock	-	(7)
Dividends paid	(13,651)	(9,012)
Net cash provided by financing activities	<u>1,549</u>	<u>21,090</u>
Net increase in cash and cash equivalents	13	93
Cash and cash equivalents at beginning of year	<u>269</u>	<u>176</u>
Cash and cash equivalents at end of year	<u>\$ 282</u>	<u>\$ 269</u>
Cash paid (received) during the year for:		
Interest, net of capitalized amount	\$ 11,086	\$ 10,517
Income taxes, net of refunds of \$0 in 2011 and \$2,076 in 2010	\$ 10,028	\$ (1,626)
Non-cash investing activity		
Capital expenditures acquired on account but unpaid as of year end	\$ 3,220	\$ 4,018
Non-cash financing activity		
Capital contribution (See Note 13)	\$ 79	\$ 30

The accompanying notes are an integral part of these financial statements.

KENTUCKY-AMERICAN WATER COMPANY**Statements of Capitalization****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

	Call Price Per Share	2011	2010
Stockholder's equity			
Common stock - no par value, authorized 2,000,000 shares 1,567,391 shares issued and outstanding in 2011 and 2010	\$	36,569	\$ 36,569
Paid-in capital		74,768	74,689
Retained earnings		43,937	39,458
Total common stockholder's equity		<u>155,274</u>	<u>150,716</u>
Preferred stocks - \$100 par value			
Cumulative preferred stocks without mandatory redemption requirements:			
5.75% series, 3,888 shares outstanding in 2011 and 2010	\$ 101.00	389	389
5.50% series, 4,860 shares outstanding in 2011 and 2010	\$ 100.50	486	486
5.00% series, 5,708 shares outstanding in 2011 and 2010	\$ 100.00	571	571
		<u>1,446</u>	<u>1,446</u>
Long-term debt			
Preferred stocks - \$100 par value			
Cumulative preferred stocks with mandatory redemption requirements:			
8.47% series, 45,000 shares outstanding in 2011 and 2010 due for redemption 2036	\$ 100.00	4,500	4,500
		<u>4,500</u>	<u>4,500</u>
General mortgage bonds:			
6.96% series due 2023		7,000	7,000
7.15% series due 2027		7,500	7,500
6.99% series due 2028		9,000	9,000
Notes payable to affiliate:			
6.87% series due 2011		-	3,100
6.593% series due 2037		47,000	47,000
6.25% series A due 2039		45,390	45,390
5.625% series B due 2039		26,000	26,000
5.375% series due 2040		26,000	26,000
5.05% series due 2037		20,000	-
		<u>192,390</u>	<u>175,490</u>
Less: Current portion of long-term debt and mandatory redeemable preferred stock		<u>-</u>	<u>(3,100)</u>
Total long-term debt and mandatory redeemable preferred stock, net of current portion		<u>192,390</u>	<u>172,390</u>
Total capitalization	\$	<u>349,110</u>	\$ <u>324,552</u>

The accompanying notes are an integral part of these financial statements.

KENTUCKY-AMERICAN WATER COMPANY
Statements of Changes in Common Stockholder's Equity
For the Years Ended December 31, 2011 and 2010
(Dollars in thousands, except per share amounts)

	<u>Common Stock</u>		<u>Paid-in Capital</u>	<u>Retained Earnings</u>	<u>Total</u>
	<u>Shares</u>	<u>Par Value</u>			
Balance at December 31, 2009	1,567,391	\$ 36,569	\$ 56,656	\$ 35,218	\$ 128,443
Net income	-	-	-	13,252	13,252
Capital contributions	-	-	18,030	-	18,030
Gain on redemption of preferred stock	-	-	3	-	3
Preferred stock dividends	-	-	-	(78)	(78)
Common stock dividends	-	-	-	(8,934)	(8,934)
Balance at December 31, 2010	1,567,391	\$ 36,569	\$ 74,689	\$ 39,458	\$ 150,716
Net income	-	-	-	18,130	18,130
Capital contributions	-	-	79	-	79
Preferred stock dividends	-	-	-	(78)	(78)
Common stock dividends	-	-	-	(13,573)	(13,573)
Balance at December 31, 2011	<u>1,567,391</u>	<u>\$ 36,569</u>	<u>\$ 74,768</u>	<u>\$ 43,937</u>	<u>\$ 155,274</u>

The accompanying notes are an integral part of these financial statements.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 1: Organization and Operation

Kentucky-American Water Company (the "Company") provides water service to approximately 122,800 (unaudited) customers and wastewater service to approximately 700 (unaudited) customers. These services are provided in 12 (unaudited) communities located in 10 (unaudited) counties in the state of Kentucky. As a public utility operating in Kentucky, the Company functions under rules and regulations prescribed by the Kentucky Public Service Commission (the "Commission"). The Company is a wholly-owned subsidiary of American Water Works Company, Inc. ("AWW").

Note 2: Significant Accounting Policies*Use of Estimates*

The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates. The Company considers benefit plans assumptions, the carrying value of long-lived assets, including regulatory assets and liabilities, revenue recognition and accounting for income taxes to be its critical accounting estimates. The Company's significant estimates that are particularly sensitive to change in the near term are amounts reported for pension and other postemployment benefits and contingency-related obligations.

Regulation

The Company is subject to regulation by the Commission and the local governments of the State of Kentucky (collectively the "Regulators"). These Regulators have allowed recovery of costs and credits which the Company has recorded as regulatory assets and liabilities. Accounting for future recovery of costs and credits as regulatory assets and liabilities is in accordance with authoritative guidance provided by U.S. GAAP. Regulated utilities defer costs and credits on the balance sheet as regulatory assets and liabilities when it is probable that those costs and credits will be recognized in the rate making process in a period different from the period in which they would have been reflected in operations by a market based company. These deferred regulatory assets and liabilities are then reflected in the statement of income in the period in which the costs and credits are reflected in the rates charged for service.

Property, Plant and Equipment

Property, plant and equipment consist primarily of utility plant. Additions to utility plant and replacements of retirement units of property are capitalized. Costs include material, direct labor and such indirect items as engineering and supervision, payroll taxes and benefits, transportation and an allowance for funds used during construction. Repairs and maintenance are charged to current operations.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 2 (continued):

When units of property are replaced, retired or abandoned, the recorded value thereof is credited to the asset account and charged to accumulated depreciation. To the extent the Company recovers cost of removal or other retirement costs through rates, a regulatory asset or liability may occur where timing differences exist between when the Company incurs costs of removal and when the Company recovers such costs in rates. Removal costs, net of salvage, are recorded as reductions to the regulatory liability or an increase to the regulatory asset, as applicable.

The cost of utility property, plant and equipment is depreciated using the straight-line average remaining life using the composite method.

Computer software is either purchased or internally developed and their costs are capitalized as a unit of property. The assets were fully amortized at December 31, 2011 and 2010.

Utility plant acquisition adjustments represent the difference between the fair value of plant at the date of purchase and its original cost when first devoted to public service (less accumulated depreciation) and are amortized to expense over the remaining useful lives of the corresponding purchased plant assets. Amortization of utility plant acquisition adjustments was \$12 and \$21 for 2011 and 2010, respectively. The remaining lives range from 29 to 34 years.

Cash and Cash Equivalents

Substantially all of the Company's cash is invested in interest-bearing accounts. The Company considers all highly liquid investments with maturities of three months or less when purchased to be cash equivalents. There were no cash equivalents held at December 31, 2011 or 2010.

Accounts Receivable

The majority of the Company's accounts receivable is due from utility customers. Customer accounts receivable represent amounts billed to the Company's water and wastewater customers on a cycle basis. Credit is extended based on the guidelines of the applicable Regulators and generally, collateral is not required.

Allowance for Uncollectible Accounts

Allowance for uncollectible accounts are maintained for estimated probable losses resulting from the Company's inability to collect receivables from customers. Accounts that are outstanding longer than the payment terms are considered past due. A number of factors are considered in determining the allowance for uncollectible accounts, including the length of time receivables are past due and previous loss history. The Company writes-off accounts when they become uncollectible.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 2 (continued):

The following table summarizes the changes in the Company's allowance for uncollectible accounts:

	<u>2011</u>	<u>2010</u>
Balance as of January 1	\$ 407	\$ 277
Provision charged to expense	602	526
Accounts written-off	(562)	(574)
Recoveries of accounts previously written-off	96	178
Balance as of December 31	<u>\$ 543</u>	<u>\$ 407</u>

Materials and Supplies

Materials and supplies are stated at the lower of cost or net realizable value. Cost is determined using the average cost method.

Advances and Contributions in Aid of Construction

The Company may receive advances and contributions from customers, home builders, real estate developers, and others to fund construction necessary to extend service to new areas. Advances for construction are refundable for limited periods of time as new customers begin to receive service or other contractual obligations are fulfilled. Advances which are no longer refundable are reclassified to contributions in aid of construction. Contributions in aid of construction are permanent collections of plant assets or cash for a particular construction project. For ratemaking purposes, the amount of such advances and contributions generally serves as a rate base reduction, since they represent non-investor supplied funds.

The Company depreciates utility plant funded by contributions. The Company amortizes these amounts as a reduction to depreciation expense, producing a result which is functionally equivalent to reducing the original cost of the utility plant for the contributions. Amortization of contributions in aid of construction was \$1,390 and \$1,418 for the years ended December 31, 2011 and 2010, respectively. For the years ended December 31, 2011 and 2010, non-cash advances and contributions received were \$95 and \$145, respectively.

Recognition of Revenues

Revenues are recognized as water and wastewater services are provided and include amounts billed to customers on a cycle basis and unbilled amounts based on estimated usage from the date of the latest meter reading to the end of the accounting period. Other operating revenues are recognized when services are performed.

The Company accounts for sales tax collected from customers and remitted to taxing authorities on a net basis.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 2 (continued):*Income Taxes*

AWW and its subsidiaries participate in a consolidated federal income tax return for U.S. tax purposes. Members of the consolidated group are charged with the amount of federal income tax expense determined as if they filed separate returns. Federal income tax expense for financial reporting purposes is provided on a separate return basis.

Certain income and expense items are accounted for in different time periods for financial reporting than for income tax reporting purposes. Deferred income taxes have been provided on the difference between the tax basis of assets and liabilities and the amounts at which they are carried in the financial statements. These deferred income taxes are based on the enacted tax rates anticipated to be in effect when such temporary differences are projected to reverse. Anticipated tax rates are the currently enacted tax rates, as the Company is not aware of any tax rate changes. In addition, regulatory assets and liabilities are recognized for the effect on revenues expected to be realized as the tax effects of temporary differences previously flowed through to customers reverse.

Investment tax credits have been deferred and are being amortized to income over the average estimated service lives of the related assets.

Allowance for Funds Used During Construction ("AFUDC")

AFUDC is a non-cash credit to income with a corresponding charge to utility plant, which represents the cost of borrowed funds and a return on equity funds devoted to plant under construction. AFUDC is recorded to the extent permitted by the Regulators.

Environmental Costs

The Company's water and wastewater operations are subject to federal, state, and local requirements relating to environmental protection, and as such the Company periodically becomes subject to environmental claims in the normal course of business. Environmental expenditures that relate to current operations or provide a future benefit are expensed or capitalized as appropriate. Remediation costs that relate to an existing condition caused by past operations are accrued when it is probable that these costs will be incurred and can be reasonably estimated. There were no remediation costs accrued at December 31, 2011 and 2010.

Long-Lived Assets

Long-lived assets and certain identifiable intangible assets held and used by the Company are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. If the sum of the future cash flows expected to result from the use of the assets and their eventual disposition is less than the carrying amount of the assets, an impairment loss is recognized. Measurement of an impairment loss would be based on the fair value of the assets. A regulatory asset is charged to earnings if and when future recovery in rates of that asset is no longer probable.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 2 (continued):*New Accounting Standards*

The following recently announced accounting standards have been adopted by the Company and have been included in the results of operations, financial position or footnotes of the accompanying Financial Statements:

Revenue arrangements with Multiple Deliverables

In October 2009, the Financial Accounting Standards Board (“FASB”) issued authoritative guidance that amends existing guidance for identifying separate deliverables in a revenue-generating transaction where multiple deliverables exist, and provides guidance for allocating and recognizing revenue based on those separate deliverables. The guidance is expected to result in more multiple-deliverable arrangements being separable than under current guidance. This guidance is effective for the Company beginning on January 1, 2011 and is required to be applied prospectively to new or significantly modified revenue arrangements. The adoption of this guidance did not have a significant impact on the Company’s results of operations, financial position or cash flows.

Intangibles – Goodwill

In December 2010, the FASB issued authoritative guidance that modifies step 1 of the goodwill impairment test for reporting units with zero or negative carrying amounts. The update requires that for those reporting units, an entity is required to perform step 2 of the goodwill impairment test if it is more likely than not that a goodwill impairment exists. In determining whether it is more likely than not that goodwill impairment exists, an entity should consider whether there are any adverse qualitative factors indicating that impairment may exist. Existing authoritative guidance requires that goodwill of a reporting unit be tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. This guidance is effective for the Company beginning on January 1, 2011. The adoption of this update did not have a significant impact on the Company’s results of operations, financial position or cash flows.

The following recently issued accounting standards are not yet required to be adopted by the Company or included in the results of operations or financial position of the Company:

Fair Value Measurements

In May 2011, the FASB issued updated accounting guidance related to fair value measurements and disclosures that result in common fair value measurements and disclosures between U.S. GAAP and International Financial Reporting Standards. This new guidance amends current fair value measurement and disclosure guidance to increase transparency around valuation inputs and investment categorization. This guidance is effective for interim and annual periods beginning after December 15, 2011. The new guidance is to be adopted prospectively and early adoption is not permitted. The Company does not expect the adoption of this guidance to have a significant impact on the Company’s results of operations, financial position or cash flows.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**(Dollars in thousands, except per share amounts)

Note 2 (continued):*Testing Goodwill for Impairment*

In September 2011, the FASB updated the accounting guidance related to testing goodwill for impairment. This update permits an entity to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test that is currently in place. Under the new guidance, an entity will not be required to calculate the fair value of a reporting unit unless the entity determines, based on the qualitative assessment, that it is more likely than not that its fair value is less than its carrying amount. This update is effective for annual and interim goodwill impairment tests performed in fiscal years beginning after December 15, 2011; however, early adoption is permitted. The Company is evaluating the specific provisions of the updated guidance, but does not expect the adoption of this guidance to have a significant impact on the Company's results of operations, financial position or cash flows.

Multiemployer Plans

In September 2011, the FASB issued an accounting standards update regarding disclosure of an employer's participation in multiemployer pension and other postretirement benefit plans. This new guidance requires companies to provide additional qualitative and quantitative disclosures about participation in these plans. This update is effective for annual periods for fiscal years ending after December 15, 2012. The new guidance is to be adopted retrospectively with early adoption permitted. As this update provides for additional disclosure requirements only, the Company does not expect the adoption of this guidance to have an impact on the Company's results of operations, financial position or cash flows.

Reclassifications

Certain reclassifications have been made to conform previously reported data to the current presentation.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 3: Utility Plant

The components of utility plant by category at December 31 are as follows:

	Range of Remaining Useful Lives	2011	2010
Land and other non-depreciable assets	-	9,718	9,494
Sources of supply	34 to 75 Years	57,757	55,977
Treatment and pumping	4 to 53 Years	104,191	101,636
Transmission and distribution	40 to 72 Years	271,438	271,240
Services, meters and fire hydrants	34 to 84 Years	96,944	90,067
General structures and equipment	5 to 52 Years	36,830	31,309
Wastewater assets	5 to 50 Years	3,766	3,661
Construction work in progress	-	10,177	7,223
		590,821	570,607
Less: Accumulated depreciation		(105,104)	(98,304)
		<u>\$ 485,717</u>	<u>\$ 472,303</u>

The provision for depreciation expressed as a percentage of the aggregate average depreciable asset balances was 1.94% in 2011 and 1.80% in 2010. The Company records depreciation in conformity with amounts approved by state regulators after regulatory review of information the Company submits to support its estimates of the assets remaining lives.

Note 4: Regulatory Assets and Liabilities*Regulatory Assets*

Regulatory assets represent costs that are expected to be fully recovered from customers in future rates. Depending upon Commission approval certain assets are included in the Company's rate base and others are not.

The components of regulatory assets are as follows:

	2011	2010
Income taxes recoverable through rates	\$ 4,445	\$ 4,745
Programmed maintenance expense	3,209	2,759
Debt and preferred stock expense	1,804	1,890
Bluegrass water project	1,655	1,712
Other	671	740
	<u>\$ 11,784</u>	<u>\$ 11,846</u>

The Company has recorded a regulatory asset for the additional revenues expected to be realized as the tax effects of temporary differences reverse. These temporary differences are

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 4 (continued):

primarily related to the difference between book and tax depreciation on property placed in service before the adoption by the Commission of full normalization for rate making purposes.

The regulatory asset for income taxes recoverable through rates is net of the reduction expected in future revenues as deferred taxes previously provided, attributable to the difference between the state and federal income tax rates under prior law and the current statutory rates, reverse over the average remaining service lives of the related assets.

Programmed maintenance costs are deferred and amortized to current operations on a straight-line basis over a period ranging between five and fifteen years, as authorized by the Commission in their determination of rates charged for service.

Debt expense is amortized over the lives of the respective issues. Unamortized debt expense is deferred and amortized to the extent it will be recovered through future service rates. Expenses of preferred stock issues without sinking fund provisions are amortized over the life of the issuance, whereas expenses of issues with sinking fund provisions are charged to operations as shares are retired.

The Company has recorded a regulatory asset for the Bluegrass water project source of supply costs in the amount of \$2,283 to be amortized over a forty year period. Approval was granted per the Commission order dated May 9, 2001. The Company has recorded a regulatory asset for the Bluegrass water project pipeline costs in the amount of \$3,551 with a ten year amortization period which was fully amortized as of December 31, 2010.

Regulatory Liabilities

Regulatory liabilities represent amounts that are expected to be refunded to customers in future rates or amounts recovered from customers in advance of incurring the costs.

Cost of removal represents amounts where the Company recovers retirement costs through rates during the life of the associated assets and before the costs are incurred. These amounts result in a regulatory liability being reported based on the amounts previously recovered through customer rates, until the costs to retire those assets are incurred.

Regulatory liability – debt extinguishment relates to the 4.75% note payable due 2014 issued to American Water Capital Corporation (“AWCC”), a subsidiary of AWW, which was redeemed in October, 2007 by the Company. As agreed with the Regulators, the difference between the book value of the note and the cash consideration required to extinguish it was deferred as a regulatory liability. The regulatory liability of \$827 is amortized as a component of net interest expense through 2014.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 5: Preferred Stock Without Mandatory Redemption

In the event of voluntary liquidation, the 5.75% series, the 5.50% series, and the 5.00% series are redeemable at \$101 per share, \$100.50 per share, \$100 per share respectively. In the event of involuntary liquidation or governmental acquisition, the 5.75% series, the 5.50% series, and the 5.00% series are all paid at \$100 per share, together with accrued dividends. All call prices are on 30 days' notice plus accrued dividends.

During 2010, the Company paid \$7 to repurchase 100 shares of the 5.00% series preferred stock from certain shareholders with an aggregate par value of \$10. The resulting \$3 gain was recorded to paid in capital as shown in the accompanying Statements of Changes in Common Stockholder's Equity.

Note 6: Long-Term Debt

The general mortgage bonds are issuable in series. No bonds senior to the general mortgage bonds may be issued so long as the general mortgage bonds are outstanding. Based on the calculation methodology specified by debt agreements, the amount of bonds authorized is limited only to the extent that long-term debt cannot exceed 65% of total capitalization and adjusted net income of the Company must be equal to or greater than 1.5 times the aggregate annual interest charges on all long-term debt of the Company. At December 31, 2011 long-term debt was 57% of total capitalization and adjusted net income was 3.1 times the aggregate annual interest charges on all long-term debt. General mortgage bonds are collateralized by utility plant.

The senior notes payable to affiliate are unsecured and were issued to American Water Capital Corporation ("AWCC"), a subsidiary of AWW, for the principal amount. AWCC provided the funding for these notes by issuing senior notes to institutional investors at a price equal to the principal amount.

In 2011, the Company issued a \$20,000 long-term note payable to AWCC, at a rate of 5.05% due in 2037. The proceeds were used to pay down outstanding short-term debt.

In 2010, the Company issued a long-term note payable to affiliate in the amount of \$26,000 at a rate of 5.375% due in 2040. The proceeds were used to pay down outstanding short-term debt.

Maturities of long-term debt, including sinking funds, will amount to \$0 in 2012 through 2016, and \$192,390 thereafter.

Preferred stock agreements contain provisions for redemption at various prices on thirty days notice at the Company's discretion. In the event of voluntary liquidation, the 8.47% series is redeemable at \$100 per share plus the make-whole premium, together with accrued dividends.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 6 (continued):

There was \$3,415 interest capitalized in 2010. There was no capitalized interest recorded in 2011.

Note 7: Short-Term Borrowings

The Company maintained a line of credit through AWCC of \$25,000 at December 31, 2011 and 2010, respectively. The Company may borrow from, or invest in, the line of credit. No compensating balances are required under the agreements. Funds were primarily used for short-term operating needs. Short-term borrowings are presented as notes payable-affiliated company in the accompanying balance sheets

At December 31, 2011 and 2010, there was \$11,509 and \$15,517 of short-term borrowings outstanding, respectively. The weighted average annual interest rates on the borrowings at December 31, 2011 and 2010 were 0.40% and 0.41%, respectively.

The Company received cash capital contributions of \$18,000 in 2010 from AWW. The proceeds were primarily used to pay down short-term debt.

AWW, through AWCC, has committed to make additional financing available to the Company, as needed, to pay its obligations as they come due.

Note 8: General Taxes

Components of general tax expense for the years presented in the statements of income are as follows:

	<u>2011</u>	<u>2010</u>
Gross receipts and franchise	\$ 11	\$ 60
Property	4,417	4,078
Payroll	568	560
Other	106	106
	<u>\$ 5,102</u>	<u>\$ 4,804</u>

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 9: Income Taxes

Components of income tax expense for the years presented in the statements of income are as follows:

	<u>2011</u>	<u>2010</u>
State income taxes:		
Current	\$ (313)	\$ 947
Deferred		
Current	(9)	(10)
Non-current	1,059	370
	<u>737</u>	<u>1,307</u>
Federal income taxes:		
Current	17,091	(13,927)
Deferred		
Current	(49)	(56)
Non-current	(12,751)	21,623
Amortization of deferred investment tax credits	(84)	(85)
	<u>4,207</u>	<u>7,555</u>
Total income taxes	<u>\$ 4,944</u>	<u>\$ 8,862</u>

The 2011 total income tax expense includes a tax benefit of \$4,472 related to the contribution of non-utility property to a county authority.

The primary components of the net deferred tax liability of \$57,597 at December 31, 2011 include basis differences in utility plant, partially offset by advances and contributions.

No valuation allowances were required on deferred tax assets at December 31, 2011 and 2010, as management believes it is more likely than not that deferred tax assets will be realized.

At December 31, 2011 and 2010, the Company had state net operating loss carryforwards (“NOLs”) of \$2,515 and \$0, respectively. These NOLs will begin to expire in 2031 if not utilized.

As of December 31, 2011 and 2010, the reserve for uncertain tax position is \$3,130 and \$2,243, respectively, excluding accrued interest and penalties. The Company does not expect a material change in this estimate in the next twelve months. The reserve for uncertain tax positions could increase or decrease for things such as the expiration of statutes of limitations, audit settlements, or tax examination activities.

The Company recognizes interest and penalties related to income tax matters in income tax expense. Accrued interest and penalties related to uncertain tax positions were \$7 and \$8 as of December 31, 2011 and 2010, respectively.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 9 (continued):

The federal tax years that remain open are 2006 to 2010, with the earliest year's statute expiring in 2012. The Company is subject to state taxes. The state tax returns from 2007 to 2010 are currently open and will not close until the respective statutes of limitations expire. The statute of limitations will begin to expire in 2012.

Note 10: Rate Matters

As necessary, the Company applies to the Commission for changes in the rates charged for service. The revenues requested are based on forecasted sales, operating expenses, and investments for the first full year after the effective dates of the new rates. The Company can provide no assurances that any rate increase request will be granted by the Commission.

The Company filed a petition with the Commission seeking authority to increase its rates and charges for water and sewer service on February 26, 2010. On September 29, 2010, the Company placed the proposed rates in effect under bond, per the Commission, subject to refund. On December 14, 2010, the Commission issued an Order authorizing an increase in rates of \$18,825 or 27.73% with rates made effective on September 29, 2010. As of December 31, 2010 the Company collected \$1,466 of interim rates in excess of the approved amounts, this was refunded to customers in the first quarter of 2011.

Note 11: Employee Benefit Plans*Savings Plan for Employees*

The Company maintains a 401(k) savings plan, sponsored by AWW that allows employees to save for retirement on a tax-deferred basis. Employees can make contributions that are invested at their direction in one or more funds. The Company makes matching contributions based on a percentage of an employee's contribution, subject to certain limitations. Due to the Company's discontinuing new entrants into the defined benefit pension plan, on January 1, 2006 the Company began providing an additional 5.25% of base pay defined contribution benefit for union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006. The Company expensed contributions to the plans totaling \$278 for 2011, \$244 for 2010. All of the Company's contributions are invested in one or more funds at the direction of the employee.

Note 12: Postretirement Benefits*Pension Benefits*

The Company participates in a Company funded defined benefit pension plan sponsored by AWW covering employees hired before January 1, 2006. Benefits under the plan are based

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 12 (continued):

on the employees' years of service and average annual compensation for those 60 consecutive months of employment that yield the highest average. The pension plan has been closed for most employees hired on or after January 1, 2006. Union employees hired on or after January 1, 2001 had their accrued benefit frozen and will be able to receive this benefit as a lump sum upon termination or retirement. Union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006 are provided with a 5.25% of base pay defined contribution plan. Pension cost of the Company is based on an allocation from AWW of the total cost related to the plan. Information regarding accumulated and projected benefit obligations is not prepared at the subsidiary level. The Company was allocated costs of \$1,106 and \$1,311 for 2011 and 2010, respectively.

AWW's funding policy is to contribute at least the minimum amount required under the Employee Retirement Income Security Act of 1974. The Company made contributions to the AWW plan of \$3,167 in 2011 and \$1,936 in 2010. The Company expects to contribute \$1,914 to the AWW plan in 2012.

Postretirement Benefits Other Than Pensions

The Company participates in a Company funded plan sponsored by AWW that provides certain life insurance benefits for retired employees and certain health care benefits for retired employees and their dependents. The retiree welfare plans are closed for union employees hired on or after January 1, 2006, and non-union employees hired on or after January 1, 2002. Retirees and their dependents under age 65 are covered by a point-of-service managed care plan that requires co-payments or an HMO.

Employees who elect to retire prior to attaining age 65 are generally required to make contributions towards their medical coverage until attaining age 65. Retirees and their dependents age 65 and over are covered by a Medicare supplement plan. Costs of the Company are based on an allocation from AWW of the total cost related to the plan. Information regarding accumulated and projected benefit obligations is not prepared at the subsidiary level. The Company was allocated costs of \$743 and \$1,052 for 2011 and 2010, respectively.

The Company made contributions to trust funds established for these postretirement benefits of \$743 in 2011 and \$1,052 in 2010. The Company's policy is to fund postretirement benefits costs accrued. The Company expects to contribute \$783 to the AWW plan in 2012.

Note 13: Stock Based Compensation*Stock Options and Restricted Stock Units*

In the first quarter of 2011 and 2010, AWW granted restricted stock units and stock options to certain employees of the Company under the AWW 2007 Omnibus Equity Compensation Plan ("Omnibus Plan"). The restricted stock units vest ratably over the three year

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 13 (continued):

performance periods beginning January 1, 2011 and 2010, respectively, (the "Performance Period"); however distribution of the shares is contingent upon the achievement of certain thresholds over the Performance Period. The thresholds are based on achievement of internal performance measures and separately certain market factors over the Performance Periods. The stock options vest ratably over a three year service period beginning January 1, 2011 and 2010, respectively.

The grant date fair value of restricted stock awards is amortized through expense over the requisite service period using the graded-vesting method. The value of stock options at the date of the grant is amortized through expense over the requisite service period using the straight-line method.

Costs of the Company are based on an allocation from AWW of the total cost for the Company's employees in the plan. The Company recorded compensation expense of \$70 and \$26, included in operation and maintenance expense, during the years ended December 31, 2011 and 2010, respectively. As the Company does not reimburse the cost of the awards to AWW, the offsetting entry to paid-in-capital is a capital contribution from AWW.

Employee Stock Purchase Plan

AWW's Nonqualified Employee Stock Purchase Plan ("ESPP") was effective as of July 1, 2008. Under the ESPP, the Company's employees can use payroll deductions to acquire AWW common stock at the lesser of 90% of the fair market value of a) the beginning or b) the end of each three-month purchase period. AWW's ESPP is considered compensatory. Costs of the Company are based on an allocation from AWW of the total cost for the Company's employees in the plan. Compensation costs of \$9 and \$4 were included in operation and maintenance expense for the years ended December 31, 2011 and 2010, respectively. As the Company does not reimburse the cost of the awards to AWW, the offsetting entry to paid-in capital is a capital contribution from AWW.

Note 14: Related Party Transactions

American Water Works Service Company, Inc. ("AWWS"), a subsidiary of AWW, provides certain management services to the Company (administration, accounting, data processing, engineering, etc.) and other operating water companies in the AWW system on an at-cost, not-for-profit basis in accordance with a management and service agreement.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 14 (continued):

Purchases of such services by the Company were accounted for as follows:

	<u>2011</u>	<u>2010</u>
Included in operation and maintenance expense as a charge against income	\$ 7,751	\$ 8,849
Capitalized primarily in utility plant	<u>4,024</u>	<u>1,426</u>
	<u>\$ 11,775</u>	<u>\$ 10,275</u>

The Company provided workspace for certain associates of AWW. Charges for direct costs and indirect overhead costs associated with these associates are billed to AWW on an at-cost, not for profit basis, which amounted to \$268 in 2011 and \$245 in 2010.

The Company had operating arrangements with American Anglian Environmental Technologies, L.P. ("AAET"), a subsidiary of AWW, through March 31, 2011, for the lease of granular activated carbon at one of the Company's water treatment plants. The Company paid \$12 in 2011 and \$57 in 2010 to AAET under these arrangements.

The Company purchased granular activated carbon from AAET for the Richmond Road Water Station. The Company paid \$154 in 2011 and \$156 in 2010 under these agreements.

The Company maintains a line of credit through AWCC. The Company also participates in AWCC's centralized treasury function whereby the Company transfers its cash to AWCC and the Company's checks are issued out of AWCC. Under this arrangement, available cash is used to pay-down the line of credit and issued checks increase the Company's line of credit balance. The Company paid AWCC fees, including debt issuance cost, of \$42 in 2011 and \$402 in 2010 and interest expense on borrowings of \$73 in 2011 and \$114 in 2010. Interest expense on long-term debt due to AWCC, net of capitalized amount, was \$8,960 in 2011 and \$4,959 in 2010.

Accrued interest included interest due to AWCC of \$1,582 and \$1,524 as of December 31, 2011 and 2010, respectively.

The Company pays dividends to AWW on a periodic basis. The amount of the dividend is based on a percentage of net income adjusted for certain items.

Note 15: Fair Values of Financial Instruments

The Company used the following methods and assumptions in estimating its fair value disclosures for financial instruments:

Current assets and current liabilities: The carrying amount reported in the balance sheet for current assets and current liabilities approximates their fair value.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**

(Dollars in thousands, except per share amounts)

Note 15 (continued):

Preferred stocks with mandatory redemption requirements and long-term debt: The fair values of the Company's preferred stocks with mandatory redemption requirements and long-term debt are estimated using discounted cash flow analyses based on the Company's current incremental financing rates for similar types of securities.

The carrying amounts and fair values of the Company's financial instruments at December 31 are as follows:

	2011		2010	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Preferred stock with mandatory redemption requirements, including current maturities	\$ 4,500	\$ 5,656	\$ 4,500	\$ 4,835
Long-term debt, including current maturities	\$ 187,890	\$ 225,043	\$ 170,990	\$ 182,208

Recurring Fair Value Measurements

As of December 31, 2011 and 2010, the Company had no assets or liabilities measured and recorded at fair value on a recurring basis.

Note 16: Operating Lease

The Company has entered into operating leases involving certain facilities and equipment. Rental expenses under operating leases were \$34 in 2011 and \$36 in 2010. The operating leases for equipment expire in 2013 through 2015.

At December 31, 2011, the minimum annual future rental commitments under operating leases that have initial or remaining non-cancelable lease terms in excess of one year are \$34 in 2012, \$18 in 2013, \$12 in 2014, \$3 in 2015, \$1 in 2016 and \$26 thereafter.

Note 17: Commitments and Contingencies

Commitments have been made in connection with certain construction programs. The estimated capital expenditures required under legally binding contractual obligations amounted to \$978 at December 31, 2011.

KENTUCKY-AMERICAN WATER COMPANY**Notes to Financial Statements****December 31, 2011 and 2010**(Dollars in thousands, except per share amounts)

Note 17 (continued):

The Company has entered into certain service agreements in excess of one year duration. As of December 31, 2011 the annual commitments under these agreements were \$267 in 2012 and \$0 thereafter.

The Company is also routinely involved in legal actions incident to the normal conduct of its business. For certain matters, the Company is unable to estimate possible losses. The Company believes that damages or settlements, if any, recovered by plaintiffs in such claims or actions will not have a material adverse effect on the Company's results of operations, financial position or cash flows.

Note 18: Subsequent Events

The Company performed an evaluation of subsequent events for the accompanying financial statements through March 26, 2012, the date this report was issued, to determine whether the circumstances warranted recognition and disclosure of those events or transactions in the financial statements as of December 31, 2011.

KENTUCKY-AMERICAN WATER COMPANY**Balance Sheets****December 31, 2011 and 2010**

(Dollars in thousands)

	<u>2011</u>	<u>2010</u>
Assets		
Property, plant and equipment		
Utility plant - at original cost, net of accumulated depreciation	\$ 485,717	\$ 472,303
Utility plant acquisition adjustments	251	263
Nonutility property	250	270
Total property, plant and equipment	<u>486,218</u>	<u>472,836</u>
Current assets		
Cash and cash equivalents	282	269
Customer accounts receivable	2,826	3,011
Allowance for uncollectible accounts	(543)	(407)
Unbilled revenues	3,893	4,412
State income tax receivable	1,567	286
Federal income tax refund due from affiliated company	6,369	13,197
Materials and supplies	691	747
Other	478	868
Total current assets	<u>15,563</u>	<u>22,383</u>
Regulatory and other long-term assets		
Regulatory assets	11,784	11,846
Other	52	52
Total regulatory and other long-term assets	<u>13,168</u>	<u>11,898</u>
Total assets	<u>\$ 514,949</u>	<u>\$ 507,117</u>

KENTUCKY-AMERICAN WATER COMPANY**Balance Sheets****December 31, 2011 and 2010**

(Dollars in thousands)

Capitalization and Liabilities

	<u>2011</u>	<u>2010</u>
Capitalization		
Common stock	36,569	36,569
Paid-in capital	74,768	74,689
Retained earnings	43,937	39,458
Common stockholder's equity	\$ 155,274	\$ 150,716
Preferred stock without mandatory redemption requirements	1,446	1,446
Long-term debt, excluding current portion		
Preferred stock with mandatory redemption requirements	4,500	4,500
Long-term debt	187,890	167,890
Total capitalization	<u>349,110</u>	<u>324,552</u>
Current liabilities		
Notes payable - affiliated company	11,509	15,517
Current portion of long-term debt	-	3,100
Accounts payable	6,453	6,161
Accrued interest	1,926	1,868
Accrued taxes	3,992	3,123
Other	4,020	5,256
Total current liabilities	<u>27,900</u>	<u>35,025</u>
Regulatory and other long-term liabilities		
Deferred income taxes	57,597	69,176
Advances for construction	12,675	12,774
Deferred investment tax credits	879	963
Regulatory liability - cost of removal	13,476	12,449
Regulatory liability - debt extinguishment	283	413
Accrued pension expense	-	729
Accrued postretirement benefit expense	552	504
Other tax liabilities	2,771	1,944
Other	68	63
Total regulatory and other long-term liabilities	<u>88,301</u>	<u>99,015</u>
Contributions in aid of construction	49,638	48,525
Commitments and contingencies (See Note 17)	<u>-</u>	<u>-</u>
Total capitalization and liabilities	<u>\$ 514,949</u>	<u>\$ 507,117</u>

KENTUCKY-AMERICAN WATER COMPANY
Statements of Income
For the Years Ended December 31, 2011 and 2010
(Dollars in thousands)

	<u>2011</u>	<u>2010</u>
Operating revenues	\$ 83,301	\$ 74,055
Operating expenses		
Operation and maintenance	33,024	33,992
Depreciation	8,915	6,690
Amortization	2,182	2,182
General taxes	5,102	4,804
Total operating expenses	<u>49,223</u>	<u>47,668</u>
Operating income	<u>34,078</u>	<u>26,387</u>
Other income (expenses)		
Interest on long-term debt	(10,864)	(6,862)
Interest on short-term debt to affiliated company	(73)	(114)
Allowance for other funds used during construction	281	2,244
Allowance for borrowed funds used during construction	132	1,127
Amortization of debt issuance costs	(86)	(129)
Other, net	(394)	(539)
Total other expenses	<u>(11,004)</u>	<u>(4,273)</u>
Income before income taxes	23,074	22,114
Provision for income taxes	<u>4,944</u>	<u>8,862</u>
Net income	<u>18,130</u>	<u>13,252</u>
Dividends on preferred stock	<u>78</u>	<u>78</u>
Net income available to common stockholder	<u>\$ 18,052</u>	<u>\$ 13,174</u>

KENTUCKY-AMERICAN WATER COMPANY**Statements of Cash Flows****December 31, 2011 and 2010**

(Dollars in thousands)

	<u>2011</u>	<u>2010</u>
Cash flows from operating activities		
Net income	\$ 18,130	\$ 13,252
Adjustments		
Depreciation and amortization	11,097	8,872
Amortization of debt issuance costs	86	129
(Credits) provision for deferred income taxes	(11,750)	21,927
Amortization of deferred investment tax credits	(84)	(85)
Provision for losses on accounts receivable	602	526
Allowance for other funds used during construction	(281)	(2,244)
Pension and non-pension post retirement benefits	1,849	2,363
Other, net	(425)	(2,039)
Changes in assets and liabilities		
Accounts receivable and unbilled revenues	238	(1,976)
Federal income tax -affiliated company	7,895	(12,468)
Other current assets	(759)	1,220
Pension and non-pension post retirement benefits contribution	(3,910)	(2,988)
Accounts payable	1,095	(3,145)
Accrued taxes	956	270
Other current liabilities	(1,178)	(80)
Net cash provided by operating activities	<u>23,561</u>	<u>23,534</u>
Cash flows from investing activities		
Capital expenditures	(24,252)	(47,747)
Removal costs from property, plant and equipment retirements, net of salvage	(845)	(227)
Net proceeds from notes receivable - affiliated company	-	3,443
Net cash used in investing activities	<u>(25,097)</u>	<u>(44,531)</u>
Cash flows from financing activities		
Proceeds from issuance of long-term debt to affiliated company	20,000	26,000
Repayment of long-term debt to affiliate	(3,100)	(3,100)
Debt issuance costs to affiliate	-	(321)
Net repayments of short-term borrowings-affiliated company	(4,008)	(11,796)
Advances and contributions for construction, net of refunds of \$716 in 2011 and \$1,548 in 2010	2,308	1,326
Capital contributions	-	18,000
Redemption of preferred stock	-	(7)
Dividends paid	(13,651)	(9,012)
Net cash provided by financing activities	<u>1,549</u>	<u>21,090</u>
Net increase in cash and cash equivalents	13	93
Cash and cash equivalents at beginning of year	<u>269</u>	<u>176</u>
Cash and cash equivalents at end of year	<u>\$ 282</u>	<u>\$ 269</u>
Cash paid (received) during the year for:		
Interest, net of capitalized amount	\$ 11,086	\$ 10,517
Income taxes, net of refunds of \$0 in 2011 and \$2,076 in 2010	\$ 10,028	\$ (1,626)
Non-cash investing activity		
Capital expenditures acquired on account but unpaid as of year end	\$ 3,220	\$ 4,018
Non-cash financing activity		
Capital contribution (See Note 13)	\$ 79	\$ 30

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Scott W. Rungren**

30. CC – Reference: Cost of Capital. For the past three years, please provide the dates and amount of:

- a. Cash dividend payments made by KAWC to AWWC; and
- b. Cash equity infusions made by AWWC into KAWC.

Response:

a.

(\$000)	Date	Cash Dividend (KAWC to AWWC)
2010	3/31/2010	1,473
	6/29/2010	1,818
	9/28/2010	2,367
	12/29/2010	3,276
Total 2010		8,934
2011	3/31/2011	2,461
	6/29/2011	1,552
	9/28/2011	2,445
	12/29/2011	7,116
Total 2011		13,574
2012	3/30/2012	5,266
	6/29/2012	1,426
	9/28/2012	3,323
	12/28/2012	4,686
Total 2012		14,702

b.

(\$000)	Date	Equity Contribution (AWWC to KAWC)
2010	5/26/2010	9,000
	12/15/2010	9,000
Total 2010		18,000
2011		-
Total 2011		-
2012	7/2/2012	4,000
Total 2012		4,000

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Linda C. Bridwell/Gary M. VerDouw**

31. CC – Reference: Cost of Capital. Please provide the SEC 10-k reports for AWWC and KAWC for 2011 and 2012. If the 2012 10-k is not yet available, please provide it when it becomes available.

Response:

Please see the attached 10-K filings for 2010 and 2011. 2012 should be available on March 15, 2012. Please reference Item 29 of this same data request which has the audited statements for KAWC. KAWC does not have SEC 10-k reporting requirements.

American Water Works Company, Inc. (AWK)

10-K

Annual report pursuant to section 13 and 15(d)

Filed on 02/28/2011

Filed Period 12/31/2010



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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 10-K

- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2010
- OR**
- TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ **to** _____
Commission file: number 001-34028

AMERICAN WATER WORKS COMPANY, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)
1025 Laurel Oak Road, Voorhees, NJ
(Address of principal executive offices)

51-0063696
(I.R.S. Employer
Identification No.)
08043
(Zip Code)

(856) 346-8200

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common stock, par value \$0.01 per share	New York Stock Exchange, Inc.

Securities registered pursuant to Section 12(g) of the Act:

None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "small reporting company" in Rule 12(b)-2 of the Exchange Act.:

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Small reporting company	<input type="checkbox"/>

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter.

Common Stock, \$0.01 par value—\$3,599,812,014 as of June 30, 2010.

Indicate the number of shares outstanding of each of the registrant's classes of common stock as of the latest practicable date.

Common Stock, \$0.01 par value per share—175,211,592 shares, as of February 22, 2011.

DOCUMENTS INCORPORATED BY REFERENCE

(1) Portions of the Company's Proxy Statement for the Company's 2011 Annual Meeting of Stockholders are incorporated by reference into Part III of this report.

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FORWARD-LOOKING STATEMENTS

We have made statements under the captions "Business," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and in other sections of this Annual Report on Form 10-K ("Form 10-K"), or incorporated certain statements by reference into this Form 10-K, that are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and the Private Securities Litigation Reform Act of 1995. In some cases, these forward-looking statements can be identified by words with prospective meanings such as "intend," "plan," "estimate," "believe," "anticipate," "expect," "predict," "project," "forecast," "outlook," "future," "potential," "continue," "may," "can," "should" and "could" and similar expressions. Forward-looking statements may relate to, among other things, our future financial performance, our growth and portfolio optimization strategies, our projected capital expenditures and related funding requirements, our ability to repay debt, our ability to finance current operations and growth initiatives, the impact of legal proceedings and potential fines and penalties, business process and technology improvement initiatives, trends in our industry, regulatory or legal developments or rate adjustments.

Forward-looking statements are predictions based on our current expectations and assumptions regarding future events. They are not guarantees of any outcomes, financial results or levels of performance and you are cautioned not to place undue reliance upon them. These forward-looking statements are subject to a number of risks and uncertainties, and new risks and uncertainties of which we are not currently aware or which we do not currently perceive may arise in the future from time to time. Should any of these risks or uncertainties materialize, or should any of our expectations or assumptions prove incorrect, then our results may vary materially from those discussed in the forward-looking statements herein. Factors that could cause actual results to differ from those discussed in forward-looking statements include, but are not limited to, the factors discussed under the caption "Risk Factors" and the following factors:

- the decisions of governmental and regulatory bodies, including decisions to raise or lower rates;
- the timeliness of regulatory commissions' actions concerning rates;
- changes in laws, governmental regulations and policies, including environmental, health and water quality and public utility regulations and policies;
- weather conditions, patterns or events, including drought or abnormally high rainfall;
- changes in customer demand for, and patterns of use of, water, such as may result from conservation efforts;
- significant changes to our business processes and corresponding technology;
- our ability to appropriately maintain current infrastructure;
- our ability to obtain permits and other approvals for projects;
- changes in our capital requirements;
- our ability to control operating expenses and to achieve efficiencies in our operations;
- our ability to obtain adequate and cost-effective supplies of chemicals, electricity, fuel, water and other raw materials that are needed for our operations;
- our ability to successfully acquire and integrate water and wastewater systems that are complementary to our operations and the growth of our business or dispose of assets or lines of business that are not complementary to our operations and the growth of our business;
- cost overruns relating to improvements or the expansion of our operations;
- changes in general economic, business and financial market conditions;
- access to sufficient capital on satisfactory terms;

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- fluctuations in interest rates;
- restrictive covenants in or changes to the credit ratings on our current or future debt that could increase our financing costs or affect our ability to borrow, make payments on debt or pay dividends;
- fluctuations in the value of benefit plan assets and liabilities that could increase our cost and funding requirements;
- our ability to utilize our U.S. and state net operating loss carryforwards;
- migration of customers into or out of our service territories;
- difficulty in obtaining insurance at acceptable rates and on acceptable terms and conditions;
- the incurrence of impairment charges;
- ability to retain and attract qualified employees; and
- civil disturbance, or terrorist threats or acts or public apprehension about future disturbances or terrorist threats or acts.

Any forward-looking statements we make, speak only as of the date of this Form 10-K. Except as required by law, we do not have any obligation, and we specifically disclaim any undertaking or intention, to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changed circumstances or otherwise.

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PART I

ITEM 1. BUSINESS

Our Company

American Water Works Company, Inc., a Delaware corporation, is the most geographically diversified, as well as the largest publicly-traded, United States water and wastewater utility company, as measured by both operating revenue and population served. Our more than 7,000 employees provide approximately 15 million people with drinking water, wastewater and other water-related services in over 30 states and two Canadian provinces.

In 2010, we generated \$2,710.7 million in total operating revenue and \$748.1 million in operating income. In 2009, we generated \$2,440.7 million in total operating revenue and \$173.6 million in operating income, which included a \$450.0 million impairment charge. Our 2009 revenue represents approximately four times the operating revenue of the next largest publicly traded company in the United States water and wastewater business.

We have two operating segments that are also the Company's two reportable segments, the Regulated Businesses and the Market-Based Operations (formerly known as the "Non-Regulated Businesses"). For further details on our segments, see Note 22 of the Consolidated Financial Statements.

For 2010, our Regulated Businesses segment generated \$2,424.2 million in operating revenue, which accounted for 89.4% of our total consolidated operating revenue. For the same period, our Market-Based Operations segment generated \$311.8 million in operating revenue, which accounted for 11.5% of total consolidated operating revenue.

For additional financial information, please see the financial statements and related notes thereto appearing elsewhere in this Form 10-K.

Our History as a Public Company

The Company was founded in 1886 as the American Water Works & Guarantee Company for the purposes of building and purchasing water systems in McKeesport, Pennsylvania. In 1935, the Company was reorganized under its current name, and in 1947 the common stock of the Company became publicly traded on the New York Stock Exchange ("NYSE"). In 2003, we were acquired by RWE Aktiengesellschaft, which we refer to as RWE, a stock corporation incorporated in the Federal Republic of Germany. On April 28, 2008, RWE Aqua Holdings GmbH, a German limited liability company and a direct wholly-owned subsidiary of RWE, which then was the sole owner of the Company's common stock, completed a partial divestiture of its investment through an initial public offering ("IPO"). As a result of the IPO, we again became listed on the NYSE under the symbol "AWK" and resumed our position as the largest publicly traded water utility company in the United States. As of December 31, 2008, RWE owned approximately 60% of the Company's shares of common stock. Throughout 2009, RWE continued to divest of its investment in our common stock through public offerings and on November 24, 2009, RWE completed the divestiture.

Regulated Businesses Segment Overview

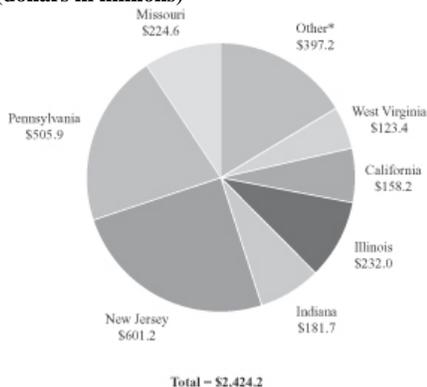
Our primary business involves the ownership of water and wastewater utilities services to residential, commercial, industrial and other customers, including sale for resale and public authority customers. Our subsidiaries that provide these services are generally subject to economic regulation by certain state commissions or other entities engaged in economic regulation, hereafter referred to as "PUCs" in the states in which they operate. The federal government and the states also regulate environmental, health and safety, and water quality matters. We report the results of our primary business in the Regulated Businesses segment. As noted above, for

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2010, operating revenue for our Regulated Businesses segment was \$2,424.2 million, accounting for 89.4% of total consolidated operating revenue for the same period. Regulated Businesses segment operating revenues were \$2,207.3 million for 2009 and \$2,082.7 million for 2008 accounting for 90.4% and 89.1%, respectively, of total operating revenues for the same periods.

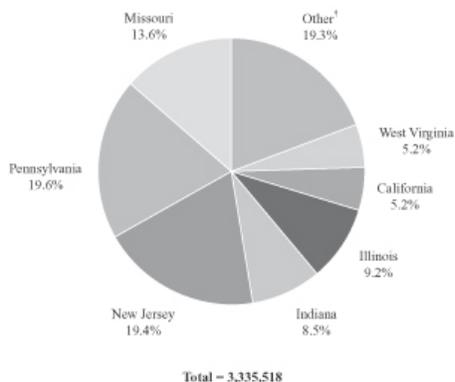
The following charts set forth operating revenue for 2010 and customers as of December 31, 2010, for the states in which our Regulated Businesses provide services:

**Regulated Businesses Operating Revenue
(dollars in millions)**



* Includes the combined results of our operating subsidiaries in the following states: Arizona, Georgia, Hawaii, Iowa, Kentucky, Maryland, Michigan, New Mexico, New York, Ohio, Tennessee, Texas and Virginia

Regulated Businesses Customers



† Includes data from our operating subsidiaries in the following states: Arizona, Georgia, Hawaii, Iowa, Kentucky, Maryland, Michigan, New Mexico, New York, Ohio, Tennessee, Texas and Virginia

Market-Based Operations Overview

We also provide services that are not subject to economic regulation by state PUCs through our Market-Based Operations. Our Market-Based Operations include three lines of business:

- Contract Operations Group, which enters into contracts to operate and maintain water and wastewater facilities for the United States military, municipalities, the food and beverage industry and other customers;
- Homeowner Services Group, which provides services to domestic homeowners and smaller commercial establishments to protect against the cost of repairing broken or leaking water pipes and clogged or blocked sewer pipes inside and outside their accommodations; and
- Terratec Environmental Ltd., which we refer to as Terratec, which primarily provides biosolids management, transport and disposal services to municipal and industrial customers.

For 2010, operating revenue for our Market-Based Operations was \$311.8 million, accounting for 11.5% of total operating revenue for the same period. The Market-Based Operations' operating revenue was \$257.7 million for 2009 and \$272.2 million for 2008 accounting for 10.6% and 11.6%, respectively, of total operating revenues for the same periods.

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Our Industry

Overview

The United States water and wastewater industry has two main sectors (i) utility, which involves supplying water and wastewater services to consumers; and (ii) general services, which involves providing water and wastewater related services to water and wastewater utilities and other customers on a contract basis.

The utility sector includes investor-owned as well as municipal systems that are owned and operated by local governments or governmental subdivisions. The Environmental Protection Agency ("EPA") estimates that government-owned systems make up the vast majority of the United States water and wastewater utility segment, accounting for approximately 84% of all United States community water systems and approximately 98% of all United States community wastewater systems. Investor-owned water and wastewater systems account for the remainder of the United States water and wastewater community water systems. Growth of service providers in the investor-owned regulated utility sector is achieved through organic growth within a franchise area, the provision of bulk water service to other community water systems and/or the acquisitions, including small water and wastewater systems, typically serving fewer than 10,000 customers that are in close geographic proximity to already established regulated operations, which we herein refer to as "tuck-ins."

According to the EPA, the utility segment of the United States water and wastewater industry is highly fragmented, with approximately 52,000 community water systems and approximately 16,000 community wastewater facilities. Fifty-six percent of the approximately 52,000 community water systems are very small, serving a population of 500 or less.

This large number of relatively small fragmented water systems as well as fragmented wastewater facilities may result in inefficiencies in the marketplace, since such utilities may not have the operating expertise, financial and technological capability or economies of scale to provide services or raise capital as efficiently as larger utilities. These inefficiencies may lead to industry consolidation in the future, as the larger investor-owned utilities acquire smaller, local water and wastewater systems. Larger utilities that have greater access to capital are generally more capable of making mandated and other necessary infrastructure upgrades to both water and wastewater systems. In addition, water and wastewater utilities with large customer bases, spread across broad geographic regions, may more easily absorb the impact of significant variations in precipitation and temperatures, such as droughts, excessive rain and cool temperatures in specific areas. Larger utilities generally are able to spread overhead expenses over a larger customer base, thereby reducing the costs to serve each customer. Since many administrative and support activities can be efficiently centralized to gain economies of scale and sharing of best practices, companies that participate in industry consolidation have the potential to improve operating efficiencies, lower costs per unit and improve service at the same time.

The utility sector is characterized by high barriers to entry, including the capital intensive nature of the industry. Investor-owned water and wastewater utilities also face regulatory approval processes in order to do business, which may involve obtaining relevant operating approvals, including certificates of public convenience and necessity (or similar authorizations) from state PUCs. Investor-owned water and wastewater systems are generally subject to economic regulation by the state PUCs in the states in which they operate. The federal government and the states also regulate environmental, health and safety and water quality matters for both investor-owned and government-owned water and wastewater utilities.

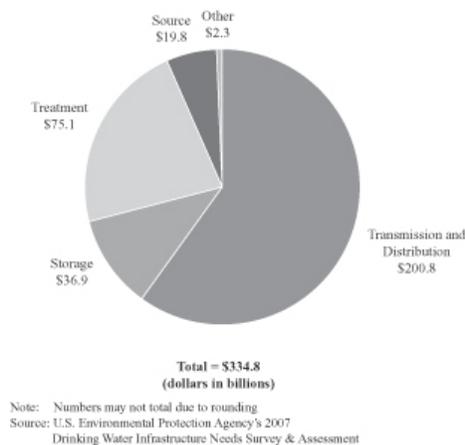
The general services sector includes engineering and consulting companies and numerous other fee-for-service businesses. These include building and operating water and wastewater utility systems, system repair services, lab services, sale of water infrastructure and distribution products (such as pipes) and other specialized services. The general services segment is characterized by aggressive competition and market-driven growth and profit margins.

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The aging water and wastewater infrastructure in the United States is in constant need of modernization and facilities replacement. Increased regulations to improve water quality and the management of wastewater discharges, which began with passage of the Clean Water Act in 1972 and the Safe Drinking Water Act in 1974, have been among the primary drivers of the need for modernization. The EPA estimated that approximately \$335 billion of capital spending will be necessary between 2007 and 2026 to replace aging infrastructure and to comply with standards to ensure quality water systems across the United States. Also, the EPA estimates that approximately \$390 billion of capital spending will be necessary over the next 20 years to replace aging infrastructure and ensure quality wastewater systems across the United States. In addition, the American Society of Civil Engineers' 2009 *Report Card for America's Infrastructure* reinforces the urgency to address infrastructure issues associated with aging water and wastewater systems.

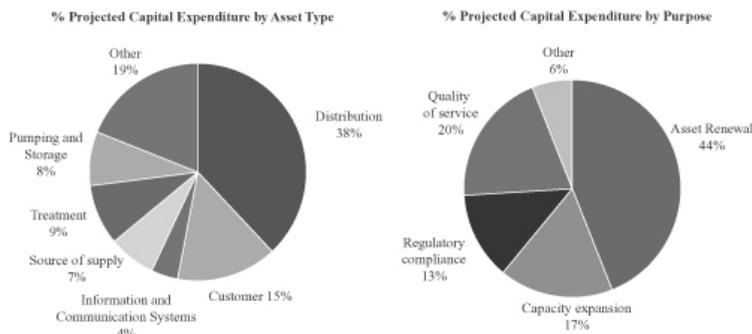
Capital expenditures related to municipal water supply, treatment and distribution and wastewater collection and treatment facilities are typically funded by water and wastewater rates, taxes or the issuance of bonds. As a result, in order to meet their capital spending challenges, many municipalities are examining a combination of privatizations and partnerships with the private sector. Privatization typically involves a transfer of ownership or responsibility for the operation of the utility from the municipality to the private sector. Some cases may involve an ownership transfer, for specified long-term periods, with transfer back to the municipality at expiration of the term of the agreement. Partnerships between municipalities and the private sector include arrangements like Operations and Maintenance ("O&M"); Design, Build and Operate ("DBO"); Design, Build Operate/Maintain; and Design, Build, Own, Operate/Maintain and Transfer contracts. Under these types of contracts, the municipality either retains ownership or regains ownership of the water and/or wastewater system and the private sector takes responsibility for managing and operating the system.

The following chart sets forth estimated capital expenditure needs from 2007 through 2026 for United States water systems:



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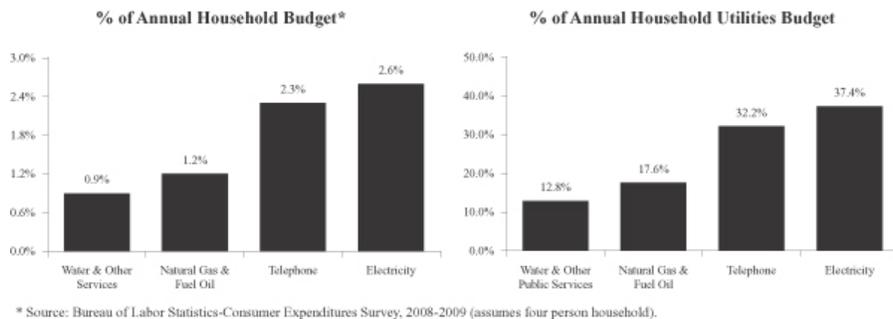
Over the next several years, we estimate that Company-funded capital investment will total between \$800 million and \$1 billion per year. Our capital investment includes both infrastructure renewal programs, where we replace existing infrastructure, as needed, and construction of facilities to meet environmental requirements and new customer growth. The charts below set forth our estimated percentage of projected capital expenditures by asset type and purpose of investment, respectively:



Water and Wastewater Rates

Investor-owned water and wastewater utilities generate operating revenue from customers based on rates that are established by state PUCs through a rate-setting process that may include public hearings, evidentiary hearings and the submission by the utility of evidence and testimony in support of the requested level of rates. In evaluating a rate case, state PUCs typically focus on six areas (i) the amount and prudence of investment in facilities considered "used and useful" in providing public service; (ii) the operating and maintenance costs and taxes associated with providing the service (typically by making reference to a representative 12-month period of time, known as a test year); (iii) the appropriate rate of return; (iv) the tariff or rate design that allocates operating revenue requirements equitably across the customer base; (v) the quality of service the utility provides, including issues raised by customers and (vi) revenue at existing rates.

Water and wastewater rates in the United States are among the lowest rates in developed countries; and for most U.S. consumers, water and wastewater bills make up a relatively small percentage of household expenditures compared to other utility services. The following chart sets forth the relative cost of water and other public services, including trash and garbage collection and sewer maintenance, in the United States as a percentage of total household utility expenditures:



* Source: Bureau of Labor Statistics-Consumer Expenditures Survey, 2008-2009 (assumes four person household).

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Our Regulated Businesses

Our core Regulated Businesses, which consist of locally managed utility subsidiaries that generally are economically regulated by the states in which they operate, accounted for \$2,424.2 million or 89.4% of our consolidated operating revenue in 2010. Our Regulated Businesses provide a high degree of financial stability because (i) high barriers to entry provide certain protections from competitive pressures; (ii) economic regulation promotes predictability in financial planning and long-term performance through the rate-setting process; and (iii) our largely residential customer base promotes consistent operating results.

The following table sets forth operating revenue for 2010 and number of customers as well as an estimate of population served as of December 31, 2010 for our regulated subsidiaries in the states where our Regulated Businesses operate:

	Operating Revenues		Number of Customers		Estimated Population Served	
	(in millions)	% of Total		% of Total	(in millions)	% of Total
New Jersey	\$ 601.2	24.8%	645,939	19.4%	2.5	21.3%
Pennsylvania	505.9	20.9%	654,578	19.6%	2.2	18.1%
Illinois(a)	232.0	9.6%	308,399	9.2%	1.2	9.8%
Missouri	224.6	9.2%	452,102	13.6%	1.5	12.3%
Indiana	181.7	7.5%	284,568	8.5%	1.2	9.8%
California	158.2	6.5%	173,075	5.2%	0.6	4.9%
West Virginia(b)	123.4	5.1%	172,340	5.2%	0.6	4.9%
Subtotal (Top Seven States)	2,027.0	83.6%	2,691,001	80.7%	9.8	81.1%
Other(c)	397.2	16.4%	644,517	19.3%	2.4	18.9%
Total Regulated Businesses	\$ 2,424.2	100.0%	3,335,518	100.0%	12.2	100.0%

- (a) Includes Illinois-American Water Company, which we refer to as ILAWC and American Lake Water Company, also a regulated subsidiary in Illinois.
 (b) West Virginia-American Water Company, which we refer to as WVAWC, and its subsidiary Bluefield Valley Water Works Company.
 (c) Includes data from our operating subsidiaries in the following states: Arizona, Georgia, Hawaii, Iowa, Kentucky, Maryland, Michigan, New Mexico, New York, Ohio, Tennessee, Texas and Virginia.

Approximately 83.6% of operating revenue from our Regulated Businesses in 2010 was generated from approximately 2.7 million customers in our seven largest states, as measured by operating revenues. In fiscal year 2010, no single customer accounted for more than 10% of our annual operating revenue.

Overview of Networks, Facilities and Water Supply

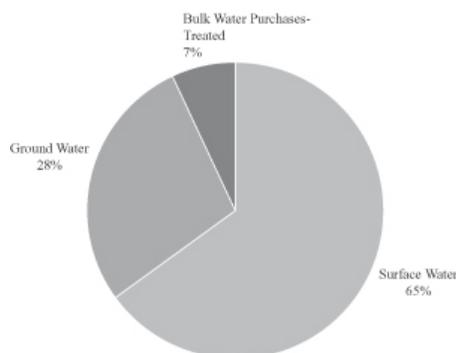
Our Regulated Businesses operate in approximately 1,600 communities in 20 states in the United States. Our primary operating assets include approximately 90 surface water treatment plants, 600 groundwater treatment plants, 1,200 wastewater treatment facilities, 1,300 treated water storage facilities, 1,300 pumping stations and 100 dams and 49,000 miles of mains and collection pipes. We own substantially all of the assets used by our Regulated Businesses. We generally own the land and physical assets used to store, extract and treat source water. Typically, we do not own the water itself, which is held in public trust and is allocated to us through contracts and allocation rights granted by federal and state agencies or through the ownership of water rights pursuant to local law. Maintaining the reliability of our networks is a key activity of our Regulated Businesses. We have ongoing main renewal programs in all states in which our Regulated Businesses operate. These programs consist of both rehabilitation of existing mains and replacement of mains that have reached the end of their useful service life.

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Our ability to meet the existing and future water demands of our customers depends on an adequate supply of water. Drought, governmental restrictions, overuse of sources of water, the protection of threatened species or habitats or other factors may limit the availability of ground and surface water. When weather conditions are extremely dry and even if our water supplies are sufficient to serve our customers, our systems may be affected by drought-related warnings and/or water usage restrictions imposed by governmental agencies, purchase supply allocations and mandatory conservation measures. These restrictions may be imposed at a regional or state level and may affect our service areas regardless of our readiness to meet unrestricted customer demands. We employ a variety of measures to ensure that we have adequate sources of water supply, both in the short-term and over the long-term. The geographic diversity of our service areas tends to mitigate some of the effect of weather extremes for the Company as a whole. In any given summer, some areas are likely to experience drier than average weather while other areas will experience wetter than average weather.

Our Regulated Businesses are dependent upon a defined source of water supply. Our Regulated Businesses obtain their water supply from surface water sources such as reservoirs, lakes, rivers and streams. In addition, we also obtain water from wells and purchase water from other water suppliers.

The following chart sets forth the sources of water supply for our Regulated Businesses for 2010 by volume:



In our long-term planning, we evaluate quality, quantity, growth needs and alternate sources of water supply as well as transmission and distribution capacity. Sources of supply are seasonal in nature and weather conditions can have a pronounced effect on supply. In order to ensure that we have adequate sources of water supply, we use comprehensive planning processes and maintain drought and contingency plans to minimize the potential impact on service through a wide range of weather fluctuations. In connection with supply planning for most surface or groundwater sources, we employ sophisticated models to determine safe yields under different rainfall and drought conditions. Surface and groundwater levels are routinely monitored for all supplies so that supply capacity may be predicted and mitigated, as needed, through demand management and additional supply development.

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The percentage of finished water supply by source type for our top seven states by Regulated Businesses revenues for 2010 is as follows:

	Ground Water	Surface water	Purchased water
New Jersey	28%	67%	5%
Pennsylvania	6%	93%	1%
Illinois	30%	56%	14%
Missouri(a)	12%	87%	1%
Indiana	57%	42%	1%
California(b)	68%	—	32%
West Virginia	—	99%	1%

- (a) There are limitations in our Joplin service area where the projected source of water supply capacity is unable to meet projected peak demands under drought conditions. To manage this issue on the demand side, the water use of a large industrial customer has been restricted under an interruptible tariff. Additional wells have been and will be developed to address short-term supply deficiencies. Missouri-American Water Company is working with a consortium of agencies to determine a long-term supply solution for the Joplin, Missouri region.
- (b) In Monterey, in order to augment our sources of water supply, we have implemented conservation rates and other programs to address demand, are utilizing aquifer storage and recovery facilities to store winter water for summer use and in December 2010, we obtained approval from the California Public Utility Commission for construction of a regional desalination plant. We also are designing new groundwater wells in our Larkfield district, and in other areas, we are making arrangements to extend or expand our purchase of water from neighboring water providers.

The level of water treatment that we apply varies significantly depending upon the quality of the water source and customer stipulations. Surface water sources, such as rivers, typically require significant treatment, while some groundwater sources, such as aquifers, require chemical treatment only. In addition, a small amount of treated water is purchased from neighboring water purveyors. Treated water is transported through an extensive transmission and distribution network, which includes underground pipes, above ground storage facilities and numerous pumping facilities with the ultimate distribution of the treated water to the customers' premises. We also have installed production meters to measure the water that we deliver to our distribution network. We employ a variety of methods of customer meter reading to monitor consumption; ranging from meters with mechanical registers where consumption is manually recorded by meter readers to meters with electronic registers capable of transmitting consumption data to proximity devices (touch read) or via radio frequency to mobile or fixed network data collectors. The majority of new meters are able to support future advances in electronic meter reading.

Wastewater services involve the collection of wastewater from customers' premises through sewer lines. The wastewater is then transported through a sewer network to a treatment facility, where it is treated to meet required effluent standards. The treated wastewater is finally returned to the environment as effluent, and the solid waste byproduct of the treatment process is disposed of in accordance with local standards.

Customers

We have a large and geographically diverse customer base in our Regulated Businesses. For the purposes of our Regulated Businesses, each active customer represents a connection to our water and/or wastewater networks. As in the case of apartment complexes, businesses and many homes, multiple individuals may be served by a single connection.

Residential customers make up the large majority of our customer base in all of the states in which we operate. In 2010, residential customers accounted for 91.4% of the customers and 60.3% of the operating revenue

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of our Regulated Businesses. Residential customers generally provide for stable operating revenue over time and across regions. We also serve commercial customers, such as shops and businesses, industrial customers, such as large-scale manufacturing and production operations, and public authorities, such as government buildings and other public sector facilities, including schools. We supply water to private fire customers for use in fire suppression systems in office buildings and other facilities and also provide bulk water supplies to other water utilities for distribution to their own customers.

The following table sets forth the number of water and wastewater customers (by customer class) for our Regulated Businesses as of December 31, 2010, 2009, and 2008:

	December 31,					
	2010		2009		2008	
	Water	Wastewater	Water	Wastewater	Water	Wastewater
Residential	2,896,777	151,122	2,888,667	149,969	2,883,255	149,007
Commercial	226,156	6,615	226,129	6,552	224,969	6,540
Industrial	4,160	13	4,375	13	4,537	14
Private fire	34,451	13	33,911	4	32,753	4
Public authority & other	16,009	202	16,008	201	16,023	221
Total	3,177,553	157,965	3,169,090	156,739	3,161,537	155,786

The following table sets forth water services operating revenue by customer class and wastewater services operating revenue, excluding other water revenues, for our Regulated Businesses for 2010, 2009, and 2008:

	Year Ended December 31,		
	2010	2009	2008
	(in millions)		
Water service			
Residential	\$ 1,384.3	\$ 1,259.9	\$ 1,195.1
Commercial	472.9	429.1	406.2
Industrial	112.5	99.7	101.8
Public and other	296.6	272.0	255.6
Total water services	\$ 2,266.3	\$ 2,060.7	\$ 1,958.7
Wastewater services	94.9	89.9	80.2
Total	\$ 2,361.2	\$ 2,150.6	\$ 2,038.9

Substantially all of our regulated water customers are metered, which allows us to measure and bill for our customers' water consumption, typically on a monthly basis. Our wastewater customers are billed either on a fixed charge basis or based on their water consumption.

Customer usage of water is affected by weather conditions, particularly during the summer. Our water systems generally experience higher demand in the summer due to the warmer temperatures and increased usage by customers for lawn irrigation and other outdoor uses. Summer weather that is cooler and wetter than average generally serves to suppress customer water demand and can have a downward effect on water operating revenue and operating income. Conversely, when weather conditions are extremely dry and even if our water supplies are sufficient to serve our customers, our systems may be affected by drought-related warnings and/or water usage restrictions imposed by governmental agencies, thereby reducing customer demand and operating revenue. These restrictions may be imposed at a regional or state level and may affect our service areas, regardless of our readiness to meet unrestricted customer demands. Other factors affecting our customers' usage of water include conservation initiatives, including the use of more efficient household fixtures and appliances among residential

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consumers; declining household sizes in the United States; and deterioration in the economy and credit markets which could have an adverse impact on our industrial and commercial customers' operational and financial performance.

Supplies

Our water and wastewater operations require an uninterrupted supply of chemicals, energy and fuel, as well as maintenance material and other critical inputs. Many of these inputs are subject to short-term price volatility. Short-term volatility is partially mitigated through existing procurement contracts, current supplier continuity plans and the regulatory rate setting process.

Because of our geographic diversity, we maintain relationships with many chemical, equipment and service suppliers in the marketplace, and we do not rely on any single entity for a material amount of our supplies. We also employ a strategic sourcing process intended to ensure reliability in supply and long-term cost effectiveness. As a result of our strategic sourcing process and our strong relationships with suppliers, we are able to mitigate interruptions in the delivery of the products and services that are critical to our operations. For example, during Hurricane Katrina, we were challenged to locate chemical suppliers not affected by the hurricane. As a result of our previously negotiated and established relationships with a network of preferred suppliers, we were able to secure a supply of materials and to continue our operations in the affected areas without interruptions.

We typically have a combination of standby power generation or dual electric service feeds at key facilities, multiple water production facilities, emergency interconnections with adjacent water systems and finished water storage that keep our operations running in the event of a temporary loss of our primary energy supplies.

Regulation

Economic Regulation

Our subsidiaries in the states in which we operate our Regulated Businesses are generally subject to extensive economic regulation by their respective state PUCs. The term "economic regulation" is intended to indicate that these state PUCs regulate the economic aspects of service to the public from systems that fall within their jurisdiction, but do not generally establish water quality standards, which are typically set by the United States Environmental Protection Agency ("EPA") and/or state environmental authorities and enforced through state environmental or health agencies. State PUCs have broad authority to regulate many of the economic and service aspects of the utilities that fall within their jurisdiction. For example, state PUCs issue certificates of public convenience and necessity (or similar authorizations) that typically are required for a company to provide public utility services in specific areas of the state. They also must approve the rates and conditions under which service is provided to customers and have extensive authority to establish rules and regulations under which the utilities operate. Although specific authority might differ from state to state, in most states, these state PUCs approve rates, accounting treatments, long-term financing programs, significant capital expenditures and plant additions, transactions and relationships between the regulated subsidiary and affiliated entities, reorganizations and mergers and acquisitions, in many instances prior to their completion. The jurisdiction exercised by each state PUC is prescribed by state laws and regulations and therefore varies from state to state. Regulatory policies not only vary from state to state, they may change over time. These policies will affect the timing as well as the extent of recovery of expenses and the realized return on invested capital. Our results of operations are significantly affected by rates authorized by the state PUCs in the states in which we operate, and we are subject to risks and uncertainties associated with rate stay-outs and delayed or inadequate rate recovery.

Economic regulation of utilities involves many competing, and occasionally conflicting, public interests and policy goals. The primary responsibility of state PUCs is to maintain the overall public interest by balancing the interests of customers and the utility and its stockholders. For example, it may be cost beneficial to develop a new treatment plant, but aquifer and land use concerns may suggest the higher cost alternative of piping the resource to the customer. Although the specific approach to economic regulation does vary, certain general

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principles are consistent across the states in which our regulated subsidiaries operate. Based on the United States Constitution and state constitutions that prohibit confiscation of property without due process of law and just compensation, as well as state statutory provisions and court precedent, utilities are entitled to recover, through rates charged to customers, prudent and reasonable operating costs as well as an opportunity to earn an appropriate return on and recovery of prudent, used and useful capital investment necessary to provide service to customers. The state PUCs will also generally accord a utility the right to serve specific areas and will also provide investor-owned utilities with limited protection from competition because the requirement of an investor-owned utility to operate pursuant to a certificate of public convenience and necessity (or similar authorizations) typically prevents other investor-owned utilities from competing with it in the authorized area. In return, the utility undertakes the obligation to provide reliable service on a nondiscriminatory basis to all customers within the authorized area.

Our operating revenue is typically determined by reference to a volumetric charge based on consumption and a base fee component set by a tariff approved by the relevant state PUC. Certain states have approved consolidated rates or single-tariff pricing. Consolidated rates or single-tariff pricing is the use of a unified rate structure for multiple water systems that are owned and operated by a single utility, but may or may not be contiguous or physically interconnected. The single-tariff pricing structure may be used fully or partially in a state and based on costs that are determined on a state-wide or intra-state regional basis, thereby moderating the impact of periodic fluctuations in local costs while lowering administrative costs for us and our customers. For states that do not employ single tariffs, we may have multiple general rate cases filed at any given point in time.

The process to obtain approval for a change in rates involves filing a petition or "rate case" with the state PUC on a periodic basis as determined by our need to recover capital expenditures and operating costs. Rate cases are normally initiated by the regulated utility whenever the utility determines it needs to recover increased operating expenses or a return on new capital investment, or otherwise determines that its current authorized return is not sufficient, given current market conditions, to provide a reasonable return on investment. A state PUC may also initiate a rate proceeding or investigation if it believes a utility may be earning in excess of its authorized rate of return. PUCs may also impose other conditions on the content and timing of filings designed to affect rates. Rate cases often involve a lengthy administrative process which can be costly. The utility, the state PUC staff, consumer advocates, and other interveners who may participate in the process, prepare and file evidence, consisting of supporting testimony and documentation. Data from a certain twelve month period of time typically forms the basis for a rate filing and is generally known as the "test year." State statutes and PUC rules and precedent usually determine whether the test year should be based on a historical period, a historical period adjusted for certain "known and measurable" changes or forecasted data. The majority of our states require the test year to be based on a historical period or a historical period adjusted for certain known and measurable changes.

The evidence is presented in public hearings in connection with the rate case. These hearings, which are economic and service quality fact-finding in nature, are typically conducted in a trial-like setting before the state PUC or an administrative law judge. During the process, the utility is required to provide PUC staff and interveners with all relevant information they may request concerning the utility's operations, costs and investments. The sworn evidentiary record forms the basis for a state PUC decision.

Some state PUCs are more restrictive than others with regard to the types of expenses and investments that may be recovered in rates as well as with regard to the transparency of their rate-making processes and how they reach their final rate determinations. However, in evaluating a rate case, state PUCs typically focus on the aforementioned six areas:

- the amount and prudence of investment in facilities considered "used and useful" in providing public service;
- the operating and maintenance costs and taxes associated with providing the service;
- the appropriate return on equity;
- the tariff or rate design that allocates revenue requirements equitably among the customer classes;

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- the quality of service the utility provides, including issues raised by customers; and
- revenue at existing rates.

Failure of the PUCs to recognize reasonable and prudent operating and capital costs can result in the inability of the utility to earn the allowed return. In addition, the decisions of state PUCs and the timing of those decisions can have a significant impact on the operations and earnings of our Regulated Businesses. Rate cases and other rate-related proceedings can take several months to over a year to complete. Therefore, there is frequently a delay, or regulatory lag, between the time one of our regulated subsidiaries makes a capital investment or incurs an operating cost increase and when those costs are reflected in rates. For instance, an unexpected increase in chemical costs or new capital investment that is not reflected in the most recently completed rate case will generally not begin to be recovered by the regulated subsidiary until filed and approved in the next rate case by the state PUC. Our rate case management program is guided by the goals of obtaining efficient recovery of costs of capital and utility operating and maintenance costs, including costs incurred for compliance with environmental regulations. The management team at each of our regulated subsidiaries anticipates the time required for the regulatory process and files rate cases with the goal of obtaining rates that reflect as closely as possible the cost of providing service at the time the rates become effective. Even if rates are sufficient, we face the risk that we will not achieve the rates of return on our invested capital and a return of our invested capital that are permitted by the state PUC.

Our regulated subsidiaries also pursue methods to minimize the adverse impact of regulatory lag and have worked with state PUCs and legislatures to implement a number of approaches to achieve this result. A number of states in which our Regulated Businesses operate have adopted efficient rate policies, including some form of single-tariff pricing, forward-looking test years, pass-through provisions or infrastructure surcharges. States that have adopted a full or partial single-tariff pricing policy include: Pennsylvania, New Jersey, West Virginia, Kentucky, Ohio, Indiana, Illinois and Iowa. Therefore, of our seven largest states, five have some form of single-tariff pricing.

Forward-looking test years and infrastructure surcharges reduce, but may not eliminate, the regulatory lag associated with the traditional method of recovering rates from state PUCs. Forward-looking test year mechanisms allow us to earn, on a more current basis, a return of our current or projected costs and a rate of return on our current or projected invested capital and other "known and measurable changes" in our business. Some states have permitted use of a fully forecasted test year instead of historical data to set rates. Examples of these states include: Illinois, Kentucky, New York, Tennessee and California. In all states in which we operate on a regulated basis, PUCs have allowed utilities to update historical data for some changes that occur for some limited period of time subsequent to the historical test year. This allows utilities to take account of some more current costs or capital investments in the rate-setting process. The extent to which historical data can be updated will generally vary from state to state and depends on whether the changes are known and measurable.

Also, an increasing number of states are permitting rates to be adjusted outside of a general rate case for certain costs, such as a return on capital investments to replace aging infrastructure or increases in costs beyond the utility's control, such as purchased water costs. This infrastructure surcharge mechanism allows our rates to be adjusted and charged to customers outside the context of a general rate proceeding for pre-specified portions of our capital expenditures to replace aging infrastructure closer to the time these capital projects are placed in service. Since infrastructure replacement is a significant element of capital expenditures made by our subsidiaries, such programs can reduce regulatory lag. Currently, Pennsylvania, Illinois, Missouri, Indiana, New York, California and Ohio have allowed the use of these infrastructure surcharges. These surcharges adjust periodically based on qualified capital expenditures being completed or anticipated in a future period. These surcharges are typically reset to zero when new base rates are effective and incorporate the costs of these infrastructure expenditures. New Jersey, California, Virginia and Illinois have allowed surcharges for purchased water costs. California has allowed surcharges for power and conservation, and New York has allowed surcharges for certain costs such as power and chemicals. These constructive regulatory mechanisms encourage us to maintain a steady capital expenditure program to repair and improve water and wastewater systems, as needed, by reducing the regulatory lag on the recovery of prudent expenditures.

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Also, some of the states in which we operate permit pass-through provisions that allow for an increase in certain operating costs, such as purchased power and property taxes to be passed on to and recovered from customers outside of a general rate case proceeding.

Another regulatory mechanism to address issues of regulatory lag includes the potential ability, in certain circumstances, to recover in rates a return on utility plant before it is in service, instead of capitalizing an allowance for funds used during construction. Examples of states that have allowed such recovery include: Pennsylvania, Ohio, Kentucky, Virginia, Illinois and California.

In addition, some states have permitted us to seek pre-approval of certain capital projects and associated costs. In this pre-approval process, the PUCs assess the prudence of such projects.

In some states, the PUC has implemented mechanisms to enhance utility revenue stability in light of conservation initiatives, decreasing per capita consumption or other factors. Sometimes referred to as "decoupling," these mechanisms, to some extent, separate recoverable revenues from volumes of water sold. For example, the state of California has decoupled revenues from water sold to help achieve their initiative to reduce water usage by 20% by 2020. This progressive regulation enables utilities to focus on conservation as revenues are not tied to sales. Also, as a result of this regulation, utilities would be less susceptible to consumption changes as a result of conservation, declining per capita usage or other factors affecting consumption. Likewise, New York has implemented a surcharge or credit based on the difference between actual net revenues for the preceding year and the net revenue target as estimated in the most recent rate case.

The infrastructure surcharge, pass-through provisions, the forward-looking test year and the allowance of a return on utility plant before it is actually in service are examples of mechanisms that present an opportunity to limit the risks associated with regulatory lag. Where allowed, we employ each of these mechanisms as part of our rate case management program to ensure efficient recovery of our costs and investment and to ensure positive short-term liquidity and long-term profitability. The ability of the Company to seek regulatory treatment as described above does not guarantee that the state PUCs will accept the Company's proposal in the context of a particular rate case. However, the Company strives to use these and other regulatory policies to address issues of regulatory lag wherever appropriate. It is also our strategy to expand their use in areas where they may not currently apply.

Environmental, Health and Safety and Water Quality Regulation

Our water and wastewater operations are subject to extensive United States federal, state and local laws and regulations, and in the case of our Canadian operations, Canadian laws and regulations governing the protection of the environment, health and safety, the quality of the water we deliver to our customers, water allocation rights and the manner in which we collect, treat, discharge and dispose of wastewater. We are also subject to certain regulations regarding fire protection services in the areas we serve. These regulations include the Safe Drinking Water Act, the Clean Water Act and other federal, state, local and Canadian laws and regulations governing the provision of water and wastewater services, particularly with respect to the quality of water we distribute. We also are subject to various federal, state, local and Canadian laws and regulations governing the storage of hazardous materials, the management and disposal of hazardous and solid wastes, discharges to air and water, the cleanup of contaminated sites, dam safety and other matters relating to the protection of the environment and health and safety. State PUCs also set conditions and standards for the water and wastewater services we deliver.

Environmental, health and safety and water quality regulations are complex and change frequently. The overall trend has been that they have become more stringent over time. We face the risk that as newer or stricter standards are introduced, they could increase our operating costs. We incur substantial costs associated with compliance with environmental, health and safety and water quality regulation to which our Regulated Businesses are subject. In the past, we have generally been able to recover costs associated with compliance related to environmental, health and safety standards, but this recovery is affected by regulatory lag and the corresponding uncertainties surrounding rate recovery.

We maintain a comprehensive environmental policy including: responsible business practices, compliance with environmental laws and regulations, effective use of natural resources, and stewardship of biodiversity. We believe that our operations are materially in compliance with, and in many cases surpass, minimum standards

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required by applicable environmental laws and regulations. Water samples across our water system are analyzed on a regular basis for material compliance with regulatory requirements. Across the Company, we conduct over one million water quality tests each year at our laboratory facilities and plant operations including continuous on-line instrumentations such as monitoring turbidity levels, disinfectant residuals and adjustments to chemical treatment based on changes in incoming water. For 2010, we achieved a score of greater than a 99.9% for drinking water compliance—a fact that we are immensely proud of—and according to the EPA statistics, American Water's performance has been far better than the industry average over the last several years. In fact, in 2009, American Water was 43 times better than the industry average for compliance with drinking water quality standards (Maximum Contaminant Levels) and 81 times better for compliance with drinking water monitoring and reporting requirements.

We participate in the Partnership for Safe Water, the United States EPA's voluntary program to meet more stringent goals for reducing microbial contaminants. With 66 of our 87 surface water plants receiving the program's "Director" award, we account for approximately one-third of the 200 plants receiving such awards nationwide. In addition, 62 American Water plants have received the "Five-Year Phase III" award, while 26 have been awarded the "Ten-Year Phase III" award.

Safe Drinking Water Act

The Federal Safe Drinking Water Act and regulations promulgated thereunder establish national quality standards for drinking water. The EPA has issued rules governing the levels of numerous naturally occurring and man-made chemical and microbial contaminants and radionuclides allowable in drinking water and continues to propose new rules. These rules also prescribe testing requirements for detecting contaminants, the treatment systems which may be used for removing contaminants and other requirements. Federal and state water quality requirements have become increasingly more stringent, including increased water testing requirements, to reflect public health concerns.

To effectuate the removal or inactivation of microbial organisms, the EPA has promulgated various rules to improve the disinfection and filtration of drinking water and to reduce consumers' exposure to disinfectants and byproducts of the disinfection process. In January 2006, the EPA promulgated the Long-term 2 Enhanced Surface Water Treatment Rule and the Stage 2 Disinfectants and Disinfection Byproduct Rule. In October 2006, the EPA finalized the Ground Water Rule, applicable to water systems providing water from underground sources. In 2006, the EPA also proposed revisions to the monitoring and reporting requirements of the existing Lead and Copper Rule. In 2011, we anticipate that the EPA will propose revisions to the Total Coliform Rule. We have been actively involved in the revisions to this rule and were part of a Federal Advisory Committee appointed to negotiate the changes. The EPA is actively considering regulations for a number of contaminants, including hexavalent chromium, fluoride, nitrosamines, perchlorate, some pharmaceuticals and certain volatile organic compounds, but we do not anticipate that any of these regulations will be completed in 2011.

Although it is difficult to project the ultimate costs of complying with the above or other pending or future requirements, we do not expect current requirements under the Safe Drinking Water Act to have a material impact on our operations or financial condition. In addition, capital expenditures and operating costs to comply with environmental mandates traditionally have been recognized by PUCs as appropriate for inclusion in establishing rates. As a result, we expect to fully recover the operating and capital costs resulting from these pending or future requirements.

Clean Water Act

The Federal Clean Water Act regulates discharges from drinking water and wastewater treatment facilities into lakes, rivers, streams and groundwater. In addition to requirements applicable to our wastewater collection systems, our operations require discharge permits under the National Pollutant Discharge Elimination System, ("NPDES"), permit program established under the Clean Water Act. Pursuant to the NPDES program, the EPA

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or implementing states set maximum discharge limits for wastewater effluents and overflows from wastewater collection systems. We believe that we maintain the necessary permits and approvals for the discharges from our water and wastewater facilities. From time to time, discharge violations occur at our facilities, some of which result in fines. We do not expect any such violations or fines to have a material impact on our results of operations or financial condition.

Other Environmental, Health and Safety and Water Quality Matters

Our operations also involve the use, storage and disposal of hazardous substances and wastes. For example, our water and wastewater treatment facilities store and use chlorine and other chemicals which generate wastes that require proper handling and disposal under applicable environmental requirements. We also could incur remedial costs in connection with any contamination relating to our operations or facilities or our off-site disposal of wastes. Although we are not aware of any material cleanup or decontamination obligations, the discovery of contamination or the imposition of such obligations in the future could result in additional costs. Our facilities and operations also are subject to requirements under the United States Occupational Safety and Health Act and are subject to inspections thereunder. For further information, see "Business—Research and Development."

Certain of our subsidiaries are involved in pending legal proceedings relating to environmental matters. These proceedings are described further in the section entitled "Item 3—Legal Proceedings."

Competition and Condemnation

In our Regulated Businesses, we generally do not face direct or indirect competition in providing services in our existing markets because (i) we operate within those markets pursuant to certificates of public convenience and necessity (or similar authorizations) issued by state PUCs; and (ii) the high cost of constructing a new water and wastewater system in an existing market creates a barrier to market entry. Our Regulated Businesses do face competition from governmental agencies, other investor-owned utilities and strategic buyers that are entering new markets and/or making strategic acquisitions. Consolidation is changing the competitive landscape as small local utilities struggle to meet their capital spending requirements and look to partner with investor-owned utilities. We also face competition in offering services to new real estate developers, where we compete with others on the basis of the financial terms we offer for our services, the availability of water and our ability to commence providing services on a timely basis. Our largest investor-owned competitors, based on a comparison of operating revenues and population served, are Aqua America Inc., United Water (owned by Suez Environnement), American States Water Co. and California Water Services Group.

The certificates of public convenience and necessity (or similar authorizations) pursuant to which we operate our Regulated Businesses do not prevent municipalities and rural water and wastewater districts from competing with us to provide water and wastewater utility services. Further, the potential exists that portions of our subsidiaries' utility assets could be acquired by municipalities or other local government entities through one or more of the following methods:

- eminent domain (also known as condemnation);
- the right of purchase given or reserved by a municipality or political subdivision when the original certificate was granted; and
- the right of purchase given or reserved under the law of the state in which the utility subsidiary was incorporated or from which it received its certificate.

The acquisition consideration related to such a transaction initiated by a local government may be determined consistent with applicable eminent domain law, or may be negotiated or fixed by appraisers as prescribed by the law of the state or in the particular franchise or charter. We believe our operating subsidiaries

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would be entitled to fair market value for any assets required to be sold, and we are of the opinion that fair market value would be in excess of the book value for such assets.

We are periodically subject to condemnation proceedings in the ordinary course of business. On September 5, 2008, pursuant to a condemnation proceeding, California-American Water Company ("CAWC") sold the assets of our Felton, California water system, which served approximately 1,330 customers, to the San Lorenzo Valley Water District. The next most recent sale of our water and wastewater systems under threat of condemnation occurred in 2003. We actively monitor condemnation activities that may affect us as soon as we become aware of them. We do not believe that condemnation poses a material threat to our ability to operate our Regulated Businesses.

Our Market-Based Operation

In addition to our Regulated Businesses, we operate the following Market-Based Operations, which generated \$311.8 million of operating revenue in 2010 representing 11.5% of total operating revenue for the same periods. Of the lines of business outlined below, no single group within our Market-Based Operations generates in excess of 10% of our aggregate revenue.

Contract Operations Group

Our Contract Operations Group enters into public/private partnerships, including O&M and DBO contracts for the provision of services to water and wastewater facilities for the United States military, municipalities, the food and beverage industry and other customers. We typically make no capital investment under these contracts with municipalities and other customers; instead we perform our services for a fee. During the contract term, we may make limited capital investments under our contracts with the United States military and certain industrial customers. Our Contract Operations Group generated revenue of \$225.3 million in 2010, representing 72.3% of revenue for our Market-Based Operations.

We are currently party to more than 250 contracts, varying in size and scope, across the United States and Canada, with contracts ranging in term from two to 50 years. Included in these contracts are nine 50-year contracts with the Department of Defense for the operation and maintenance of the water and wastewater systems and one 3-year sub-contract with a municipality, acting as primary contractor with the Department of Defense, for similar services on an interim basis until construction of new connections to an existing municipal facility is completed. All of our contracts with the U.S. government may be terminated, in whole or in part, prior to the end of the 50-year term for convenience of the U.S. government or as a result of default or non-performance by the subsidiary performing the contract. In either event, pursuant to the standard terms of the U.S. government contract termination provisions, we would be entitled to recover allowable costs that we may have incurred under the contract, plus the contract profit margin. The contract price for each of these contracts is subject to redetermination two years after commencement of operations and every three years thereafter. Price redetermination is a contract mechanism to periodically adjust the service fee in the next period to reflect changes in contract obligations and anticipated market conditions.

Homeowner Services Group

Our Homeowner Services Group through our Service Line Protection Program, provides services to domestic homeowners and smaller commercial establishments to protect against the cost of repairing broken or leaking water pipes and clogged or blocked sewer pipes inside and outside their accommodations.

We recently introduced LineSaver, an exclusive program for municipalities and public water systems that is available across the country. The LineSaver program involves partnering with municipalities to offer our protection programs to homeowners serviced by the municipal system.

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We entered into our first LineSaver program partnership with the city of Trenton, New Jersey and are currently discussing partnerships with municipalities across the nation. The Homeowner Services Group has also launched the LineSaver Program in Burlington, Iowa.

Our Homeowner Services Group has approximately 835,000 customer contracts in 17 of the states where we operate our Regulated Businesses.

Terratec Environmental Ltd

Our Market-Based Operations also includes our biosolids management group, Terratec, which is located in Canada and provides environmentally sustainable management and disposal of biosolids and wastewater by-products.

Competition

We face competition in our Market-Based Operations from a number of service providers, including Veolia Environnement, American States, OMI and Southwest Water, particularly in the area of O&M contracting. Securing new O&M contracts is highly competitive, as these contracts are awarded based on a combination of customer relationships, service levels, competitive pricing, references and technical expertise. We also face competition in maintaining existing O&M contracts to which we are a party, as these fixed term contracts frequently come up for renegotiation and are subject to an open bidding process.

Long-term Opportunities

In the course of pursuing our long-term strategy and growth initiatives, we will concentrate on optimizing our Regulated Businesses' portfolio as well as sharpening our focus on our Market-Based Operations. Optimization of the portfolio may include acquisition of water or wastewater utilities as well as the divestiture of certain operating companies as the result of the regulatory environment or size.

Customer growth in our Regulated Businesses is driven by (i) organic population growth within our authorized service areas; (ii) adding new customers to our regulated customer base by acquiring water and/or wastewater utility systems; and (iii) the sale of water to other community water systems. Generally, we add customers through tuck-ins of small water and/or wastewater systems, typically serving fewer than 10,000 customers, in close geographic proximity to areas where we currently operate our Regulated Businesses. We will continue to acquire water and wastewater utilities through tuck-ins. The proximity of tuck-in opportunities to our regulated footprint allows us to integrate and manage the acquired systems and operations using our existing management and to achieve efficiencies. Historically, pursuing tuck-ins has been a fundamental part of our growth strategy. We intend to continue to expand our regulated footprint geographically by acquiring water and wastewater systems in our existing markets and, if appropriate, certain markets in the United States where we do not currently operate our Regulated Businesses. We will also seek larger acquisitions that allow us to acquire multiple water and wastewater utility systems in our existing and new markets. Before entering new regulated markets, we will evaluate the regulatory environment to ensure that we will have the opportunity to achieve an appropriate rate of return on our investment while maintaining our high standards for quality, reliability and compliance with environmental, health and safety and water quality standards. These acquisitions may include acquisitions of companies that have operations in multiple markets.

While our business mix will continue to focus predominantly on regulated activities, we will pursue opportunities in the Market-Based Operations that are complementary to our Regulated Businesses and our capabilities. Our focus will center around public/private partnerships, including municipalities and divisions of the United States Department of Defense as well as industrial customers. We will continue to capitalize on our

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O&M expertise and our existing municipal and federal government relationships while building on our customer base in the industrial sector in identifying and bidding for new ventures that have attractive risk and return characteristics. We will also expand our Homeowner Services business with homeowners and smaller commercial establishments in areas within and beyond our existing regulated footprint.

Currently, management is performing a strategic review of American Water's portfolio of regulated and market-based business activities designed to identify potential opportunities for achieving a more rationalized portfolio, cost structure improvements and an enhanced financial profile. As a consequence of this review, management may dispose of certain assets or operations or acquire others.

In December 2010, we announced that our subsidiary, Missouri-American Water Company ("MAWC") entered into an agreement to purchase 11 regulated water systems and 59 wastewater systems in Missouri for approximately \$3 million. The transaction, which requires approval by the Missouri Public Service Commission, expands MAWC's presence in Missouri by approximately 10,000 people. Also, at the same time, we announced that we entered into a separate agreement to sell our regulated 51 water and five wastewater systems in Texas for approximately \$6 million. Texas-American Water Company serves approximately 16,000 people in the greater Houston metropolitan area. The acquisition requires approval by the Texas Commission on Environmental Quality. This transaction is a way to strengthen our operations, by creating better economies of scale and providing additional opportunities for both companies to continue providing excellent, local customer service.

In January 2011, we announced that we had entered into an agreement with EPCOR Water (USA) Inc. ("EPCOR USA") to sell 100 percent of the stock of our regulated water and wastewater operating companies located in Arizona and New Mexico, for an estimated sale price of \$470 million, subject to certain adjustments. Our total investment in both subsidiaries was approximately \$450 million as of December 31, 2010. We plan to use the proceeds from the sale to reduce both equity and debt financing. The completion of the transaction is subject to customary closing conditions including regulatory approval by the PUCs in both Arizona and New Mexico.

Research and Development

We established a formal research and development program in 1981 with the goal of improving water quality and operational effectiveness in all areas of our business. Our research and development personnel are located in New Jersey. In addition, our quality control and testing laboratory in Belleville, Illinois supports research through sophisticated testing and analysis. Since its inception, our research and development program has evolved to become a leading water-related research program, achieving advancements in the science of drinking water, including sophisticated water testing procedures and desalination technologies.

Since the formation of the EPA in 1970, we have collaborated with the agency to achieve effective environmental, health and safety and water quality regulation. This relationship has developed to include sharing of our research and national water quality monitoring data in addition to our treatment and distribution system optimization research. Our engagement with the EPA has helped us to achieve a leadership position for our company within the water and wastewater industry and has provided us with early insight into emerging regulatory issues and initiatives; thereby allowing us to anticipate and to accommodate our future compliance requirements.

In 2010, we spent \$2.77 million on research and development, which represents an increase of 0.7% over the \$2.75 million spent in 2009. We spent \$2.5 million on research and development costs in 2008. Approximately one-quarter of our research budget is comprised of competitively awarded outside research grants. Such grants reduce the cost of research and allow collaboration with leading national and international researchers.

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We believe that continued research and development activities are critical in providing quality and reliable service at reasonable rates, maintaining our leadership position in the industry and will provide us with a competitive advantage as we seek additional business with new and existing customers.

Support Services

Our American Water Works Service Company subsidiary provides shared services and corporate governance that achieve economies of scale through central administration. These services are provided predominantly to our Regulated Businesses under the terms of contracts with these companies that have been approved by state PUCs, where necessary. These services, which are provided at cost, may include accounting, administration, business development, corporate secretarial, education and training, engineering, financial, health and safety, human resources, information systems, legal, operations, procurement, rates, security, risk management, water quality and research and development. Limited services are also provided to our Market-Based Operations. These arrangements afford our operating companies professional and technical talent on an economical and timely basis.

We operate two national customer service centers, which are located in Alton, Illinois and Pensacola, Florida and employ approximately 700 people in total.

Our security department provides oversight and governance of physical and information security throughout our operations and is responsible for designing, implementing, monitoring and supporting active and effective physical and information security controls. We have complied with EPA regulations concerning vulnerability assessments and have made filings to the EPA as required. Vulnerability assessments are conducted regularly to evaluate the effectiveness of existing security controls and serve as the basis for further capital investment in security for the facility. Information security controls are deployed or integrated to prevent unauthorized access to company information systems, assure the continuity of business processes dependent upon automation, ensure the integrity of our data and support regulatory and legislative compliance requirements. While we do not make public comments on the details of our security programs, we are in contact with federal, state and local law enforcement agencies to coordinate and improve the security of our water delivery systems and to safeguard our water supply.

Employee Matters

Currently, we employ approximately 7,600 full-time employees. Of these, approximately 3,700 or 49% are represented by unions. We have 84 collective bargaining agreements in place with 18 different unions representing our unionized employees. In September 2010, we declared "impasse" in negotiations of our national benefits agreement with most of the labor unions representing employees in our Regulated Businesses. The prior agreement expired on July 31, 2010, however negotiations did not produce a new agreement. The Company implemented our "last, best and final" offer in order not to disrupt health care coverage for our employees. At this time, we don't believe that this circumstance will result in a system wide work stoppage. However, management has developed contingency plans that will be implemented as necessary if a work stoppage or strike does occur. Management does not expect that such a work stoppage or strike would have a material adverse impact on our results of operations, financial position or cash flows of the Company. Over one-third of our local union contracts will expire during 2011. In addition to the expired national benefit agreement, seven local union contracts covering approximately 1,000 employees expired without a new agreement being reached prior to December 31, 2010. In regards to these contracts, there have been no work stoppages.

Available Information

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended. We file or furnish annual, quarterly and current reports, proxy statements and other information with the United States Securities and Exchange Commission ("SEC"). You may obtain a copy of any of these reports, free of charge, from the Investor Relations section of our website, <http://www.amwater.com>, shortly after we file or furnish the information to the SEC. Information contained on our website shall not be deemed incorporated into, or to be a part of, this report.

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You may also obtain a copy of any of these reports directly from the SEC. You may read and copy any material we file or furnish with the SEC at their Public Reference Room, located at 100 F Street N.E., Washington, D.C. 20549. The phone number for information about the operation of the Public Reference Room is 1-800-732-0330 (if you are calling from within the United States), or 202-551-8090. Because we electronically file our reports, you may also obtain this information from the SEC internet website at <http://www.sec.gov>. You can obtain additional contact information for the SEC on their website.

The American Water corporate governance guidelines and the charters for each of the standing committees of the board of directors together with the American Water Code of Ethics and additional information regarding our corporate governance, are available on our website, <http://www.amwater.com>, and will be made available, without charge, in print to any shareholder who requests such documents from Investor Relations Department, American Water Works Company, Inc., 1025 Laurel Oak Road, Voorhees, NJ, 08043.

ITEM 1A. RISK FACTORS

We operate in a market and regulatory environment that involves significant risks, many of which are beyond our control. In addition to the other information included or incorporated by reference in this Form 10-K, the following factors should be considered in evaluating our business and future prospects. Any of the following risks, either alone or taken together, could materially and adversely affect our business, financial position or results of operations, which, in turn could adversely affect the value of our common stock.

Risks Related to Our Industry and Business

Our utility operations are subject to extensive economic regulation. Decisions by state PUCs and other regulatory agencies can significantly affect our business and results of operations.

Our Regulated Businesses provide water and wastewater services to our customers through subsidiaries that are economically regulated by state PUCs. Economic regulation affects the rates we charge our customers and has a significant impact on our business and results of operations. Generally, the state PUCs authorize us to charge rates that they determine are sufficient to recover our prudently incurred operating expenses, to enable us to finance the addition of new, or the replacement of existing, water and wastewater infrastructure and to allow us the opportunity to earn what they determine to be an appropriate rate of return on our invested capital and a return of our invested capital.

Our ability to meet our financial objectives depends upon the rates authorized by the various state PUCs. We periodically file rate increase applications with state PUCs. The ensuing administrative process may be lengthy and costly. We can provide no assurances that our rate increase requests will be granted. Even if approved, there is no guarantee that approval will be given in a timely manner or at a sufficient level to cover our expenses and the recovery of our investment and/or provide us an opportunity to earn an appropriate rate of return on our investment and a return of our investment. If the authorized rates are insufficient to cover operating expenses, to allow for the recovery of our investment and to provide an appropriate return on invested capital, or if rate increase decisions are delayed, our financial condition, results of operations, cash flows and liquidity may be adversely affected. Even if rates are sufficient, we face the risk that we will not achieve the rates of return on our invested capital and/or a return of our invested capital that are permitted by state PUCs as billings to customers are based on usage rather than a fixed amount.

Our operations and the quality of water we supply are subject to extensive environmental laws and regulations. Compliance with increasingly stringent laws and regulations could impact our operating costs; and violations of such laws and regulations could subject the company to substantial liabilities and costs.

Our water and wastewater operations are subject to extensive United States federal, state and local laws and regulations and, in the case of our Canadian operations, Canadian laws and regulations that govern the protection of the environment, health and safety, the quality of the water we deliver to our customers, water allocation rights, and the manner in which we collect, treat, discharge and dispose of wastewater. These requirements

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include the United States Clean Water Act of 1972, which we refer to as the Clean Water Act, and the United States Safe Drinking Water Act of 1974, which we refer to as the Safe Drinking Water Act, the amendments to and reauthorizations of the Clean Water and Safe Drinking Water Acts, and similar state and Canadian laws and regulations. We are also required to obtain various environmental permits from regulatory agencies for our operations. State PUCs also set conditions and standards for the water and wastewater services we deliver. If we deliver water or wastewater services to our customers that do not comply with regulatory standards, or otherwise violate environmental laws, regulations or permits, or other health and safety and water quality regulations, we could incur substantial fines, penalties or other sanctions or costs or damage to our reputation. In the most serious cases, regulators could force us to discontinue operations and sell our operating assets to another utility or municipality. Given the nature of our business which, in part, involves supplying water for human consumption, any potential non-compliance with, or violation of, environmental laws or regulations would likely pose a more significant risk to us than to a company not similarly involved in the water and wastewater industry.

We incur substantial operating and capital costs on an ongoing basis to comply with environmental laws and regulations and other health and safety and water quality regulations. These laws and regulations, and their enforcement, have tended to become more stringent over time, and new or stricter requirements could increase our costs. Although we may seek to recover ongoing compliance costs in our rates, there can be no guarantee that the various state PUCs or similar regulatory bodies that govern our Regulated Businesses would approve rate increases to recover such costs or that such costs will not adversely and materially affect our financial condition, results of operations, cash flows and liquidity.

We may also incur liabilities under environmental laws and regulations requiring us to investigate and clean up environmental contamination at our properties, including potential spills of hazardous chemicals, such as chlorine, which we use to treat water or at off-site locations where we have disposed of waste or caused adverse environmental impacts. The discovery of previously unknown conditions, or the imposition of cleanup obligations in the future, could result in significant costs and could adversely affect our financial condition, results of operations, cash flows and liquidity. Such remediation costs may not be covered by our insurance policies and may make it difficult for us to secure insurance at acceptable rates in the future.

Changes in laws and regulations over which we have no control and changes in certain agreements can significantly affect our business and results of operations.

Any governmental entity that regulates our operations may enact new legislation or adopt new regulations or policies at any time, and new judicial decisions may change the interpretation of existing legislation or regulations at any time. The individuals who serve as regulators are elected or are political appointees. Therefore, elections which result in a change of political administration or new appointments may also result in changes in the individuals who serve as regulators and the policies of the regulatory agencies that they serve. New laws or regulations, new interpretations of existing laws or regulations, or changes in agency policy, including those as a response to shifts in public opinion, or conditions imposed during the regulatory hearing process may affect our business in a number of ways, including the following:

- making it more difficult for us to raise our rates and, as a consequence, to recover our costs or earn our expected rates of return;
- changing the determination of the costs, or the amount of costs, that would be considered recoverable in rate cases;
- changing water quality or delivery service standards or wastewater collection, treatment, discharge and disposal standards with which we must comply;
- restricting our ability to terminate our services to customers who owe us money for services previously provided or limiting our bill collection efforts;
- requiring us to provide water services at reduced rates to certain customers;

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- restricting our ability to buy or sell assets or issue securities;
- changing regulatory constructs that impact the benefits we expected to receive when we began offering services in a particular area;
- changing or placing additional limitations on change in control requirements relating to any concentration of ownership of our common stock;
- making it easier for governmental entities to convert our assets to public ownership via eminent domain;
- placing limitations, prohibitions or other requirements on the sharing of information and transactions by or between a utility and its affiliates, including the parent, its service company and any other subsidiary of the parent;
- restricting or prohibiting our extraction of water from rivers, streams, reservoirs or aquifers; and
- revoking or altering the terms of the certificates of public convenience and necessity (or similar authorizations) issued to us by state PUCs.

Any of these changes or any other changes in laws, regulations, judicial decisions, or agency policies applicable to us may have an adverse effect on our business, financial condition, results of operations, cash flows and liquidity.

Availability of water supplies, restrictions on use, natural hazards, weather conditions and competing uses may interfere with our sources of water, demand for water services and our ability to supply water to customers.

Our ability to meet the existing and future water demands of our customers depends on an adequate supply of water. As a general rule, sources of public water supply, including rivers, lakes, streams and groundwater aquifers are held in the public trust and are not owned by private interests. As such, we typically do not own the water that we use in our operations, and the availability of our water supply is established through allocation rights (based on statutory or common law principles) and passing-flow requirements set by governmental entities. Passing-flow requirements set minimum volumes of water that must pass through specified water sources, such as rivers and streams, in order to maintain environmental habitats and meet water allocation rights of downstream users. Allocation rights are imposed to ensure sustainability of major water sources and passing flow requirements are most often imposed on source waters from smaller rivers, lakes and streams. These requirements can change from time to time and adversely impact our water supply. Drought, overuse of sources of water, the protection of threatened species or habitats, or other factors may limit the availability of ground and surface water. For example, in our Monterey County, CA operations, in order to augment our sources of water supply, we have implemented conservation rates and other programs to address demand and are utilizing aquifer storage and recovery facilities to store winter water for summer use. In December 2010, we obtained approval from the state PUC for construction of a regional desalination plant, which is intended to provide an alternate water source for the Monterey Peninsula.

Governmental restrictions on water use may also result in decreased use of water services, even if our water supplies are sufficient to serve our customers, which may adversely affect our financial condition and results of operations. Seasonal drought conditions that would impact our water services are possible across all of our service areas. If a regional drought were to occur affecting our service areas and adjacent systems, governmental restrictions may be imposed on all systems within a region independent of the supply adequacy of any individual system. There were voluntary conservation efforts or water use restrictions implemented during certain periods of 2010 in parts of Virginia. Following drought conditions, water demand may not return to pre-drought levels even after restrictions are lifted.

Service interruptions due to severe weather events are possible across all our service areas. These include winter storms and freezing conditions in our colder climate service areas, high wind conditions in our service

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areas known to experience tornados, earthquakes in our service areas known to experience seismic activity, high water conditions for our facilities located in or near designated flood plains, hurricanes in our coastal service areas and severe electrical storms which are possible across all of our service areas. These weather events may affect the condition or operability of our facilities, limiting or preventing us from delivering water or wastewater services to our customers, or requiring us to make substantial capital expenditures to repair any damage. Any interruption in our ability to supply water or to collect, treat and properly dispose of wastewater, or any costs associated with restoring service, could adversely affect our financial condition and results of operations. Furthermore, losses from business interruptions or damage to our facilities might not be covered by our insurance policies and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

Declining water usage per residential customer may reduce our long-term revenues, financial condition and results of operations.

Increased water conservation, including through the use of more efficient household fixtures and appliances among residential consumers, combined with declining household sizes in the United States, has contributed to a trend of declining water usage per residential customer. Our Regulated Businesses are heavily dependent upon revenue generated from rates we charge to our residential customers for the volume of water they use. The rate we charge for our water is regulated by state PUCs, and we may not unilaterally adjust our rates to reflect changes in demand. Declining usage will have a negative impact on our long-term operating revenues if we are unable to secure rate increases or to grow our residential customer base to the extent necessary to offset the residential usage decline.

Regulatory and environmental risks associated with the collection, treatment and disposal of wastewater may impose significant costs.

The wastewater collection, treatment and disposal operations of our subsidiaries are subject to substantial regulation and involve significant environmental risks. If collection or sewage systems fail, overflow, or do not operate properly, untreated wastewater or other contaminants could spill onto nearby properties or into nearby streams and rivers, causing damage to persons or property, injury to aquatic life and economic damages, which may not be recoverable in rates. This risk is most acute during periods of substantial rainfall or flooding, which are the main causes of sewer overflow and system failure. Liabilities resulting from such damage could adversely and materially affect our business, results of operations and financial condition. Moreover, in the event that we are deemed liable for any damage caused by overflow, our losses might not be covered by insurance policies, and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

Our Regulated Businesses require significant capital expenditures and may suffer if we fail to secure appropriate funding to make investments, or if we suffer delays in completing major capital expenditure projects.

The water and wastewater utility business is very capital intensive. We invest significant amounts of capital to add, replace and maintain property, plant and equipment. In 2010, we invested \$765.6 million in net Company-funded capital improvements. We expect the level of capital expenditures necessary to maintain the integrity of our systems could increase in the future. We fund these projects from cash generated from operations, borrowings under our revolving credit facility and commercial paper programs and through the issuance of long-term debt and equity securities. We can provide no assurances that we will be able to access the debt and equity capital markets on favorable terms or at all.

In addition, we believe that our dividend policy could limit, but not preclude, our ability to pursue growth. In particular, this limitation could be significant, for example, with respect to large acquisitions and growth opportunities that require cash investments in amounts greater than our available cash or external financing resources. In order to fund construction expenditures, acquisitions (including tuck-in acquisitions), principal and interest payments on our indebtedness, and pay dividends at the level currently anticipated under our dividend

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policy, we expect that we will need additional financing. However, we intend to retain sufficient cash from operating activities after the distribution of dividends to fund a portion of our capital expenditures.

If we are unable to obtain sufficient capital, we may fail to maintain our existing property, plant and equipment, realize our capital investment strategies, meet our growth targets and successfully expand the rate base upon which we are able to earn future returns on our investment and a return of our investment. Even if we have adequate resources to make required capital expenditures, we face the additional risk that we will not complete our major capital expenditures on time, as a result of construction delays or other obstacles. Each of these outcomes could adversely affect our financial condition and results of operations. We also face the risk that after we make substantial capital expenditures, the rate increases granted to us by state PUCs may not provide a sufficient opportunity to recover our prudently incurred operating expenses and to allow us the opportunity to earn an appropriate rate of return on our invested capital and a return of our invested capital.

Our business is impacted significantly by weather conditions, which are subject to fluctuations. These fluctuations could adversely affect demand for our water service and our revenues.

Demand for our water during the warmer months is generally greater than during cooler months due primarily to additional requirements for water in connection with irrigation systems, swimming pools, cooling systems and other outside water use. Throughout the year, and particularly during typically warmer months, demand tends to vary with temperature, rainfall levels and rainfall frequency. In the event that temperatures during the typically warmer months are cooler than normal, if there is more rainfall than normal, and/or rainfall is more frequent than normal, the demand for our water may decrease and adversely affect our revenues.

The failure of, or the requirement to repair, upgrade or dismantle, any of our dams may adversely affect our financial condition and results of operations.

We own approximately 100 dams. A failure of any of those dams could result in injuries and downstream property damage for which we may be liable. The failure of a dam would also adversely affect our ability to supply water in sufficient quantities to our customers and could adversely affect our financial condition and results of operations. Any losses or liabilities incurred due to a failure of one of our dams might not be covered by insurance policies or be recoverable in rates, and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

We also are required from time to time to decommission, repair or upgrade the dams that we own. The cost of such repairs can be and has been material. We might not be able to recover such costs through rates. The inability to recover these higher costs or regulatory lag in the recovery of such costs can affect our financial condition, results of operations, cash flows and liquidity. The federal and state agencies that regulate our operations may adopt rules and regulations requiring us to dismantle our dams. In Monterey County, CA, we filed an application with the California Public Utilities Commission ("CPUC") on September 22, 2010 to seek approval for removal of the San Clemente Dam on the Carmel River. The application includes a proposal that certain funding for the project would come from state and federal sources. We can provide no assurances that any state or federal funding will be made available.

Any failure of our network of water and wastewater pipes and water reservoirs could result in losses and damages that may affect our financial condition and reputation.

Our operating subsidiaries distribute water and collect wastewater through an extensive network of pipes and store water in reservoirs located across the United States. A failure of major pipes or reservoirs could result in injuries and property damage for which we may be liable. The failure of major pipes and reservoirs may also result in the need to shut down some facilities or parts of our network in order to conduct repairs. Such failures and shutdowns may limit our ability to supply water in sufficient quantities to our customers and to meet the water and wastewater delivery requirements prescribed by governmental regulators, including state PUCs with

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jurisdiction over our operations, and adversely affect our financial condition, results of operations, cash flows, liquidity and reputation. Any business interruption or other losses might not be covered by insurance policies or be recoverable in rates, and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

Contamination of our sources of water could result in service interruptions and human exposure to hazardous substances and subject our subsidiaries to civil or criminal enforcement actions, private litigation and cleanup obligations.

Our water supplies are subject to contamination, including contamination from naturally-occurring compounds, chemicals in groundwater systems, pollution resulting from man-made sources, such as perchlorate and methyl tertiary butyl ether ("MTBE"), and possible terrorist attacks. In the event that our water supply is contaminated, we may have to interrupt the use of that water supply until we are able to substitute the supply of water from another water source, including, in some cases, through the purchase of water from a third-party supplier. In addition, we may incur significant costs in order to treat the contaminated source through expansion of our current treatment facilities, or development of new treatment methods. If we are unable to substitute water supply in a cost-effective manner, our financial condition, results of operations, cash flows, liquidity and reputation may be adversely affected. We might not be able to recover costs associated with treating or decontaminating water supplies through rates, or such recovery may not occur in a timely manner. Moreover, we could be held liable for environmental damage as well as damages arising from toxic tort, contractual obligations or other lawsuits or criminal enforcement actions, or other consequences arising out of human exposure to hazardous substances in our drinking water supplies.

Our business transformation initiative ("BT") involves risks, could result in higher than expected costs or otherwise adversely impact our operations and profitability.

We have undertaken a business transformation project, which is intended to upgrade our antiquated and manual processes and systems. This multi-year, enterprise-wide initiative is intended to support our broader strategic initiatives. The project is intended to optimize workflow throughout our field operations, improve our back-office operations and enhance our customer service capabilities. The scale and anticipated future costs associated with the business transformation project are significant and we could incur significant costs in excess of what we are planning to spend. Any technical or other difficulties in developing or implementing this initiative may result in delays, which, in turn, may increase the costs of the project. When we make adjustments to our operations, we may incur incremental expenses prior to realizing the benefits of a more efficient workforce and operating structure. Further, we may not realize the cost improvements and greater efficiencies we hope for as a result of the project. In addition, we can provide no guarantee that we will be able to achieve timely or adequate rate recovery of these increased costs associated with the transformation project.

Currently, we operate numerous systems that have varying degrees of integration, which can lead to inefficiencies, workarounds and rework. As such, delays in the initiative being put into service will also delay cost savings and efficiencies expected to result from the project. We may also experience difficulties consolidating our current systems, moving to a common set of operational processes and implementing a successful change management process. These difficulties may impact our customers and our ability to meet their needs efficiently. Any such delays or difficulties may have a material and adverse impact on our business, client relationships and financial results.

Our liquidity and earnings could be adversely affected by increases in our production costs, including the cost of chemicals, electricity, fuel or other significant materials used in the water and wastewater treatment process.

We incur significant production costs in connection with the delivery of our water and wastewater services. Our production costs are driven by purchased water, chemicals used to treat water and wastewater as well as

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electricity and fuel, which are used to operate pumps and other equipment used in water treatment and delivery and wastewater collection, treatment and disposal. We also incur production costs for waste disposal. For 2010, production costs accounted for 23.5% of our total operations and maintenance costs. These costs can and do increase, sometimes unexpectedly and in substantial amounts.

Our Regulated Businesses might not be able to recover increases in the costs of chemicals, electricity, fuel, other significant inputs or waste disposal through rates, or such recovery may not occur in a timely manner. Our Market-Based Businesses may not be able to recover these costs in contract prices or other terms. The inability to recover these higher costs can affect our financial condition, results of operations, cash flows and liquidity.

Risks associated with potential acquisitions or investments may adversely affect us.

We will continue to seek to acquire or invest in additional regulated water and/or wastewater systems that we believe will permit us to achieve a more rationalized portfolio, cost structure improvements and an enhanced financial profile, including acquiring systems in markets in the United States where we do not currently operate our Regulated Businesses and through tuck-ins. We will also continue to seek to enter into related market-based businesses and services that complement our businesses. These transactions may result in:

- incurrence of debt and contingent liabilities;
- dilutive issuances of our equity securities;
- failure to have or to maintain effective internal control over financial reporting;
- fluctuations in quarterly results;
- exposure to unknown risks and liabilities, such as environmental liabilities; and
- other acquisition-related expenses.

We may also experience difficulty in obtaining required regulatory approvals for acquisitions, and any regulatory approvals we obtain may require us to agree to costly and restrictive conditions imposed by regulators. We may not identify all significant risks when conducting due diligence for a transaction, and we could be exposed to potential liabilities for which we will not be indemnified. There may be difficulties integrating new businesses, including bringing newly acquired businesses up to the necessary level of regulatory compliance, retaining and integrating key personnel, achieving strategic objectives and integrating acquired assets and technological systems. The demands of identifying and transitioning newly acquired businesses or pursuing investment opportunities may also divert management's attention from other business concerns and otherwise disrupt our business. Any of these risks may adversely affect our financial condition, results of operations and cash flows.

Risks associated with potential disposition of certain assets may adversely affect us.

The Company is performing a strategic review of its portfolio of regulated and market-based business activities, designed to identify potential opportunities for achieving a more rationalized portfolio, cost structure improvements and an enhanced financial profile. As a consequence of this review, management may determine to seek to dispose of certain assets or operations. The demands of identifying and transitioning newly disposed businesses may divert management's attention from other business concerns and otherwise disrupt our business. We may also experience difficulty in obtaining required regulatory approvals for dispositions, and any regulatory approvals we obtain may require us to agree to costly and restrictive conditions imposed by regulators. Any of these risks may adversely affect our financial condition, results of operations and cash flows.

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Capital markets have experienced a significant period of dislocation and instability, which could affect our ability to meet our liquidity needs at reasonable cost and our ability to meet long-term commitments, which could adversely affect our financial condition and results of operations.

We rely on our revolving credit facility, commercial paper programs and the capital markets to satisfy our liquidity needs. Disruptions in the credit markets, changes in our credit ratings, or deterioration of the banking industry's financial condition could discourage or prevent lenders from meeting their existing lending commitments, extending the terms of such commitments or agreeing to new commitments. Market disruptions may also limit our ability to issue debt securities in the capital markets. In order to meet our short-term liquidity needs we borrowed under our existing \$840 million revolving credit facility. Commitments under this revolving credit facility of \$685 million mature on September 15, 2013, and the remaining \$155 million of commitments expire on September 15, 2012. American Water Capital Corp. ("AWCC"), our financing subsidiary, had no outstanding borrowings under the credit facilities and \$36.4 million of outstanding letters of credit under this credit facility as of February 22, 2011. AWCC had \$194.7 million of outstanding commercial paper as of February 22, 2011. We can provide no assurances that our lenders will meet their existing commitments or that we will be able to access the commercial paper or loan markets in the future on terms acceptable to us or at all.

Longer term disruptions in the capital and credit markets as a result of uncertainty, reduced financing alternatives, or failures of significant financial institutions could adversely affect our access to the liquidity needed for our business. Any disruption could require us to take measures to conserve cash until the market stabilizes or until alternative financing can be arranged. Such measures could include deferring capital expenditures, reducing or suspending dividend payments, and reducing other discretionary expenditures.

The resulting lack of available credit and increased volatility in the financial markets or changes to our credit ratings could adversely affect our financial condition, results of operations and our ability to manage our liquidity. In particular, as a result of higher interest rates on publicly issued debt securities, increased commercial paper borrowing costs, and increased costs related to variable rate debt, the Company's interest expense could increase and adversely impact our results of operations.

The capital market disruptions could result in higher interest rates on publicly issued debt securities and increased commercial paper borrowing costs. As a result, continuation of the market disruptions could increase the Company's interest expense and adversely impact our results of operations.

Market conditions may unfavorably impact the value of benefit plan assets and liabilities which then could require significant additional funding.

The performance of the capital markets affects the values of the assets that are held in trust to satisfy future obligations under the Company's pension and postretirement benefit plans and could significantly impact our results of operations and financial position. The Company has significant obligations in these areas and the Company holds significant assets in these trusts. These assets are subject to market fluctuations, which may affect investment returns, that may fall below the Company's projected return rates. A decline in the market value of the pension and postretirement benefit plan assets will increase the funding requirements under the Company's pension and postretirement benefit plans if the actual asset returns do not recover these declines in value. Additionally, the Company's pension and postretirement benefit plan liabilities are sensitive to changes in interest rates. As interest rates decrease, the liabilities increase, potentially increasing benefit expense and funding requirements. Further, changes in demographics, including increased numbers of retirements or increases in life expectancy assumptions may also increase the funding requirements of the obligations related to the pension and other postretirement benefit plans. Also, future increases in pension and other postretirement costs as a result of reduced plan assets may not be fully recoverable in rates, and our results of operations and financial position of the Company could be negatively affected.

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Our reliance on third-party suppliers poses significant risks to our business and prospects.

We contract with third parties for goods and services that are essential to our operations, such as maintenance services, pipes, chemicals, electricity, water, gasoline, diesel and other materials. We are subject to substantial risks because of our reliance on these suppliers. For example:

- our suppliers may not provide raw materials that meet our specifications in sufficient quantities;
- our suppliers may provide us with water that does not meet applicable quality standards or is contaminated;
- our suppliers may face production delays due to natural disasters, strikes, lock-outs, or other such actions;
- one or more suppliers could make strategic changes in the lines of products and services they offer; and
- some of our suppliers, such as small companies, may be more likely to experience financial and operational difficulties than larger, well-established companies, because of their limited financial and other resources.

As a result of any of these factors, we may be required to find alternative suppliers for the raw materials and services on which we rely. Accordingly, we may experience delays in obtaining appropriate raw materials and services on a timely basis and in sufficient quantities from such alternative suppliers at a reasonable price, which could interrupt services to our customers and adversely affect our revenues, financial condition, results of operations, cash flows and liquidity.

We have recorded a significant amount of goodwill, and we may never realize the full value of our intangible assets, causing us to record impairments that may negatively affect our results of operations or require us to effect additional dilutive equity issuances.

Our total assets include substantial goodwill. At December 31, 2010, our goodwill totaled \$1,250.7 million. The goodwill is primarily associated with the acquisition of American Water by an affiliate of RWE in 2003 and the acquisition of E'Town Corporation in 2001. Goodwill represents the excess of the purchase price the purchaser paid over the fair value of the net tangible and intangible assets acquired. Goodwill is recorded at fair value on the date of an acquisition and is reviewed annually or more frequently if changes in circumstances indicate the carrying value may not be recoverable. Annual impairment reviews are performed at November 30 of each year and interim reviews are performed when management determines that a triggering event has occurred. We have been required to reflect, as required by the applicable accounting rules, non-cash charges to operating results for goodwill impairments in the past. In the first quarter of 2009, we recorded a non-cash charge to operating results for a goodwill impairment in the amount of \$450.0 million. In addition, we recorded non-cash charges to operating results for a goodwill impairment in the amounts of \$750.0 million, \$509.3 million and \$227.8 million for the years ended December 31, 2008, 2007 and 2006, respectively. These amounts include impairments relating to discontinued operations. As a result of these impairments, net income was reduced by \$443.0 million, \$738.5 million, \$501.5 million and \$223.6 million in 2009, 2008, 2007 and 2006, respectively.

The Company may be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to the Company's performance. These market events could include a decline over a period of time of the Company's stock price, a decline over a period of time in valuation multiples of comparable water utilities, the lack of an increase in the Company's market price consistent with its peer companies or decreases in control premiums. A decline in the forecasted results in our business plan, such as changes in rate case results or capital investment budgets or changes in our interest rates, could also result in an impairment charge. Recognition of impairments of a significant portion of goodwill would negatively affect the Company's reported results of operations and total capitalization, the effect of which could be material and could make it more difficult to maintain its credit ratings, secure financing on attractive terms, maintain compliance with debt covenants and meet expectations of our regulators.

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Our Regulated Businesses compete with governmental entities, other regulated utilities, as well as strategic and financial buyers, for acquisition opportunities, which may hinder our ability to grow our business.

We compete with governmental entities, other regulated utilities, as well as strategic and financial buyers, for acquisition opportunities, including tuck-ins. Our competitors may impede our growth by purchasing water utilities near our existing operations, thereby preventing us from acquiring them. Competing governmental entities, utilities and strategic and financial buyers have challenged, and may in the future challenge, our applications for new service territories. Our growth could be hindered if we are not able to compete effectively for new territories with other companies or strategic and financial buyers that have lower costs of operations or that can submit more attractive bids.

The assets of our Regulated Businesses are subject to condemnation through eminent domain.

Municipalities and other government subdivisions have historically been involved in the provision of water and wastewater services in the United States, and organized movements may arise from time to time in one or more of the service areas in which our Regulated Businesses operate to convert our assets to public ownership and operation through the governmental power of eminent domain. Should a municipality or other government subdivision seek to acquire our assets through eminent domain, we may resist the acquisition. Contesting an exercise of condemnation through eminent domain may result in costly legal proceedings and may divert the attention of the affected Regulated Business's management from the operation of its business.

On September 5, 2008, under threat of condemnation, CAWC sold the assets of our Felton, California water system, which served approximately 1,330 customers, to the San Lorenzo Valley Water District. If a municipality or other government subdivision succeeds in acquiring the assets of one or more of our Regulated Businesses through eminent domain, there is a risk that we will not receive adequate compensation for the business, that we will not be able to keep the compensation, or that we will not be able to divest the business without incurring significant one-time charges.

We may not be able to fully utilize our U.S. and state net operating loss carryforwards.

As of December 31, 2010, we had U.S. federal and state net operating loss ("NOL") carryforwards of approximately \$1,185.3 million and \$714.7 million, respectively. Our federal NOL carryforwards begin to expire in 2024, and our state NOL carryforwards will expire between 2011 and 2030. Our ability to utilize our NOL carryforwards is primarily dependent upon our ability to generate sufficient taxable income. Moreover, because the RWE divestiture was considered an "ownership change" under Section 382 of the Internal Revenue Code, the amount of NOL carryforwards that may be utilized in any year is limited. Our management believes the federal NOL carryforwards are more likely than not to be recovered and currently require no valuation allowance. The establishment or increase of a valuation allowance would increase our deferred income tax assets and reduce our net income. However, at December 31, 2010, \$274.3 million of the state NOL carryforwards have been offset by a valuation allowance because the Company does not believe these NOLs are more likely than not to be realized in the future.

Our actual results may differ from those estimated by management in making its assessment as to our ability to use the NOL carryforwards. Moreover, changes in income tax laws, the economy and general business environment could affect the future utilization of the NOL carryforwards. If we are unable to fully utilize our NOL carryforwards to offset taxable income generated in the future, our financial position, results of operations and cash flows could be materially adversely affected.

Our Market-Based Operations, through American Water (excluding our regulated subsidiaries), provide performance guarantees and other forms of financial security to our public-sector and public clients that could be claimed by our clients or potential clients if we do not meet certain obligations.

Under the terms of some of our indebtedness and some of our agreements for the provision of services to water and wastewater facilities with municipalities, other governmental entities and other customers, American Water (excluding its regulated subsidiaries) provides guarantees of the performance of our Market-Based Operations, including financial guarantees or deposits, to ensure performance of certain obligations. At

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December 31, 2010, we had remaining performance commitments as measured by remaining contract revenue totaling approximately \$3,279.0 million, and this amount is likely to increase if our Market-Based Operations grow. The presence of these commitments may adversely affect our financial condition and make it more difficult for us to secure financing on attractive terms. All of our contracts with the Department of Defense for the operation and maintenance of water and wastewater systems may be terminated, in whole or in part, prior to the end of the 50-year term for convenience of the U.S. government or as a result of default or non-performance by the subsidiary performing the contract. The contract price for each of these military contracts is subject to redetermination two years after commencement of operations and every three years thereafter. Price redetermination is a contract mechanism to periodically adjust the service fee in the next period to reflect changes in contract obligations and anticipated market conditions. In addition, if the obligor on the instrument fails to perform certain obligations to the satisfaction of the party that holds the performance commitments, that party may seek to enforce the performance commitments against us or proceed against the deposit. In that event, our financial condition, results of operations, cash flows and liquidity could be adversely affected.

We operate a number of water and wastewater systems under O&M contracts and face the risk that the owners of those systems may fail to maintain those systems, which will negatively affect us as the operators of the systems.

We operate a number of water and wastewater systems under O&M contracts. Pursuant to these contracts, we operate the system according to the standards set forth in the applicable contract, and it is generally the responsibility of the owner to undertake capital improvements. In some cases, we may not be able to convince the owner to make needed improvements in order to maintain compliance with applicable regulations. Although violations and fines incurred by water and wastewater systems may be the responsibility of the owner of the system under these contracts, those non-compliance events may reflect poorly on us as the operator of the system and damage our reputation, and in some cases, may result in liability to the same extent as if we were the owner.

Our Market-Based Operations are party to long-term contracts to operate and maintain water and wastewater systems under which we may incur costs in excess of payments received.

Some of our Market-Based Operations enter into long-term contracts pursuant to which they agree to operate and maintain a municipality's, federal government's or other party's water or wastewater treatment and delivery facilities, which includes responsibility for certain major maintenance for some of those facilities, in exchange for an annual fee. Our Market-Based Operations are generally subject to the risk that costs associated with operating and maintaining the facilities may exceed the fees received from the municipality or other contracting party. In addition, directly or through our market-based subsidiaries, we often guarantee our Market-Based Operations' obligations under those contracts. Losses under these contracts or guarantees may adversely affect our financial condition, results of operations, cash flows and liquidity.

We rely on our information technology ("IT") systems to assist with the management of our business and customer and supplier relationships, and a disruption of these systems could adversely affect our business.

Our IT systems are an integral part of our business, and a serious disruption of our IT systems could significantly limit our ability to manage and operate our business efficiently, which, in turn, could cause our business and competitive position to suffer and cause our results of operations to be reduced. We depend on our IT systems to bill customers, process orders, provide customer service, manage construction projects, manage our financial records, track assets, remotely monitor certain of our plants and facilities and manage human resources, inventory and accounts receivable collections. Our IT systems also allow us to purchase products from our suppliers and bill customers on a timely basis, maintain cost-effective operations and provide service to our customers. Our IT systems are vulnerable to damage or interruption from:

- power loss, computer systems failures, and internet, telecommunications or data network failures;
- operator negligence or improper operation by, or supervision of, employees;
- physical and electronic loss of customer data due to security breaches, misappropriation and similar events;

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- computer viruses;
- intentional acts of vandalism and similar events; and
- hurricanes, fires, floods, earthquakes and other natural disasters.

Such damages or interruptions may result in physical and electronic loss of customer or financial data, security breaches, misappropriation and similar events. In addition, the lack of redundancy for certain of our IT systems, including billing systems, could exacerbate the impact on the Company of any of the foregoing events.

In addition, we may not be successful in developing or acquiring technology that is competitive and responsive to the needs of our business, and we might lack sufficient resources to make the necessary upgrades or replacements of our outdated existing technology to allow us to continue to operate at our current level of efficiency.

Our indebtedness could affect our business adversely and limit our ability to plan for or respond to changes in our business, and we may be unable to generate sufficient cash flows to satisfy our liquidity needs.

As of December 31, 2010, our indebtedness (including preferred stock with mandatory redemption requirements) was \$5,708.0 million, and our working capital (defined as current assets less current liabilities) was in a deficit position. Our indebtedness could have important consequences, including:

- limiting our ability to obtain additional financing to fund future working capital or capital expenditures;
- exposing us to interest rate risk with respect to the portion of our indebtedness that bears interest at a variable rate;
- limiting our ability to pay dividends on our common stock or make payments in connection with our other obligations;
- likely requiring that a portion of our cash flows from operations be dedicated to the payment of the principal of and interest on our debt, thereby reducing funds available for future operations, acquisitions, dividends on our common stock or capital expenditures;
- limiting our ability to take advantage of significant business opportunities, such as acquisition opportunities, and to react to changes in market or industry conditions; and
- placing us at a competitive disadvantage compared to those of our competitors that have less debt.

In order to meet our capital expenditure needs, we may be required to make additional borrowings under our credit facilities or be required to issue new debt securities in the capital markets. We can provide no assurances that we will be able to access the debt capital markets or do so on favorable terms. If new debt is added to our current debt levels, the related risks we now face could intensify, limiting our ability to refinance existing debt on favorable terms.

We will depend primarily on operations to fund our expenses and to pay the principal and interest on our outstanding debt. Our ability to meet our expenses thus depends on our future performance, which will be affected by financial, business, economic, competitive, legislative, regulatory and other factors beyond our control. If we do not have sufficient cash flows to pay the principal and interest on our outstanding debt, we may be required to refinance all or part of our existing debt, sell assets, borrow additional funds or sell additional equity. If our business does not generate sufficient cash flows from operations, or if we are unable to incur indebtedness sufficient to enable us to fund our liquidity needs, we may be unable to plan for or respond to changes in our business that would prevent us from maintaining or increasing our business and cause our operating results and prospects to be affected adversely.

Our failure to comply with restrictive covenants under our credit facilities could trigger prepayment obligations.

Our failure to comply with the restrictive covenants under our credit facilities could result in an event of default, which, if not cured or waived, could result in us being required to repay or refinance (on less favorable terms)

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these borrowings before their due date. If we are forced to repay or refinance (on less favorable terms) these borrowings, our results of operations and financial condition could be adversely affected by increased costs and rates. In 2007, we were not in compliance with reporting covenants contained in some of the debt agreements of our subsidiaries. Such defaults under the reporting covenants were caused by our delay in producing our 2006 quarterly and audited annual consolidated financial statements. We have obtained all necessary waivers under the agreements. We can provide no assurance that we will comply in the future with all our reporting covenants and will not face an event of default under our debt agreements, or that such default will be cured or waived.

Work stoppages and other labor relations matters could adversely affect our results of operations.

Currently, approximately 3,700 of our employees, or 49% of our total workforce, are unionized and represented by 18 different unions. Approximately one-third of our 84 union collective bargaining agreements expire annually, with 38 agreements covering 1,546 employees scheduled to expire before the end of 2011. We might not be able to renegotiate labor contracts on terms that are favorable to us and negotiations or dispute resolutions undertaken in connection with our labor contracts could be delayed or become subject to the risk of labor actions or work stoppages. Labor actions, work stoppages or the threat of work stoppages, and our failure to obtain favorable labor contract terms during renegotiations may all adversely affect our financial condition, results of operations, cash flows and liquidity. In 2010, we declared "impasse" in negotiations of our national benefits agreement with most of the labor unions representing employees in our Regulated Businesses. The prior agreement expired on July 31, 2010, however negotiations did not produce a new agreement. The Company implemented our "last, best and final" offer in order not to disrupt health care coverage for our employees. We cannot provide assurance that a work stoppage or strike would not have a material adverse impact on our results of operations, financial position or cash flows.

Material weaknesses in the Company's internal controls over financial reporting existed during 2009. If we fail to maintain effective internal control over financial reporting, we may not be able to report our financial results accurately or on a timely basis. Any inability to report and file our financial results in an accurate and timely manner could harm our business and adversely impact the trading price of our common stock.

As a public company, we are required to comply with the Sarbanes-Oxley Act and other rules and regulations that govern public companies. In particular, we are required to certify our compliance with Section 404 of the Sarbanes-Oxley Act for the year ended December 31, 2010, which requires us to perform system and process evaluation and testing of our internal control over financial reporting to allow management and our registered public accounting firm to report on the effectiveness of our internal control over financial reporting. Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles ("GAAP"). However, from 2003 until the completion of our initial public offering in April 2008, as an indirect wholly-owned subsidiary of RWE, we were not required to maintain a system of effective internal controls or comply with the requirements of the SEC and the Sarbanes-Oxley Act, nor to prepare our own consolidated financial statements. In connection with the preparation of our consolidated financial statements as of December 31, 2006, we and our independent registered public accountants identified six material weaknesses in our internal controls over financial reporting, each of which could have resulted in a material misstatement of our annual or interim consolidated financial statements. Since that time, we have addressed all areas of material weakness. As of December 31, 2009 and December 31, 2010, we and our independent registered public accountants have tested the effectiveness of controls designated to address the weaknesses and, based on the results of these tests, no longer consider these control deficiencies to be material weaknesses. For further discussion, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Our Internal Control and Remediation Initiatives." Moreover, we cannot provide assurance that we have identified all, or that we will not in the future have additional, material weaknesses, any of which may subject us to additional regulatory scrutiny, and cause future delays in filing our financial statements and periodic reports with the SEC. Any such delays in the filing of our financial statements and

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periodic reports may result in a loss of public confidence in the reliability of our financial statements and sanctions could be imposed on us by the SEC. We believe that any such misstatements or delays could negatively impact our liquidity, access to capital markets, financial condition and the market value of our common stock or cause a downgrade in the credit ratings of American Water or AWCC.

We may be required to adopt International Financial Reporting Standards ("IFRS"), or other accounting or financial reporting standards, the ultimate adoption of which could negatively impact our business, financial condition or results of operations.

We could be required to adopt IFRS or other accounting or financial reporting standards different from GAAP in the United States of America, which is currently applicable to our accounting and financial reporting. In 2008, the SEC released a timetable for the adoption of IFRS according to which we could be required to adopt IFRS by 2016. Under GAAP, we are subject to the accounting procedures for accounting for the effects of certain types of regulation, which, among other things, allow us to defer certain costs if we believe it is probable that we will be allowed to recover those costs by future rate increases. Currently, IFRS does not contain provisions equivalent to the current GAAP accounting procedures. The implementation and adoption of new accounting or financial reporting standards could affect our reported performance, which in turn could favorably or unfavorably impact our business, financial condition or results of operations. Furthermore, the transition to and application of new accounting or financial reporting standards could result in increased administrative costs.

Derivative transactions may expose us to unexpected risk and potential losses.

We are party to an interest rate swap contract with a financial institution to hedge against the fair value of our debt and may enter into additional interest rate swap contracts in the future. Changes in the fair value of these derivative financial instruments are not cash flow hedges and, thus, are reported in income, and accordingly could materially affect our reported income in any period. In addition, our hedging strategy may not be effective to mitigate adverse effects on our profitability during any period in which interest rates change, and the costs of this hedging strategy may exceed the benefits. Moreover, in the light of current economic uncertainty and financial institution failures in the recent past, we may be exposed to the risk that our counterparty in a derivative transaction may be unable to perform its obligations as a result of being placed in receivership or otherwise. In the event that a counterparty to a material derivative transaction is unable to perform its obligations thereunder, we may experience material losses that could materially adversely affect our results of operations and financial condition.

The global economic and financial market environment may adversely affect our business and operations.

The existing and continuing global economic and financial market environment has caused, among other things, a general tightening in the credit markets, lower levels of liquidity, increases in the rates of default and bankruptcy, lower consumer and business spending, and lower consumer net worth, all of which could have a negative impact on our business, results of operations, financial condition and liquidity. Our customers and suppliers may or will be severely affected by the current economic turmoil. Current or potential customers and suppliers may no longer be in business, may be unable to continue to pay for our services or may decide to reduce their consumption of our services, all of which could lead to reduced demand for our services, reduced operating income, an increased incidence of customer payment delays, or defaults for services delivered. Further, suppliers may not be able to supply us in a timely manner, may increase prices, or go out of business, which could result in our inability to meet consumer demand. As such, a continuing negative global economic and financial market environment could adversely affect our financial condition, results of operations and cash flows.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

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ITEM 2. PROPERTIES

Our properties consist of transmission and distribution mains and conduits, water and wastewater treatment plants, pumping wells, tanks, meters, supply lines, dams, reservoirs, buildings, vehicles, land, easements, software rights and other facilities and equipment used for the operation of our systems, including the collection, treatment, storage and distribution of water, and the collection and treatment of wastewater. Substantially all of our properties are owned by our subsidiaries, and a substantial portion of our property is subject to liens of our mortgage bonds. We lease our corporate offices, equipment and furniture, located in Voorhees, New Jersey from certain of our wholly-owned subsidiaries. These properties are utilized by our directors, officers and staff in the conduct of the business.

Our regulated subsidiaries own, in the states in which they operate, transmission and distribution mains, pump stations, treatment plants, storage tanks, reservoirs and related facilities. A substantial acreage of land is owned by our Regulated Businesses, the greater part of which is located in watershed areas, with the balance being principally sites of pumping and treatment plants, storage reservoirs, tanks and standpipes. Our Market-Based Operations' properties consist mainly of spreading and waste transportation equipment, office furniture and IT equipment and are primarily located in New Jersey and Canada. Approximately 50% of all our properties are located in New Jersey and Pennsylvania.

We maintain property insurance against loss or damage to our properties by fire or other perils, subject to certain exceptions. For insured losses, we are self-insured to the extent that any losses are within the policy deductible or exceed the amount of insurance maintained. Any such losses could have a material adverse effect on our consolidated financial condition or results of operations.

We believe that our properties are generally maintained in good operating condition and in accordance with current standards of good water and wastewater works industry practice, and units of property are replaced as and when necessary.

ITEM 3. LEGAL PROCEEDINGS

In 1995, the California State Water Resources Control Board issued an administrative order to CAWC requiring CAWC to implement an alternative water supply in lieu of diversions from the Carmel River. The State Water Resources Control Board held new administrative hearings in the summer of 2008 to address claims that CAWC has exceeded its water diversion rights in the Carmel River and has not diligently pursued establishing an alternative water supply as required by the State Water Resources Control Board's 1995 order. The State Water Resources Control Board adopted a Cease and Desist Order applicable to CAWC on October 20, 2009. The 2009 Order finds that CAWC has not sufficiently implemented actions to terminate its unpermitted diversions from the Carmel River as required by the 1995 order. The 2009 Order requires, among other things, that CAWC significantly decrease its yearly diversions from the Carmel River according to a set reduction schedule running from the date the Order was adopted until December 31, 2016, at which point all unpermitted diversions must end. The 2009 Order also requires that CAWC plan, design and implement, within twenty-four months of the date the Order was adopted, projects designed to reduce the need for Carmel River diversions. We have appealed the 2009 Order to the Superior Court of California challenging the findings and requirements of that Order. We can provide no assurances, however, that the appeal will be successful or that, if unsuccessful, we will be able to comply with the requirements under the 2009 Order or that any such compliance will not result in material additional costs or obligations to us. On December 2, 2010, the state PUC approved CAWC's participation in a regional desalination project, which, when operating, is intended to fulfill CAWC's obligation under the 1995 order, in addition to other obligations.

In 1998, the National Oceanic and Atmospheric Administration, which we refer to as NOAA, listed the South Central California Coast Steelhead trout as threatened pursuant to the federal Endangered Species Act, and subsequently designated the Carmel River as critical habitat for those trout. In 2001, CAWC entered into a

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conservation agreement with NOAA, requiring CAWC to implement certain measures to protect the steelhead trout and its habitat in the Carmel River watershed, study the removal of the San Clemente Dam and explore long-term water sources other than a new reservoir in the Carmel River. Since that time, CAWC has implemented a number of measures to reduce the impact of its operations on the steelhead trout and other species, including pursuing permits to construct the previously mentioned desalination project as an alternative source of water. In early 2004, NOAA informed CAWC of its concern that CAWC's ongoing operations would cause the "take" of significant numbers of steelhead trout during the several remaining years required to implement the desalination project. In June 2006, CAWC and NOAA entered a settlement agreement whereby CAWC agreed to fund certain additional projects to improve habitat conditions for and aid in the recovery of steelhead trout in the Carmel River watershed. Under this 2006 agreement, CAWC is required, among other things, to make an initial payment of \$3.5 million plus six annual installments of \$1.1 million. The settlement agreement requires that all payments made by CAWC to NOAA be used for mitigation projects in the Carmel River watershed. NOAA has agreed not to assess any penalties or otherwise prosecute CAWC for any "take" of steelhead trout, so long as CAWC complies with the settlement agreement. Effective March 3, 2009, the Company and NOAA executed an amended settlement agreement to allow the required payments to be made to and managed by a California state agency under an existing mitigation program thereby ensuring that settlement payments will be used for mitigation projects in the Carmel River watershed. The 2009 amendment also extended the duration of the agreement for an additional year. Consistent with the amended agreement, the Company paid an initial \$3.5 million in April 2009, made the first \$1.1 million installment payment in July 2010, and is scheduled to make the second \$1.1 million installment payment in July 2011. The settlement agreement also requires the Company and NOAA to meet and negotiate a resolution to NOAA's concerns regarding changes to the Company's operations on the Carmel River to protect the fish and improve its habitat. The Company and NOAA are currently engaged in this second phase of negotiations. On March 14, 2008, the Sierra Club and the Carmel River Steelhead Association notified CAWC of their intent to file a citizen suit, 60 days therefrom, for violations of the federal Endangered Species Act alleging the "take" of steelhead trout by CAWC along the Carmel River and seeking injunctive relief to reduce river water diversions and increase river flow and fish passage facilities. On June 25, 2009, the Sierra Club and the Carmel River Steelhead Association filed suit in United States District Court for the Northern District of California, seeking to enjoin the Company's pumping on the Carmel River. The suit was dismissed on the Company's motion on January 8, 2010. The Sierra Club and the Carmel River Steelhead Association also filed an administrative complaint with the California State Water Resources Control Board in December 2008 claiming that certain fish passage facilities do not meet existing permit requirements. CAWC also undertakes activities to protect the threatened California red-legged frog and its habitat in the Carmel River pursuant to a prior agreement with the U.S. Fish and Wildlife Service ("USFWS"). This agreement is currently expired, and CAWC is in discussions with USFWS to renew the agreement.

In October 2010, a proceeding was commenced against American Water Canada Corporation, our Canadian subsidiary, and its client alleging the violation of the Ontario Safe Drinking Water Act, in connection with the temporary failure of an alum pump used for disinfection of the Elgin Area drinking water system. The Company believes it has valid defenses to these allegations and intends to vigorously defend them. While it is possible the consequence of the proceeding could result in penalties, the Company does not anticipate they will be material.

In addition, in November 2010, a proceeding was commenced against Terratec Environmental Ltd., one of our Canadian subsidiaries, alleging the violation of the Ontario Water Resource Act, in connection with the alleged discharge of anaerobic digestate into a creek that leads to Lake Ontario. The Company has not received discovery from the government regarding this matter. While it is possible the consequence of the proceeding could result in penalties, the Company does not anticipate they will be material.

Periodically, we are involved in other proceedings or litigation arising in the ordinary course of business. We do not believe that the ultimate resolution of these matters will materially affect our financial position or results of operations.

ITEM 4. [REMOVED AND RESERVED]

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PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Prior to April 23, 2008, there was no established public trading market for our common stock. Since April 23, 2008, our common stock has traded on the NYSE under the symbol "AWK." As of February 22, 2011, there were 175,211,592 shares of common stock outstanding and approximately 659 record holders of common stock.

The following table sets forth the per-share range of the high and low closing sales prices of our common stock as reported on the NYSE and the cash dividends paid and declared per share for the years ended December 31, 2010 and 2009.

	2010					2009				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Dividends paid per common share	\$ 0.21	\$ 0.21	\$ 0.22	\$ 0.22	\$ 0.86	\$ 0.20	\$ 0.20	\$ 0.21	\$ 0.21	\$ 0.82
Dividend declared per common share	\$ 0.21	\$ 0.21	\$ 0.22	\$ 0.22	\$ 0.86	\$ 0.20	\$ 0.20	\$ 0.21	\$ 0.21	\$ 0.82
Price range of common stock										
—High	\$ 23.23	\$ 22.15	\$ 23.49	\$ 25.73	\$ 25.73	\$ 21.48	\$ 19.26	\$ 20.48	\$ 22.68	\$ 22.68
—Low	\$ 20.75	\$ 19.92	\$ 20.00	\$ 23.47	\$ 19.92	\$ 16.53	\$ 16.80	\$ 18.28	\$ 18.97	\$ 16.53

For information on securities authorized for issuance under our equity compensation please, see Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters."

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ITEM 6. SELECTED FINANCIAL DATA

	For the Years Ended December 31,				
	2010	2009	2008	2007	2006
	(in thousands, except per share data)				
Statement of operations data(1):					
Operating revenues	\$ 2,710,677	\$ 2,440,703	\$ 2,336,928	\$ 2,214,215	\$ 2,093,067
Goodwill impairment charges	—	\$ 450,000	\$ 750,000	\$ 509,345	\$ 221,685
Operating income (loss)	\$ 748,091	\$ 173,609	\$ (186,896)	\$ 15,129	\$ 252,513
Income (loss) from continuing operations	\$ 267,827	\$ (233,083)	\$ (562,421)	\$ (342,275)	\$ (155,850)
Income (loss) from continuing operations per basic common share(2)	\$ \$1.53	\$ (1.39)	\$ (3.52)	\$ (2.14)	\$ (0.97)
Income (loss) from continuing operations per diluted common share(2)	\$ \$1.53	\$ (1.39)	\$ (3.52)	\$ (2.14)	\$ (0.97)

	As of December 31,				
	2010	2009	2008	2007	2006
	(in thousands)				
Cash and cash equivalents	\$ 13,112	\$ 22,256	\$ 9,542	\$ 13,481	\$ 29,754
Utility plant and property, net of depreciation	\$ 11,058,565	\$ 10,523,844	\$ 9,991,783	\$ 9,199,909	\$ 8,605,341
Total assets	\$ 14,079,773	\$ 13,452,651	\$ 13,231,818	\$ 12,951,327	\$ 12,783,059
Short-term and long-term debt	\$ 5,684,730	\$ 5,461,745	\$ 5,278,895	\$ 4,991,806	\$ 4,103,532
Redeemable preferred stock	\$ 23,271	\$ 23,946	\$ 24,150	\$ 24,296	\$ 1,774,475
Total debt and redeemable preferred stock	\$ 5,708,001	\$ 5,485,691	\$ 5,303,045	\$ 5,016,102	\$ 5,878,007
Common stockholders' equity	\$ 4,127,725	\$ 4,000,859	\$ 4,102,001	\$ 4,542,046	\$ 3,817,397
Preferred stock without mandatory redemption requirements	\$ 4,547	\$ 4,557	\$ 4,557	\$ 4,568	\$ 4,568
Total stockholders' equity	\$ 4,132,272	\$ 4,005,416	\$ 4,106,558	\$ 4,546,614	\$ 3,821,965

	For the Years Ended December 31,				
	2010	2009	2008	2007	2006
	(in thousands, except per share data)				
Other data:					
Cash flows provided by (used in):					
Operating activities	\$ 774,933	\$ 596,156	\$ 552,169	\$ 473,712	\$ 323,748
Investing activities	\$ (746,743)	\$ (703,611)	\$ (1,033,667)	\$ (746,578)	\$ (691,438)
Financing activities	\$ (37,334)	\$ 120,169	\$ 477,559	\$ 256,593	\$ 332,367
Construction expenditures, included in investing activities	\$ (765,636)	\$ (785,265)	\$ (1,008,806)	\$ (750,810)	\$ (682,863)
Dividends declared per common share	\$ 0.86	\$ 0.82	\$ 0.40	\$ —	\$ —

- (1) On September 28, 2007, Thames US Holdings, at the time an indirect wholly-owned subsidiary of RWE, was merged with and into American Water, with American Water as the surviving entity. American Water was an indirect wholly-owned subsidiary of RWE until its initial public offering in April 2008. The historical consolidated financial statements of American Water represent the consolidated results of the Company, formerly issued under the name Thames Water Aqua US Holdings, Inc. and Subsidiary Companies.
- (2) The number of shares used to compute income (loss) from continuing operations per basic common share and income (loss) from continuing operations per diluted common share for the fiscal years ended December 31, 2007 is 160.0 million after giving effect to the 160,000-for-1 stock split on November 7, 2007. For the years ended December 31, 2009 and 2008, there are no dilutive incremental common shares included in diluted earnings per share as all potentially dilutive instruments would be anti-dilutive.

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ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion together with the financial statements and the notes thereto included elsewhere in this Form 10-K. This discussion contains forward-looking statements that are based on management's current expectations, estimates and projections about our business, operations and financial performance. The cautionary statements made in this Form 10-K should be read as applying to all related forward-looking statements whenever they appear in this Form 10-K. Our actual results may differ materially from those currently anticipated and expressed in such forward-looking statements as a result of a number of factors, including those we discuss under "Risk Factors" and elsewhere in this Form 10-K. You should read "Risk Factors" and "Forward-Looking Statements." Certain 2009 and 2008 amounts have been reclassified to conform to the 2010 presentation.

Executive Overview

General

American Water Works Company, Inc. (herein referred to as "American Water" or the "Company") is the largest investor-owned United States water and wastewater utility company, as measured both by operating revenue and population served. Our more than 7,000 employees provide drinking water, wastewater and other water related services to approximately 15 million people in more than 30 states and in two Canadian provinces. Our primary business involves the ownership of water and wastewater utilities that provide water and wastewater services to residential, commercial and industrial customers. Our Regulated Businesses that provide these services are generally subject to economic regulation by state regulatory agencies in the states in which they operate. The federal government and the states also regulate environmental, health and safety and water quality matters. Our Regulated Businesses currently provide services in 20 states and in 2010 served approximately 3.3 million customers based on the number of connections to our water and wastewater networks. We report the results of these businesses in our Regulated Businesses segment. We also provide services that are not subject to economic regulation by state regulatory agencies. We report the results of these businesses in our Market-Based Operations. As noted under "Business Section," our financial condition and results of operations are influenced by a variety of industry-wide factors, including but not limited to (i) economic utility regulation; (ii) economic environment; (iii) the need for infrastructure investment; (iv) an overall trend of declining water usage per customer; (iv) weather and seasonality; and (vi) access to and quality of water supply.

In 2010, we continued to execute on our strategy of providing value to our customers and shareholders by delivering solid financial results, making capital investments in our infrastructure and focusing on efforts to earn an appropriate rate of return on prudent investments. Also in 2010, we continued to bring new water solutions to challenged water and wastewater systems by acquiring several smaller systems in Pennsylvania, Indiana and Missouri. As part of our strategic review of our business activities, the company ended the year with an agreement to acquire 11 water and 59 wastewater systems in Missouri, leveraging the strength of our large-scale operations in that state. Also, in a separate agreement, we agreed to sell our smaller regulated operations located in Texas. These transactions are expected to be finalized during 2011.

2010 Financial Results

Our results for the year ended December 31, 2010 demonstrated significant progress in difficult and challenging economic and regulatory environments. We continued to increase our net income, while making significant capital investment in our infrastructure and implementing operational efficiency improvements necessary to offset increases in production and employee benefit costs. In 2010, we generated \$2,710.7 million in total operating revenue, and \$748.1 million in operating income compared to total operating revenue of \$2,440.7 million, and \$173.6 million in operating income in 2009, which reflected a \$450.0 million impairment charge.

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For the year-ended December 31, 2010, we reported net income of \$267.8 million as compared to a net loss of \$233.1 million for the year ended December 31, 2009. Results in 2009 were affected by the impairment charge referenced above. Basic and diluted earnings per average common share were \$1.53 for the year ended December 31, 2010 compared to a basic and diluted loss per average common share of \$1.39 for the year ended December 31, 2009. In addition, we generated increased cash flow from operations during 2010 of \$774.9 million compared to \$596.2 million in 2009.

For the year ended December 31, 2010 our Regulated Businesses, our largest operating segment, generated \$2,424.2 million in operating revenue, representing 89.4% of our consolidated operating revenue compared to \$2,207.3 in operating revenues representing 90.4% of our consolidated operating revenue in 2009. This increase of 9.8% in operating revenues, when compared to 2009, was primarily driven by rate increases as well as increased sales volume in all customer classes in 2010. Additionally, for the year ended December 31, 2010, our Market-Based Operations generated \$311.8 million in operating revenue, compared to \$257.7 million in operating revenues in 2009. The increase in the Market-Based Operations' revenues is mainly attributable to increased revenues associated with our entry into the industrial O&M market through an acquisition in December of 2009, hereafter referred to as the "Contract Operations' Acquisition" as well as additional revenues associated with our military contracts.

See "Results of Operations" below for a detailed discussion of the consolidated results of operations, as well as our business segments.

Capital Investments

We invested approximately \$766 million and \$785 million in Company-funded capital improvements in 2010 and 2009, respectively. These capital investments are needed on an ongoing basis to comply with existing and new regulations, renew aging treatment and network assets, provide capacity for new growth and enhance system reliability, security and quality of service. The need for continuous investment presents a challenge due to the potential for regulatory lag, or the delay in recovering our operating expenses and earning an appropriate rate of return on our invested capital and a return of our invested capital. In conjunction with our capital program, management continued its focus on reducing regulatory lag during 2010.

One of our major accomplishments in 2010 was obtaining regulatory approval and rate recognition of the newly constructed \$164 million water treatment plant in Kentucky which was placed in service during September 2010.

For 2011 and the foreseeable future, we anticipate spending between \$800 million and \$1 billion yearly on Company-funded capital investment, depending upon the timing of major capital projects.

Continued Efforts to Earn an Appropriate Rate of Return

In 2010, we received authorizations for additional annualized revenues from general rate cases, including staged increases, of \$201.2 million. As of December 31, 2010, we are awaiting final orders in six other states, including Virginia and Hawaii where interim rate increases have been put into effect, requesting additional annualized revenues of \$94.7 million. There is no assurance that all, or any portion thereof, of any requested increases will be granted.

Also, in 2010, we were granted \$18.3 million in additional annualized revenues, assuming constant sales volumes from infrastructure charges in several of our states. Additionally, on February 25, 2010, our New Jersey subsidiary filed a petition with the Board of Public Utilities ("Board") for approval to recover rates through a surcharge of approximately \$3.3 million on an annual basis for an increase in purchased water and sewer treatment costs. On August 4, 2010, the Board authorized NJAWC to recover in rates a surcharge of approximately \$3.1 million on an annual basis for purchased water and sewer treatment costs.

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In January 2011, additional annualized revenue of \$5.5 million and \$1.7 million resulting from infrastructure charges in our Pennsylvania and Illinois subsidiaries, respectively, became effective.

2011 and Beyond

Our strategy for the future will continue to focus on earning an appropriate rate of return on our investments, promoting constructive regulatory frameworks, expanding the Regulated Businesses segment through focused acquisitions and pursuing "regulated-like" opportunities in our Market-Based Operations. We will also continue to modernize our infrastructure and focus on operational efficiencies.

In particular for 2011, we will focus on the execution of the portfolio optimization initiative which includes the acquisition of 11 regulated water systems and 59 wastewater systems in Missouri. The transaction, which requires approval by the Missouri Public Service Commission, expands our presence in the state of Missouri. We will also be focused on the divestiture of our Arizona, New Mexico and Texas regulated subsidiaries by late 2011 or early 2012. Also, in 2011, we will concentrate on resolving rate cases outstanding on December 31, 2010 and file additional rate cases, where necessary, and we will initiate state specific efforts to address declining usage and continued implementation, or improvement, of infrastructure surcharge mechanisms.

In 2011, we expect, although we cannot predict with any certainty, that we will continue to be challenged by the economic environment as well as declining residential water usage per customer. While financial markets have been relatively stable, the housing market is weak, industrial production remains below pre-recession levels and unemployment rates are still high. Even though usage volumes for water increased in 2010 compared to 2009, the demand for water has been lower than expected and remains lower than the 2008 usage levels. In addition, increased water conservation, including the use of more efficient household fixtures and appliances among residential consumers, combined with declining household sizes in the United States, have contributed to a trend of declining water usage per residential customer. All of the states served by our Regulated Businesses have experienced a declining trend in water usage per residential customer, with the rate decline in the various states ranging between 0.5% and 2% annually over the last 10 years. Because the characteristics of residential water use are driven by many factors, including socio-economic and other demographic characteristics of our service areas, climate, seasonal weather patterns and water rates, these declining trends vary by state and service area and change over time. We do not believe that the trend in any particular state or region will have a disproportionate impact on our results of operations. Our Regulated Businesses are heavily dependent upon operating revenues generated from rates we charge to our customers for the volume of water they use. Declining usage due to conservation or the economic environment contribute to regulatory lag and will have a negative impact on our long-term operating revenues if we are unable to secure appropriate regulatory treatment to offset the usage decline.

Also, in 2011, we expect to continue to improve our operating efficiency ratio which we define as operation and maintenance expense divided by operating revenues, adjusted for purchased water; increase our earned regulated return; and expand our Market-Based Operations with a focus on the Homeowners Services Group, Military Contract Operations and municipal contract operations only where the business model provides for value creation for both American Water and the municipality.

We are committed to operating our business responsibly and managing our operating and capital costs in a manner that serves our customers and produces value for our shareholders. We are committed to an ongoing strategy to make ourselves more effective, efficient and innovative.

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Results of Operations

The following table sets forth our consolidated statement of operations data for the years ended December 31, 2010, 2009 and 2008:

	For the Years Ended December 31,		
	2010	2009	2008
	(in thousands, except per share data)		
Operating revenues	\$ 2,710,677	\$ 2,440,703	\$ 2,336,928
Operating expenses:			
Operation and maintenance	1,389,212	1,283,417	1,262,283
Depreciation and amortization	354,650	335,178	312,776
General taxes	218,653	199,262	199,139
Loss (gain) on sale of assets	71	(763)	(374)
Impairment charge	0	450,000	750,000
Total operating expenses, net	1,962,586	2,267,094	2,523,824
Operating income (loss)	748,091	173,609	(186,896)
Other income (expenses):			
Interest, net	(315,043)	(296,545)	(285,155)
Allowance for other funds used during construction	10,003	11,486	14,497
Allowance for borrowed funds used during construction	6,284	7,224	8,171
Amortization of debt expense	(4,557)	(6,647)	(5,895)
Other, net	4,658	(792)	4,684
Total other income (expenses)	(298,655)	(285,274)	(263,698)
Income (loss) before income taxes	449,436	(111,665)	(450,594)
Provision for income taxes	181,609	121,418	111,827
Net income (loss)	\$ 267,827	\$ (233,083)	\$ (562,421)
Income (loss) per common share:			
Basic	\$ 1.53	\$ (1.39)	\$ (3.52)
Diluted	\$ 1.53	\$ (1.39)	\$ (3.52)
Average common shares outstanding during the period:			
Basic	174,833	168,164	159,967
Diluted	175,124	168,164	159,967

The following table summarizes certain financial information for our Regulated Businesses and Market-Based Operations for the periods indicated (without giving effect to inter-segment eliminations):

	For the Years Ended December 31,					
	2010		2009		2008	
	Regulated Businesses	Market- Based Operations	Regulated Businesses	Market- Based Operations	Regulated Businesses	Market- Based Operations
	(in thousands)					
Operating revenues	\$ 2,424,186	\$ 311,835	\$ 2,207,290	\$ 257,710	\$ 2,082,740	\$ 272,186
Adjusted EBIT(1)	\$ 721,213	\$ 26,983	\$ 591,606	\$ 21,264	\$ 531,774	\$ 26,307

- (1) Adjusted EBIT is defined as earnings before interest and income taxes from continuing operations. Management evaluates the performance of its segments and allocates resources based on several factors, of which the primary measure is Adjusted EBIT. Adjusted EBIT does not represent cash flows for periods presented and should not be considered as an alternative to cash flows as a source of liquidity. Adjusted EBIT as defined by the Company may not be comparable with Adjusted EBIT as defined by other companies. See Note 21 to Consolidated Financial Statements for our reconciliation of Adjusted EBIT.

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Our primary business involves the ownership of water and wastewater utilities that provide services to residential, commercial and industrial customers. This business is subject to state regulation and our results of operations are impacted significantly by rates authorized by the state regulatory commissions in the states in which we operate. The table below details additional annualized revenues, including step increases and assuming a constant volume, resulting from rate authorizations which were granted in 2010, 2009 and 2008.

	Years Ended December 31,		
	2010	2009	2008
	(in millions)		
State			
<i>General Rate Cases:</i>			
Pennsylvania(1)	\$ 8.4	\$ 56.0	\$ 1.9
New Jersey(2)	39.9	1.6	72.1
Kentucky	18.8	10.3	—
Missouri	28.0	—	34.5
Illinois	41.4	—	24.9
Indiana	31.5	—	—
California(3)	14.6	16.0	13.0
West Virginia	—	5.2	14.5
New York(4)	—	—	6.6
Arizona(5)	14.7	8.1	8.6
Iowa	—	6.1	4.3
Other(6)	10.8	2.8	10.6
<i>Total—General Rate Cases</i>	<u>\$ 208.1</u>	<u>\$ 106.1</u>	<u>\$ 191.0</u>

- (1) 2010 amount includes additional increases of \$3.2 million in 2011 and \$2.6 million in 2012.
- (2) 2009 amount includes additional increases of \$0.5 million effective in 2010 and \$0.4 million effective in 2011.
- (3) 2009 amount includes additional increases of \$1.3 million effective in 2010 and \$1.8 million in 2011; 2008 amount includes additional increase of \$2.0 million effective in 2009 and \$2.5 million effective in 2010.
- (4) 2008 amount includes additional increases of \$1.0 million effective in 2009 and \$1.0 million effective in 2010.
- (5) 2010 includes additional increases of \$0.8 million effective in 2012 and \$0.8 million effective in 2013.
- (6) 2010 amount includes amount of \$6.9 million related to Virginia rate case which has not yet been finalized but new rates were put into effect under bond, subject to refund. There is no assurance that the bonded amount, or any portion thereof, will be approved.

The effective dates for the larger rate increases granted in 2010 were October 1, 2010, July 1, 2010, April 23, 2010 and May 3, 2010, in Kentucky, Missouri, Illinois and Indiana, respectively. Rate increases granted in 2010 for Pennsylvania, New Jersey and Arizona were not effective until January 1, 2011. The effective date for the 2009 Pennsylvania rate increase was November 7, 2009. The effective dates for the larger rate increases granted in 2008 were December 8, 2008, November 28, 2008 and August 8, 2008 in New Jersey, Missouri and Illinois, respectively.

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As previously noted, an increasing number of states are permitting rates to be adjusted outside of a general rate case for certain costs, such as a return on capital investments to replace aging infrastructure. The following table details additional annualized revenue authorized through infrastructure surcharge mechanisms which were granted in 2010. As these surcharges are typically rolled into the new base rates and therefore are reset to zero when new base rates are effective, certain of these charges may also be reflected in the total general rate case amounts awarded in the table above if the order date was following the infrastructure surcharge filing date.

	Years Ended December 31,		
	2010	2009	2008
	(in millions)		
<i>Infrastructure Charges:</i>			
Pennsylvania	\$ 8.5	\$ 15.2	\$ 10.3
Missouri	3.2	2.7	2.7
Indiana	5.4	3.8	3.9
Illinois	0.7	0.9	1.1
Arizona	0.1	2.0	0.6
Other	0.4	2.0	—
<i>Total—Infrastructure Charges</i>	<u>\$ 18.3</u>	<u>\$ 26.6</u>	<u>\$ 18.6</u>

Comparison of Results of Operations for the Years Ended December 31, 2010 and 2009

Operating revenues. Our operating revenues increased by \$270.0 million, or 11.1%, to \$2,710.7 million for 2010 from \$2,440.7 million for 2009. Regulated Businesses' revenues increased by \$216.9 million, or 9.8%, for 2010 compared to 2009. The Market-Based Operations' revenues for 2010 increased by \$54.1 million, or 21.0%, from 2009.

The increase in the Regulated Businesses' revenues was primarily attributable to rate increases and increased consumption. The increase in our Market-Based Operations was primarily attributable to higher revenues in our Contract Operations Group due to additional revenues from the Contract Operations' Acquisition, increased military contract revenues mainly attributable to incremental contract work awarded to us in 2010, the full year effect of our two newest military contracts announced in 2009 and increased revenues in our Homeowner Services Group mainly as a result of increased product penetration within its existing customer base. These increases were partially offset by lower O&M and design and build contract revenues.

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The following table sets forth the amounts and percentages of Regulated Businesses' revenues and water sales volume by customer class:

Customer Class	For the Years Ended December 31,								
	2010		2009		2010		2009		
	Operating Revenues (dollars in thousands)		Operating Revenues (dollars in thousands)		Water Sales Volume (gallons in millions)		Water Sales Volume (gallons in millions)		
Water service:									
Residential	\$ 1,384,304	57.1%	\$ 1,259,851	57.1%	204,575	52.4%	203,071	53.2%	
Commercial	472,905	19.5%	429,073	19.4%	88,749	22.7%	86,120	22.6%	
Industrial	112,464	4.7%	99,696	4.5%	40,539	10.4%	36,212	9.5%	
Public and other	296,580	12.2%	271,959	12.3%	56,604	14.5%	55,911	14.7%	
Other water revenues	25,094	1.0%	23,534	1.1%	—	—	—	—	
Total water revenues	2,291,347	94.5%	2,084,113	94.4%	390,467	100.0%	381,314	100.0%	
Wastewater service	94,864	3.9%	89,925	4.1%					
Other revenues	37,975	1.6%	33,252	1.5%					
	\$ 2,424,186	100.0%	\$ 2,207,290	100.0%					

Water services—Water service operating revenues from residential customers for 2010 increased \$124.5 million, or 9.9%, from 2009, primarily due to rate increases and a slight increase in sales volume. The volume of water sold to residential customers increased by 1.5 billion gallons, or 0.7%, from 2009. We attribute this increase to warmer and drier weather in the Mid-Atlantic region of the United States, primarily in the third quarter in 2010 partially offset by wetter weather in parts of the Midwest region of the United States.

Water service operating revenues from commercial water customers for 2010 increased by \$43.8 million, or 10.2%, mainly due to rate increases in addition to an increase in sales volume compared to 2009. The volume of water sold to commercial customers increased by 2.6 billion gallons, or 3.1%, from 2009. We believe this increase is due to the combination of the aforementioned weather conditions and improved economic environment in certain states in which we operate.

Water service operating revenues from industrial customers for 2010 increased \$12.8 million, or 12.8%, from 2009 mainly due to rate increases and an increase in sales volumes. The volume of water sold to industrial customers increased 4.3 billion gallons, or 11.9%, from 2009. We believe that this increase is due to an improved economic environment in certain states in which we operate.

Water service operating revenues from public and other customers increased \$24.6 million, or 9.1%, from 2009 mainly due to rate increases. Revenues from municipal governments for fire protection services and customers requiring special private fire service facilities totaled \$121.2 million for 2010, an increase of \$8.0 million from 2009. Revenues generated by sales to governmental entities and resale customers for 2010 totaled \$175.4 million, an increase of \$16.6 million from 2009.

Wastewater services—Our subsidiaries provide wastewater services in 12 states. Revenues from these services for 2010 increased by \$4.9 million, or 5.5%, from 2009. The increase was primarily attributable to increases in rates charged to customers in a number of our operating companies.

Other revenues—Other revenues include such items as reconnection charges, initial application service fees, rental revenues, revenue collection services for others and similar items. For 2010, other revenues increased by \$4.7 million mainly due to an increase in work for a managed contract as well as increased rental revenues compared to the same period in the prior year.

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Operation and maintenance. Operation and maintenance expense increased \$105.8 million, or 8.2%, for 2010 compared to 2009. In 2009 and 2008, the amortization associated with the regulatory asset and regulatory liability for cost of removal had been classified as a component of Maintenance expense within the Operations and Maintenance Expense category of the Company's Consolidated Statements of Operations and Comprehensive Income (Loss). Beginning with the 2010 year-end consolidated financial statements, the Company is presenting the amortization of removal costs net of salvage value within the depreciation and amortization expense of the Consolidated Statements of Operations and Comprehensive Income (Loss). Based on the manner in which the Company evaluates its results and consistent with our peers, the amortization associated with removal costs is included in depreciation and amortization. The 2009 and 2008 amounts have been reclassified to conform with the 2010 presentation.

Operation and maintenance expenses for 2010 and 2009, by major expense category, were as follows:

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Production costs	\$ 326,746	\$ 303,298	\$ 23,448	7.7%
Employee-related costs	603,329	540,225	63,104	11.7%
Operating supplies and services	254,343	248,521	5,822	2.3%
Maintenance materials and services	113,739	90,843	22,896	25.2%
Customer billing and accounting	47,214	47,768	(554)	(1.2)%
Other	43,841	52,762	(8,921)	(16.9)%
Total	\$ 1,389,212	\$ 1,283,417	\$ 105,795	8.2%

Production costs including fuel and power, purchased water, chemicals and waste disposal increased by \$23.4 million, or 7.7%, for 2010 compared to 2009. Production costs by major expense type were as follows:

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Fuel and power	\$ 115,806	\$ 108,578	\$ 7,228	6.7%
Purchased water	109,277	97,966	11,311	11.5%
Chemicals	61,748	63,289	(1,541)	(2.4)%
Waste disposal	39,915	33,465	6,450	19.3%
Total	\$ 326,746	\$ 303,298	\$ 23,448	7.7%

The increase in our fuel and power costs was driven by higher costs in our Regulated Business of \$4.1 million primarily due to increased production volumes and higher cost in our Market-Based Operations of \$3.1 million, most of which is attributable to our Contract Operations' Acquisition. The increase in purchased water is primarily associated with our Regulated Businesses and is attributable to higher costs incurred by our suppliers that are passed on to us. The majority of this purchased water increase is in states that permit us to pass-through this increase to our customers without the need for a full rate proceeding. The decrease in chemical costs is primarily attributable to lower chemical costs in our Regulated Businesses as a result of favorable contract pricing in addition to favorable water quality due to reduced rainfall in several of our operating subsidiaries. Waste disposal costs increased primarily due to disposal costs attributable to the Contract Operations' Acquisition, which accounted for \$3.0 million of the increase. Additionally, \$1.9 million of the increase is related to the recognition of previously deferred costs allowed by a cost recovery mechanism in one of our operating companies as well as increases in sludge removal costs in one of our regulated operating companies.

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Employee-related costs including wage and salary, group insurance, and pension expense increased \$63.1 million, or 11.7%, for 2010 compared to 2009. These employee-related costs represented 43.4% and 42.1% of operation and maintenance expenses for 2010 and 2009, respectively and include the categories shown in the following table.

	For the Years Ended December 31,			
	2010	2009	Increase	Percentage
			(Decrease)	
(in thousands)				
Salaries and wages	\$ 439,111	\$ 391,074	\$ 48,037	12.3%
Pensions	55,440	50,392	5,048	10.0%
Group insurance	84,387	77,102	7,285	9.4%
Other benefits	24,391	21,657	2,734	12.6%
Total	<u>\$ 603,329</u>	<u>\$ 540,225</u>	<u>\$ 63,104</u>	11.7%

A driver of the increase in salaries and wages and other benefits was the addition of employees as a result of the Contract Operations' Acquisition totaling \$15.9 million and \$2.1 million, respectively. The remainder of the increases in salaries and wages was due to wage increases, higher incentive compensation and severance expenses as well as increased overtime costs of \$5.3 million in certain of our regulated operating companies. Pension expense increased for the year ended December 31, 2010 due to increased pension contributions by certain of our regulated operating companies whose costs are recovered based on Employee Retirement Income Security Act of 1974 ("ERISA") minimum funding requirements. This increase was partially offset by a decrease in the amortization of actuarial losses attributable to higher than expected returns on plan assets in 2009. Group insurance increased due to the deferral of \$2.7 million of costs in 2009 as part of our Pennsylvania subsidiary's rate order and \$1.2 million of incremental costs as the result of the Contract Operations' Acquisition. The remainder of the cost increase is attributable to the rising cost of health care.

Operating supplies and services include the day-to-day expenses of office operation, legal and other professional services, as well as information systems and other office equipment rental charges. For 2010 these costs increased by \$5.8 million, or 2.3%, compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase	Percentage
			(Decrease)	
(in thousands)				
Contracted services	\$ 85,436	\$ 83,399	\$ 2,037	2.4%
Office supplies and services	65,401	62,363	3,038	4.9%
Transportation	34,313	32,240	2,073	6.4%
Rents	24,340	22,481	1,859	8.3%
Other	44,853	48,038	(3,185)	(6.6)%
Total	<u>\$ 254,343</u>	<u>\$ 248,521</u>	<u>\$ 5,822</u>	2.3%

The increase in contracted services is attributable to increased construction activity in the Contract Operations Group related to military contracts of approximately \$8.6 million partially offset by lower temporary labor expenses due to the filling of vacant positions and a reduction in our legal and accounting expenses. The increase in office supplies and services is primarily the result of the Contract Operations' Acquisition, while the increase in transportation costs was due to higher gasoline prices during 2010 compared to 2009. The decrease in the "Other" category is mainly attributable to the establishment of a regulatory asset for a \$3.5 million payment previously expensed by our California operating company to the California Department of Fish and Game ("CDFG") on behalf of NOAA in the third quarter of 2010. This reversal was the result of an advice letter issued by the California Public Utility Commission which now allows for rate recovery of such payment. Also contributing to the reduction were lower costs attributable to the fact that the 2009 amount included an

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adjustment of \$3.4 million attributable to previously capitalized costs and \$1.9 million of divestiture related costs. These reductions were offset by a \$5.0 million contribution to the American Water Charitable Foundation, a 501-c(3) organization that was established in December 2010 to encourage and support employee volunteerism and community giving.

Maintenance materials and services, which include emergency repairs as well as costs for preventive maintenance, increased \$22.9 million, or by 25.2%, for 2010 compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Maintenance services and supplies	\$ 113,739	\$ 90,843	\$ 22,896	25.2%

The Regulated Businesses' maintenance materials and service costs increased by \$13.3 million in 2010, which was mainly attributable to higher levels of tank painting, meter testing, pump, tank and well maintenance, and paving costs throughout our regulated subsidiaries. These increases were partially offset by the inclusion of additional costs incurred by our Arizona subsidiary attributable to a backbilling by the City of Glendale, Arizona for our pro rata share of sewer line maintenance amounting to \$1.0 million in 2009. In our Market-Based Operations, these expenses increased \$9.6 million primarily due to higher maintenance expenses of \$5.9 million in the Contract Operations Group, including increased cost associated with the Contract Operations' Acquisition as well as higher costs related to military contracts resulting from incremental construction projects and growth mainly related to the Fort Meade and Fort Belvoir locations.

Customer billing and accounting expenses decreased by \$0.6 million, or 1.2%, for 2010 compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Uncollectible accounts expense	\$ 19,304	\$ 21,423	\$ (2,119)	(9.9)%
Postage	13,179	12,600	579	4.6%
Other	14,731	13,745	986	7.2%
Total	\$ 47,214	\$ 47,768	\$ (554)	(1.2)%

The decrease in the uncollectible accounts expense was the result of improved collection in our receivables in excess of 120 days in our Regulated Businesses which had a favorable impact of \$2.4 million on our uncollectible account expense partially offset by increased reserves due to higher accounts receivable balances as a result of increased revenues.

Other operation and maintenance expenses include casualty and liability insurance premiums and regulatory costs. These costs decreased by \$8.9 million, or 16.9%, for 2010 compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Insurance	\$ 32,350	\$ 37,410	\$ (5,060)	(13.5)%
Regulatory expenses	11,491	15,352	(3,861)	(25.1)%
Total	\$ 43,841	\$ 52,762	\$ (8,921)	(16.9)%

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The decrease in insurance expense is primarily due to the positive resolution of prior years' claims in 2010 compared to 2009. Regulatory expenses were higher in 2009 due to the rate case expenses of \$3.5 million that could not be recovered by our California subsidiary.

Depreciation and amortization. Depreciation and amortization expense increased by \$19.5 million, or 5.8%, for 2010 compared to 2009. This increase was due to our continued investment in our infrastructure and capital expenditures, many of which were placed into service in 2010 by our Regulated Businesses. This increase was partially offset by the \$2.4 million write-off of certain software costs in 2009.

General taxes. General taxes expense, which includes taxes for property, payroll, gross receipts, and other miscellaneous items, increased by \$19.4 million, or 9.7% in 2010 compared to the same period in 2009. This increase was due to higher gross receipts taxes of \$6.7 million, primarily in our New Jersey regulated subsidiary, higher property taxes of \$5.9 million throughout our regulated operations, higher payroll taxes of \$3.3 million as a result of our increased wages and salaries for the year December 31, 2010 and higher capital stock taxes of \$1.7 million.

Impairment charge. No impairment charge was recorded in 2010. For the twelve months ended December 31, 2009, we recorded an impairment charge to goodwill for our Regulated Businesses in the amount of \$448.2 million and in our Market-Based Operations of \$1.8 million. The 2009 impairment charge, which was recorded in the first quarter of 2009, was primarily related to the high degree of stock market volatility experienced and as of March 31, 2009, the sustained period for which the Company's market price was below its carrying value.

Other income (expenses). Interest expense, net of interest income, which is the primary component of our other income (expenses), increased by \$18.5 million, or 6.2%, for 2010 compared to 2009. The increase is primarily due to the refinancing of short-term debt with long-term debt during 2009 as well as increased borrowing associated with capital expenditures. As a result of the volatile market conditions in 2008, the Company utilized its short-term debt credit facilities to fund our capital projects and other operating needs which resulted in higher short-term borrowings in the first half of 2009. Our short term borrowings were steadily reduced during 2009 through a significant number of long-term debt refinancings with fixed interest rates. The increase in fixed rate long-term debt resulted in higher interest expense for the year ended December 31, 2010. Also, in addition to the increase in interest expense, allowance for funds used during construction ("AFUDC") decreased by \$2.4 million for 2010 compared to the same period in 2009 as a result of assets being placed into service, primarily in our Arizona, Kentucky and Indiana regulated subsidiaries. Furthermore, other income increased due to higher joint venture income and changes in market value of Company-held deferred compensation. Other items affecting other income (expense) include the release of the remaining balance of a loss reserve of \$1.3 million as a result of the resolution of outstanding issues and uncertainties that occurred during 2010 as well as the recognition of funds received related to the MBTE legal settlement for \$1.9 million resulting from the outcome of a subsidiary's rate order.

Provision for income taxes. Our consolidated provision for income taxes increased \$60.2 million, or 49.6%, to \$181.6 million for 2010 from \$121.4 million in 2009. The effective tax rates in 2010 and 2009 were 40.4% and (108.7%) respectively. The 2009 effective tax rate reflects the tax effects of the 2009 goodwill impairment charge, as the Company considers this charge as infrequently occurring or unusual. In addition to the tax benefits associated with the goodwill impairment charge, 2009 also included tax benefits attributable to the impact of tax law changes as well as other discrete items. The Company's annual effective tax rate was 40.9% and 39.3% for 2010 and 2009, respectively, excluding the impact of the goodwill impairment charge and various other discrete items totaling \$2.1 million in 2010 and \$3.1 million in 2009.

Net income (loss). Net income for 2010 was \$267.8 million compared to a net loss of \$233.1 million for 2009. The variation between the periods is the result of the aforementioned changes.

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Comparison of Results of Operations for the Years Ended December 31, 2009 and 2008

Operating revenues. Our operating revenues increased by \$103.8 million, or 4.4%, to \$2,440.7 million for 2009 from \$2,336.9 million for 2008. Regulated Businesses' revenues increased by \$124.6 million, or 6.0%, for 2009 compared to 2008. The Market-Based Operations' revenues for 2009 decreased by \$14.5 million, or 5.3%, from 2008.

The increase in the Regulated Businesses' revenues was primarily due to incremental revenues of \$187.3 million resulting from rate increases obtained through general rate cases as well as higher revenues resulting from surcharges and balancing accounts of \$18.2 million. Additional revenues of \$4.9 million were attributable to water and wastewater acquisitions, most of which were in the later half of 2008, and fire service revenues increased by \$5.3 million. These increases were offset by a \$93.6 million decrease in revenues related to lower customer consumption in a number of our operating companies, mainly as a result of wet and cool weather in the Mid-Atlantic and Midwestern regions of the United States as well as the downturn in the economy and conservation.

Our Market-Based Operations' operating revenues decreased by \$14.5 million, or 5.3%, to \$257.7 million in 2009 from \$272.2 million for 2008. The net decrease was primarily attributable to lower revenues in our Contract Operations Group and in our Applied Water Management Group, partially offset by increased revenues in our Homeowner Services Group. The decrease in Contract Operations Group revenues was primarily attributable to lower revenues associated with design and build contracts offset by increased military construction and O&M project revenues. Revenues of the Applied Water Management Group, which was combined into the Contract Operations Group during 2010, were lower than the prior year primarily due to the disposal of a pumping and hauling business in late 2008 and a decline in design and build activity resulting from the downturn in new home construction. The increase from our Homeowner Services Group represented increased product penetration within its existing customer base and the addition of New Mexico to our list of states where we offer our services.

The following table sets forth the amounts and percentages of Regulated Businesses' revenues and water sales volume by customer class:

Customer Class	For the Years Ended December 31,									
	2009				2008					
	Operating Revenues (dollars in thousands)				Water Sales Volume (gallons in millions)					
Water service:										
Residential	\$	1,259,851	57.1%	\$	1,195,093	57.4%	203,071	53.2%	213,423	52.7%
Commercial		429,073	19.4%		406,226	19.5%	86,120	22.6%	90,542	22.4%
Industrial		99,696	4.5%		101,769	4.9%	36,212	9.5%	42,032	10.4%
Public and other		271,959	12.3%		255,637	12.3%	55,911	14.7%	58,838	14.5%
Other water revenues		23,534	1.1%		14,138	0.7%	—	—	—	—
Total water revenues		2,084,113	94.4%		1,972,863	94.8%	381,314	100.0%	404,835	100.0%
Wastewater service		89,925	4.1%		80,174	3.8%				
Other revenues		33,252	1.5%		29,703	1.4%				
	\$	2,207,290	100.0%	\$	2,082,740	100.0%				

Water services—Water service operating revenues from residential customers for 2009 increased \$64.8 million, or 5.4%, from 2008, primarily due to rate increases offset by a decrease in sales volume. The volume of water sold to residential customers decreased by 10.4 billion gallons, or 4.9%, from 2008. We attribute this decrease to wetter and cooler weather conditions in a number of states in which we operate. Water conservation

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in general, as well as the impact of California's new conservation tariffs which were effective in 2009 and its severe water shortage due to legal restrictions imposed upon withdrawals from the Sacramento Delta, and a long-term drought also contributed to the reduction.

Water service operating revenues from commercial water customers for 2009 increased by \$22.8 million, or 5.6%, mainly due to rate increases offset by decreases in sales volume compared to 2008. The volume of water sold to commercial customers decreased by 4.4 billion gallons, or 4.9%, from 2008. We attribute this decrease to the weather conditions as well as the downturn in the economy.

Water service operating revenues from industrial customers for 2009 decreased \$2.1 million, or 2.0%, from 2008 mainly due to decreased sales volume offset by rate increases. The volume of water sold to industrial customers decreased 5.8 billion gallons, or 13.8%, from 2008. We attribute the decrease in the sales volumes to the then-current economic environment as customers reduced demand due to slow-down in their production process or the shut-down of production altogether in the case of some bankruptcies.

Water service operating revenues from public and other customers increased \$16.3 million, or 6.4%, from 2008 mainly due to rate increases. Revenues from municipal governments for fire protection services and customers requiring special private fire service facilities totaled \$113.2 million for 2009, an increase of \$8.8 million from 2008. Revenues generated by sales to governmental entities and resale customers for 2009 totaled \$158.8 million, an increase of \$7.5 million from 2008.

Wastewater services—Our subsidiaries provide wastewater services in 12 states. Revenues from these services for 2009 increased by \$9.8 million, or 12.2%, from 2008. The increase was attributable to increases in rates charged to customers in a number of our operating companies as well as higher revenues as a result of acquisitions of wastewater systems in Pennsylvania and West Virginia in the last six months of 2008.

Other revenues—Other revenues include such items as reconnection charges, initial application service fees, rental revenues, revenue collection services for others and similar items. These revenues increased by \$3.5 million, or 11.9%, mainly due to an increase in work for a managed contract in 2009 compared to 2008.

Operation and maintenance. Operation and maintenance expense increased \$21.1 million, or 1.7%, for 2009 compared to 2008.

Operation and maintenance expenses for 2009 and 2008, by major expense category, were as follows:

	For the Years Ended December 31,			
	2009	2008	Increase (Decrease)	Percentage
	(in thousands)			
Production costs	\$ 303,298	\$ 288,571	\$ 14,727	5.1%
Employee-related costs	540,225	505,550	34,675	6.9%
Operating supplies and services	248,521	283,230	(34,709)	(12.3)%
Maintenance materials and services	90,843	94,790	(3,947)	(4.2)%
Customer billing and accounting	47,768	44,012	3,756	8.5%
Other	52,762	46,130	6,632	14.4%
Total	\$ 1,283,417	\$ 1,262,283	\$ 21,134	1.7%

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Production costs increased by \$14.7 million, or 5.1%, for 2009 compared to 2008. Production costs by major expense type were as follows:

For the Years Ended December 31,				
	2009	2008	Increase (Decrease)	Percentage
	(in thousands)			
Fuel and power	\$ 108,578	\$ 110,641	\$ (2,063)	(1.9)%
Purchased water	97,966	95,253	2,713	2.8%
Chemicals	63,289	50,823	12,466	24.5%
Waste disposal	33,465	31,854	1,611	5.1%
Total	<u>\$ 303,298</u>	<u>\$ 288,571</u>	<u>\$ 14,727</u>	5.1%

The decrease in fuel and power costs was primarily due to lower fuel prices in addition to the decreased water sales volumes partially offset by increased electric rates. Purchased water increased due to rate increases by our suppliers. The increase in chemical costs was due to rising prices for those commodities compared to the same period in the prior year.

Employee-related costs including wage and salary, group insurance, and pension expense increased \$34.7 million, or 6.9%, for 2009 compared to 2008. These employee-related costs represented 42.1% and 40.1% of operation and maintenance expenses for 2009 and 2008, respectively.

For the Years Ended December 31,				
	2009	2008	Increase (Decrease)	Percentage
	(in thousands)			
Salaries and wages	\$ 391,074	\$ 379,509	\$ 11,565	3.0%
Pensions	50,392	39,315	11,077	28.2%
Group insurance	77,102	67,330	9,772	14.5%
Other benefits	21,657	19,396	2,261	11.7%
Total	<u>\$ 540,225</u>	<u>\$ 505,550</u>	<u>\$ 34,675</u>	6.9%

Salaries and wages increased \$5.8 million and \$3.8 million in our Regulated and Market-Based Operations, respectively. These increases primarily resulted from increased employee headcount as a result of enhancing customer service and merit wage rate increases partially offset by \$4.3 million of wages related to job reclassification of certain hourly employees for services performed which was recorded in 2008 in addition to less expense for overtime worked in 2009. The increase in pension expense was primarily due to an increase in our Regulated Businesses' pension expense of \$11.7 million, or 25.8%, for 2009 over 2008. This increase is mainly attributable to an increase in the amortization of actuarial losses attributable to lower than expected returns on plan assets in 2008 as a result of the decline in the economic environment. These market conditions were also the primary reason for the increase in costs for the other post employment benefits which are included in the group insurance amounts above. Medical benefit expenses for employees which are included in group insurance, increased due to an increase in the number of employees and the rising cost of health care. Other benefits increased primarily as a result of increased salaries and wages which in turn resulted in increased Company contribution to the 401(k) and defined contribution plans. Also other benefit expenses increased due to the benefit expense related to the new employee stock purchase plan.

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Operating supplies and services include the day-to-day expenses of office operation, legal and other professional services, as well as information systems and other office equipment rental charges. For 2009, these costs decreased by \$34.7 million, or 12.3%, compared to 2008.

	For the Years Ended December 31,			
	2009	2008	Increase (Decrease)	Percentage
	(in thousands)			
Contracted services	\$ 83,399	\$ 111,847	\$ (28,448)	(25.4)%
Office supplies and services	62,363	62,752	(389)	(0.6)%
Transportation	32,240	36,337	(4,097)	(11.3)%
Rents	22,481	22,543	(62)	(0.3)%
Other	48,038	49,751	(1,713)	(3.4)%
Total	\$ 248,521	\$ 283,230	\$ (34,709)	(12.3)%

Contracted services decreased in 2009 compared to the same period in 2008. This decrease was primarily attributable to a decrease in contracted services in our Market-Based Operations of \$19.1 million in 2009 as compared to 2008, primarily as a result of a decreased level of activity for our design, build and operate project in Fillmore, California. Additionally, consulting fees associated with our remediation efforts to comply with the Sarbanes-Oxley Act of 2002 decreased \$9.4 million. The decrease in transportation costs is due to lower gasoline prices, on average, in 2009 as compared to 2008. Other operating supplies and services decreased due to lower divestiture and initial public offering ("IPO") related costs. These costs totaled \$1.9 million in 2009 compared to \$12.4 million in 2008. Offsetting these decreases were 2009 condemnation costs of \$2.4 million, the establishment of reserves for assets not recoverable at this time associated with the California rate case of \$1.0 million, an increase in business development costs of \$1.0 million and \$1.5 million of profits included in our Market-Based Operations' expenses in 2008 as a result of the finalization and acceptance by the third party related to construction projects. Also included was an adjustment of \$3.4 million attributable to previously capitalized costs.

Maintenance materials and services, which include emergency repairs as well as costs for preventive maintenance, decreased \$3.9 million, or by 4.2%, for 2009 compared to 2008.

	For the Years Ended December 31,			
	2009	2008	Increase (Decrease)	Percentage
	(in thousands)			
Maintenance services and supplies	\$ 90,843	\$ 94,790	\$ (3,947)	(4.2)%
Total	\$ 90,843	\$ 94,790	\$ (3,947)	(4.2)%

Our Regulated Businesses' maintenance materials and service costs decreased \$0.6 million in 2009. The 2008 costs included \$2.6 million associated with a program in Illinois to maintain valves and fire hydrants. Offsetting these decreases were additional costs incurred by our Arizona subsidiary attributable to a back billing by the City of Glendale, Arizona for our pro rata share of sewer line maintenance amounting to \$1.0 million as well as increased tank painting costs of \$0.7 million in one of our operating subsidiaries. The Market-Based Operations' maintenance and services expenses decreased by \$3.3 million, mainly due to decreased Homeowner Services maintenance services and supplies due to favorable claims experience.

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Customer billing and accounting expenses increased by \$3.8 million, or 8.5%, for 2009 compared to 2008.

	For the Years Ended December 31,			
	2009	2008	Increase (Decrease)	Percentage
	(in thousands)			
Uncollectible accounts expense	\$ 21,423	\$ 20,298	\$ 1,125	5.5%
Postage	12,600	11,829	771	6.5%
Other	13,745	11,885	1,860	15.6%
Total	<u>\$ 47,768</u>	<u>\$ 44,012</u>	<u>\$ 3,756</u>	8.5%

The increase was primarily the result of higher uncollectible accounts expense in our Regulated Businesses of \$2.7 million due to an unusually low balance in 2008 as the result of a collection effort in the first quarter of 2008 to collect previously written off accounts. Our overall 2009 write-off percentages and specific provisions for certain receivables, including a number of commercial and industrial customers that have filed for bankruptcy, increased in 2009 due the uncertainty of collectability, which we believe was attributable to the then-current economic environment. Our Market-Based Operations' uncollectible expense decreased \$1.6 million primarily as a result of the collection of accounts previously written-off. The increase in the other category is mainly due to an increase in collection fees in our Regulated Businesses.

Other operation and maintenance expenses include casualty and liability insurance premiums and regulatory costs. These costs increased by \$6.6 million, or 14.4%, for 2009 compared to 2008.

	For the Years Ended December 31,			
	2009	2008	Increase (Decrease)	Percentage
	(in thousands)			
Insurance	\$ 37,410	\$ 33,173	\$ 4,237	12.8%
Regulatory expenses	15,352	12,957	2,395	18.5%
Total	<u>\$ 52,762</u>	<u>\$ 46,130</u>	<u>\$ 6,632</u>	14.4%

Insurance expense increased due to less favorable claims experience in 2009 compared to 2008 in addition to higher general liability and property insurance premiums. Regulatory expenses increased in 2009 primarily as a result of a \$3.5 million write-off of rate case expenses as well as \$1.3 million of on-going rate case expenses associated with our California subsidiary; costs incurred in connection with the rate case appeal in our Tennessee subsidiary as well as increased amortization of costs related to final rate orders received in several states. Partially offsetting these increases were decreases associated with the write-off of deferred rate case expenses in Tennessee, Illinois, and Ohio in 2008 amounting to \$3.2 million.

Depreciation and amortization. Depreciation and amortization expense increased by \$22.4 million, or 7.2%, for 2009 compared to 2008. This increase was primarily due to additional assets placed in service, mainly in our Regulated Businesses, over the last year and a \$2.4 million write-off of certain software costs.

General taxes. General taxes expense, which includes taxes for property, payroll, gross receipts, and other miscellaneous items, remained relatively unchanged, increasing by only \$0.1 million or 0.1% in 2009 compared to 2008.

Impairment charge. The impairment charge was \$450.0 million for 2009 compared to \$750.0 million for 2008. The 2009 amount recorded included an impairment charge to goodwill of our Regulated Businesses in the amount of \$448.2 million and our Market-Based Operations of \$1.8 million. The 2009 impairment charge, which was recorded in the first quarter of 2009, was primarily related to the high degree of stock market volatility experienced and as of March 31, 2009, the sustained period for which the Company's market price was below its

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carrying value. The 2008 impairment charge was primarily due to the market price of the Company's common stock (both the initial public offering price and the price during subsequent trading) being less than what was anticipated during our 2007 annual impairment test. Also contributing to the impairment was a decline in the fair value of the Company's debt (due to increased interest rates). See "Factors Affecting Our Results of Operations—Goodwill Impairment."

Other income (expenses). Interest expense, net of interest income, the primary component of our other income (expenses), increased by \$11.4 million, or 4.0%, for 2009 compared to 2008. The increase is primarily due to increased borrowings associated with capital expenditures. In addition, AFUDC decreased by \$4.0 million in 2009, as compared to the same period in the prior year, as a result of certain key projects being placed in-service. Other items contributing to the change include lower miscellaneous income for 2009 compared to 2008 primarily as a result of the change in market value of investments held for certain employees' elected deferred compensation.

Provision for income taxes. Our consolidated provision for income taxes increased \$9.6 million, or 8.6%, to \$121.4 million for 2009 from \$111.8 million for 2008. The effective tax rates of (108.7%) and (24.8%) for 2009 and 2008, respectively, reflect the tax effects of the goodwill impairment charges as discrete items, as the Company considers these charges as infrequently occurring or unusual. In addition to the tax benefits associated with the goodwill impairment charges, 2009 included tax benefits attributable to the impact of tax law changes as well as other discrete items. The Company's annual effective tax rate was 39.3 % and 39.8 % for 2009 and 2008, respectively, excluding the impact of the goodwill impairment charges and the various other discrete items.

Net loss. The net loss for 2009 was \$233.1 million compared to a net loss of \$562.4 million for 2008. The variation between the periods is the result of the aforementioned changes.

Liquidity and Capital Resources

We regularly evaluate cash requirements for current operations, commitments, development activities and capital expenditures. Our business is very capital intensive and requires significant capital resources. A portion of these capital resources is provided by internally generated cash flows from operations. When necessary, we obtain additional funds from external sources in the debt and equity capital markets and through bank borrowings. Our access to external financing on reasonable terms depends on our credit ratings and current business conditions, including that of the water utility industry in general as well as conditions in the debt or equity capital markets. If these business and market conditions deteriorate to the extent that we no longer have access to the capital markets at reasonable terms, we have access to revolving credit facilities with aggregate bank commitments of \$850.0 million. We rely on these revolving credit facilities and the capital markets to fulfill our short-term liquidity needs, to issue letters of credit and to back our commercial paper program. Disruptions in the credit markets may discourage lenders from meeting their existing lending commitments, extending the terms of such commitments or agreeing to new commitments. Market disruptions may also limit our ability to issue debt and equity securities in the capital markets. See "—Credit Facilities and Short-Term Debt."

In order to meet our short-term liquidity needs, we primarily issue commercial paper which is backed by AWCC's revolving credit facilities. AWCC had \$2.7 million of outstanding borrowings and \$36.8 million of outstanding letters of credit under its credit facilities as of December 31, 2010. As of December 31, 2010, AWCC had \$810.5 million available under our credit facilities that we can use to fulfill our short-term liquidity needs, to issue letters of credit and back our \$175.3 million outstanding commercial paper. We can provide no assurances that our lenders will meet their existing commitments or that we will be able to access the commercial paper or loan markets in the future on terms acceptable to us or at all.

In addition, our regulated operating companies receive advances and contributions from customers, home builders and real estate developers to fund construction necessary to extend service to new areas. Advances for construction are refundable for limited periods, which vary according to state regulations, as new customers

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begin to receive service or other contractual obligations are fulfilled. Amounts which are no longer refundable are reclassified to contributions in aid of construction. Utility plant funded by advances and contributions is excluded from the rate base. Generally, we depreciate contributed property and amortize contributions in aid of construction at the composite rate of the related property. Some of our subsidiaries do not depreciate contributed property, based on regulatory guidelines.

We use our capital resources, including cash, to (i) fund capital requirements, including construction expenditures, (ii) pay off maturing debt, (iii) pay dividends, (iv) fund pension and postretirement welfare obligations and (v) invest in new and existing ventures. We spend a significant amount of cash on construction projects that we expect to have a long-term return on investment. Additionally, we operate in rate-regulated environments in which the amount of new investment recovery may be limited, and where such recovery takes place over an extended period of time, as our recovery is subject to regulatory lag. See "Business—Regulation—Economic Regulation." We expect to fund future maturities of long-term debt through a combination of external debt and cash flows from operations. Since we continue to make investments equal to or greater than our cash flows from operating activities, we have no plans to reduce debt significantly.

Cash Flows from Operating Activities

Cash flows from operating activities primarily result from the sale of water and wastewater services and, due to the seasonality of demand, are weighted toward the third quarter of each fiscal year. Our future cash flows from operating activities will be affected by economic utility regulation; infrastructure investment; inflation; compliance with environmental, health and safety standards; production costs; customer growth; declining per customer usage of water; and weather and seasonality.

Cash flows from operating activities have been a reliable, steady source of funding, sufficient to meet operating requirements, make our dividend payments and fund a portion of our capital expenditures requirements. We will seek access to debt and equity capital markets to meet the balance of our capital expenditure requirements as needed. There can be no assurance that we will be able to access such markets successfully on favorable terms or at all. Operating cash flows can be negatively affected by changes in our rate regulated environments or changes in our customers' economic outlook and ability to pay for service in a timely manner. We can provide no assurance that our customers' historical payment pattern will continue in the future.

The following table provides a summary of the major items affecting our cash flows from operating activities for the periods indicated:

	<u>2010</u>	<u>2009</u>	<u>2008</u>
	(in thousands)		
Net income (loss)	\$ 267,827	\$ (233,083)	\$ (562,421)
Add (subtract):			
Non-cash operating activities(1)	598,612	1,016,826	1,214,120
Changes in working capital(2)	45,751	(60,141)	5,523
Pension and postretirement healthcare contributions	(137,257)	(127,446)	(105,053)
Net cash flows provided by operations	<u>\$ 774,933</u>	<u>\$ 596,156</u>	<u>\$ 552,169</u>

(1) Includes (gain) loss on sale of businesses, depreciation and amortization, impairment charges, provision for deferred income taxes, amortization of deferred investment tax credits, provision for losses on utility accounts receivable, allowance for other funds used during construction, (gain) loss on sale of assets, deferred regulatory costs, amortization of deferred charges, stock-based compensation expense and other non-cash items, net, less pension and postretirement healthcare contributions. Details of each component can be found in the Consolidated Statements of Cash Flows.

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- (2) Changes in working capital include changes to accounts receivable and unbilled utility revenue, taxes receivable (including federal income), other current assets, accounts payable, taxes accrued (including federal income), interest accrued and other current liabilities.

The increase in cash flows from operations during 2010 compared to 2009 is primarily due to an increase in revenues and the change in working capital.

The increase in cash flows from operations during 2009 compared to 2008 was primarily due to increased revenues offset by changes in working capital mainly driven by changes in taxes receivable and taxes accrued. The change in taxes is primarily due to the fact that a \$35.0 million tax refund, including interest, was received in December 2008. No similar amount was received at the end of 2009. The increase in the 2009 pension contributions was the result of the Company's 2008 unfunded status of its pension plan, which increased significantly primarily due to lower than expected 2008 asset returns.

The Company currently expects to make pension and postretirement benefit contributions to the plan trusts of \$166.8 million in 2011, of which \$21.0 million was already made in January 2011. In addition, we currently estimate that contributions will amount to \$155.0 million in 2012, \$127.6 million in 2013, \$126.4 million in 2014 and \$107.3 million in 2015. Actual amounts contributed could change materially from these estimates.

Cash Flows from Investing Activities

Cash flows used in investing activities were as follows for the periods indicated:

	For the Years Ended December 31,		
	2010	2009	2008
	(in thousands)		
Net capital expenditures	\$ (765,636)	\$ (785,265)	\$ (1,008,806)
Other investing activities, net(1)	18,893	81,654	(24,861)
Net cash flows used in investing activities	<u>\$ (746,743)</u>	<u>\$ (703,611)</u>	<u>\$ (1,033,667)</u>

- (1) Includes acquisitions, proceeds from the sale of assets and securities, removal costs from property, plant and equipment retirements, net funds released and other.

Cash flows used in investing activities increased in 2010 compared to 2009 mainly due the change in "Other investing activities" in 2010 which resulted from the change in the net restricted funds released attributable primarily to the drawdown of the restricted funds by our Kentucky and Pennsylvania regulated operating companies. This increase was partially offset by a decrease in capital expenditures as a result of delayed construction in the first quarter of 2010 due to the severe weather conditions in certain states in which we operate as well as a higher spending in 2009 on water treatment plant expenditures as a number of facilities were under construction in 2009.

Cash flows used in investing activities decreased in 2009 compared to 2008 mainly due to a decrease in capital expenditures which was primarily attributable to our decision, as a result of the 2008 credit market disruptions, to decrease in 2009 our investment in our regulated utility plant projects.

In 2011, we estimate that Company-funded capital investment will total between \$800 million and \$1 billion. We intend to invest capital prudently to provide essential services to our regulated customer base, while working with regulators in the various states in which we operate to have the opportunity to earn an appropriate rate of return on our investment and a return of our investment.

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Our infrastructure investment plan consists of both infrastructure renewal programs, where we replace infrastructure as needed, and major capital investment projects, where we construct new water and wastewater treatment and delivery facilities to meet new customer growth and water quality regulations. Our projected capital expenditures and other investments are subject to periodic review and revision to reflect changes in economic conditions and other factors.

Our projected capital expenditures and other investments are subject to periodic review and revision to reflect changes in economic conditions and other factors.

During 2010, we continued to move forward with BT to enhance processes and upgrade antiquated legacy systems in order to generate efficiencies and provide more cost effective service to our customers. In 2010, we completed our evaluation of appropriate software solutions and selected our software vendor as well as our system integrator. During the fourth quarter of 2010, we began working with the system integrator to analyze our current processes and to design a blueprint for business processes and new systems that will enable business transformation. This work will continue through the first quarter of 2011. During the remainder of 2011, we will begin the detailed design and build of the Enterprise Resource Planning ("ERP") application. We expect to have all three enterprisewide systems or applications—the ERP, a new customer information system and an enterprise asset management system—implemented by the end of 2014.

Current estimates indicate that BT expenditures could total as much as \$280 million. Through December 31, 2010, we have spent \$34.5 million on the project. Expenditures associated with BT are included in the estimated capital investment spending of \$800 million to \$1 billion capital investment spending outlined above. As with any other initiative of this magnitude, there are risks that could result in increased costs. Any technical difficulties in developing or implementing this initiative, such as implementing a successful change management process, may result in delays, which in turn, may increase the costs of the project and also delay and, perhaps, reduce any cost savings and efficiencies expected to result from the initiative. When we make adjustments to our operations, we may incur incremental expenses prior to realizing the benefits of a more efficient workforce and operating structure. While we believe such expenditures can be recovered through regulated rates, we can provide no guarantee that we will be able to achieve timely rate recovery of these increased costs associated with this transformation project. Any such delays or difficulties encountered with such recovery may have a material and adverse impact on our business, customer relationships and financial results. We believe that the goals of BT—increasing our operating efficiency and effectiveness and controlling the costs associated with the operation of our business—are important to providing the quality service to our customers and communities we serve.

The following table provides a summary of our historical capital expenditures:

	For the Years Ended December 31,		
	2010	2009	2008
	(in thousands)		
Transmission and distribution	\$ 299,303	\$ 309,851	\$ 399,597
Treatment and pumping	133,473	125,031	186,480
Services, meter and fire hydrants	157,982	153,455	224,089
General structures and equipment	111,394	99,280	71,146
Sources of supply	31,452	44,127	52,392
Wastewater	32,032	53,521	75,102
Total capital expenditures	<u>\$ 765,636</u>	<u>\$ 785,265</u>	<u>\$ 1,008,806</u>

Capital expenditures during the periods noted above were related to the renewal of supply and treatment assets, construction of new water mains and customer service lines, as well as rehabilitation of existing water mains and hydrants.

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Capital expenditures for 2010 decreased by \$19.6 million or 2.5% from \$785.3 million in 2009 as a result of delayed construction due to severe weather conditions in the first quarter of 2010 in certain states in which we operate and increased water treatment facility expenditures in 2009. Construction expenditures for 2009 decreased by \$223.5 million, or 22.2%, over 2008 as a result of our 2009 decision to address the credit market disruptions.

On April 25, 2008, the Kentucky Public Service Commission approved Kentucky-American Water Company's application for a certificate of convenience and necessity to construct a 20.0 million gallon per day treatment plant on the Kentucky River and a 30.6 mile pipeline to meet Central Kentucky's water supply deficit. The Kentucky project with total construction costs of \$164 million was placed in service in September, 2010.

An integral aspect of our strategy is to seek growth through tuck-ins, by helping commissions with troubled water systems as well as other acquisitions that are complementary to our existing business and support the continued geographical diversification and growth of our operations. Generally, acquisitions are funded initially with short-term debt and later refinanced with the proceeds from long-term debt or equity offerings.

The following provides a summary of the major acquisitions and dispositions affecting our cash flows from investing activities in the years indicated:

2010:

- We paid approximately \$1.6 million for five regulated water systems and one wastewater system.

2009:

- We paid approximately \$18.1 million for seven acquisitions which consisted of six regulated water and wastewater systems and the Contract Operations' Acquisition.

2008:

- We paid approximately \$12.5 million for the acquisition of ten water and wastewater systems.
- We received approximately \$12.6 million from the sale of other assets, which included \$10.6 million in cash from the sale of the Felton water system. In September 2008, our California subsidiary completed its sale of the Felton, California water system to San Lorenzo Valley Water District ("SLVWD"). Under the terms of the agreement, SLVWD paid \$13.4 million for the operating assets of the water system, which serves approximately 1,330 customers in Felton. The payment included a \$10.6 million cash payment to CAWC and the assumption by SLVWD of \$2.8 million in debt. The sale of the Felton system resulted in a loss on sale of \$0.4 million.

Our investing activities could require considerable capital resources which we have generated through operations and attained through financing activities. We can provide no assurances that these resources will be sufficient to meet our expected investment needs and may be required to delay or reevaluate our investment plans. The Company's announced sale of its Arizona and New Mexico subsidiaries will have a favorable impact on cash flows from investing activities when the deal is closed as the proceeds from such sale are expected to be approximately \$470 million.

Cash Flows from Financing Activities

Our financing activities, primarily focused on funding construction expenditures, include the issuance of long-term and short-term debt, mainly through AWCC. We access capital markets on a regular basis, subject to market conditions. As a result of the anticipated proceeds from the divestiture of our Arizona and New Mexico regulated businesses, we expect to fund our 2011 cash requirements with short-term debt. Additionally, because of this transaction we do not anticipate the need for an equity offering in 2011. In addition, new infrastructure may be funded with customer advances and contributions for construction (net of refunds). This amounted to \$7.0 million, \$21.2 million and \$3.1 million for the years ended December 31, 2010, 2009 and 2008, respectively.

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On May 1, 2009, we and AWCC filed a universal shelf registration statement that enabled us to offer and sell from time to time various types of securities, including common stock, preferred stock and debt securities, all subject to market demand and ratings status. During 2010, no common stock or preferred stock offerings were made pursuant to this filing.

Pursuant to a public offering in June 2009, the Company completed the sale of 14.5 million shares of common stock at \$17.25 per share. The proceeds from the offering, net of underwriters' discounts and expenses payable by the Company, were \$242.3 million. The proceeds from the offering were used to repay short-term debt. At the same time, RWE completed a partial divestiture of its investment in the Company through the sale of 11.5 million shares also at a price of \$17.25. RWE granted the underwriters a 30-day option to purchase up to an additional 3.9 million shares of the Company's stock at a price of \$17.25. The underwriters exercised their option and purchased 3.9 million shares to cover over-allotments. The Company did not receive any proceeds from the RWE sale of the Company's shares. Prior to the sale of these shares by RWE and the Company, RWE owned approximately 60% of the Company's common shares. After the sales of shares and exercise of the underwriters' over-allotment option, RWE owned approximately 47% of the Company's shares.

During the remainder of 2009, RWE continued to divest of its remaining investment in the Company through the sale of additional shares. In August 2009, RWE sold 40.3 million shares, including 5.3 million shares to cover the over-allotments at a price of \$19.25. In November 2009, RWE sold 41.1 million shares which included 3.7 million shares to cover the over-allotments, at a price of \$21.63. We did not receive any proceeds from the RWE sales of the Company's shares. As a result of the full exercise of the underwriter's option in November 2009, RWE became fully divested of our common stock.

As of December 31, 2008, the Company had issued, through its subsidiaries, \$120.3 million of variable rate demand bonds, which were periodically remarketed. During the months of January and February 2009, AWCC purchased these variable rate demand bonds because no investors were willing to purchase the bonds at acceptable market rates and held such bonds in treasury. As a result of these repurchases in early 2009 and prior to the release of our 2008 10-K, the debt was reflected in current portion of long-term debt in the consolidated balance sheet at December 31, 2008. On May 21, 2009, AWCC remarketed \$52.9 million of these variable rate demand notes as fixed rate Tax Exempt Water Facility Revenue bonds with interest rates ranging from 6.00% to 6.75%. The net proceeds from this offering were used to repay short-term debt. Also on May 21, 2009, AWCC remarketed \$31.9 million of the variable rate notes held in the Company's treasury and subsequently remarketed \$23.3 million as fixed rate Tax Exempt Water Facility Revenue bonds in the third quarter of 2009; the residual \$8.6 million remains variable rate on the open market. During the third quarter 2009, AWCC successfully remarketed \$24.9 million of the variable rate demand notes as fixed rate Tax Exempt Water Facility Revenue bonds with an interest rate of 6.25%. The net proceeds from this offering were used to repay short-term debt. The remaining \$10.6 million was held in the Company's treasury at December 31, 2009. They were subsequently remarketed as fixed rates bonds with a coupon rate of 5.25% and a maturity date of 2028 on July 27, 2010.

On February 17, 2009, the American Recovery and Reinvestment Tax Act of 2009 which we refer to as the Act, became law. As a result of the Act, we have applied and will continue, as long as available, to apply for subsidized financing under the Act or other governmental subsidized funds in many of the states where we operate. During the year ended December 31, 2010, we received \$6.9 million in total, \$4.0 million in grants and \$2.9 million in loans, million related to applications filed in 2009. As of December 31, 2010, we have \$0.9 million of funds which have been awarded and can be drawn in the future. In addition, we were awarded approximately \$29.4 million in low-interest financing from the Pennsylvania Infrastructure Investment Authority ("PENNVEST"). These PENNVEST awards will be used to fund a portion of the Rock Run water treatment plant upgrade as well as other specified projects. Also during 2010, we had draws of \$0.3 million from a low interest loan through the Ohio State Revolving Loan Authority, bringing the total draws on that loan to date to \$1.3 million. Lastly, in 2010, New Jersey-American Water Company, Inc. ("NJAWC") applied for \$21.0 million of funds through the New Jersey Environmental Infrastructure Trust. As of December 31, 2010, \$11.8 million has been awarded, but no funds have been received. Furthermore, in connection with the Act, the Company has reflected the tax benefits from the extension of bonus depreciation in its 2010 and 2009 results.

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In regards to debt financings, the following long-term debt was issued in 2010:

Company	Type	Interest Rate	Maturity	Amount (in thousands)
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.38%	2040	a \$ 26,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.25%	2040	b 25,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.25%	2040	c 35,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	4.85%	2040	d 25,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.25%	2028	e 10,635
American Water Capital Corp.	Senior notes—fixed rate	6.00%	2040	f 30,000
Other subsidiaries	Private activity—fixed rate	4.45%-5.60%	2023-2034	g 150,000
Other subsidiaries	Private activity—fixed rate	4.70%-4.88%	2025-2029	h 75,000
Other subsidiaries	Private activity—fixed rate	0.00%-2.56%	2021-2030	i 14,699
Total issuances				<u>\$ 391,334</u>

Note: Private activity type defined as private activity bonds and government funded debt.

- (a) On June 24, 2010, AWCC closed an offering of \$26.0 million in tax-exempt water facility revenue bonds issued by Owen County, Kentucky. The bonds have a coupon of 5.38% with a maturity of 2040 and a 10-year call option. The proceeds from the bond offering will be used to repay short-term debt related to the construction of the water treatment and transmission facility located in Owen County, Kentucky, as well as to pay remaining costs of acquisition, construction, installation and equipping of the water treatment and transmission facility.
- (b) On May 27, 2010, AWCC closed an offering of \$25.0 million in tax-exempt water facility revenue bonds issued by the Illinois Finance Authority. The bonds have a coupon of 5.25% with a maturity of 2040 and a 10-year call option. The proceeds from the bond offering will be used to fund water facility projects in Champaign, Livingston, Logan, Madison, Peoria and St. Clair counties in Illinois.
- (c) On August 18, 2010, AWCC closed an offering of \$35.0 million in tax-exempt bonds issued through the State of California Pollution Control Financing Authority. The bonds have a coupon of 5.25% with a 30-year maturity and a 10-year call option. The proceeds from bond offering will be used to fund specific CAWC projects.
- (d) On September 16, 2010, AWCC closed an offering of \$25.0 million in tax-exempt water facility revenue bonds issued through the Indiana Finance Authority. The bonds have a coupon rate 4.85% with a 30-year maturity and a 10-year call option. The proceeds from the bonds will be used to fund water facility projects in Indiana-American Water Company, Inc.'s service territory.
- (e) Represents \$10.6 million of variable rate debt that was held in the Company's treasury at December 31, 2009 because no investors were willing to purchase the bonds. On July 27, 2010, this variable rate debt was remarketed as fixed rate bonds with a coupon rate of 5.25% and a maturity date of 2028.
- (f) On December 1, 2010 AWCC closed on a 6.00% senior fixed rate note. Proceeds used to paydown short-term debt.
- (g) On July 9, 2010, our operating subsidiary, NJAWC, closed on a refunding of four outstanding bonds issuances. To accomplish this refunding, the New Jersey Economic Development Authority issued three

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new series of bonds on behalf of NJAWC. The new bonds have coupon rates of 5.60%, 5.10% and 4.45% and maturities of 2034, 2023 and 2023, respectively.

- (h) On November 1, 2010, NJAWC closed on refinancings of two outstanding bond issues and the New Jersey Economic Development Authority issued two new series of bonds on behalf of NJAWC.
- (i) Proceeds received from various financing/development authorities. The proceeds will be used to fund certain projects.

The following long-term debt was retired through optional redemption or payment at maturity during 2010:

Company	Type	Interest Rate	Maturity	Amount (in thousands)
American Water Capital Corp.	Senior notes-fixed rate	6.00%-6.87%	2011-2039	\$ 28,157
Other subsidiaries	Private activity-fixed rate and government funded debt	0.00%-6.88%	2010-2036	233,476
Other subsidiaries	Mortgage bonds-fixed rate	7.86%-8.98%	2010-2011	10,275
Other subsidiaries	Mandatory redeemable preferred stock	4.60%-6.00%	2013-2019	218
Other	Capital leases and other			792
Total retirements & redemptions				\$ 272,918

In July 2010, we entered into an interest rate swap agreement with a notional amount of \$100.0 million. This interest rate swap agreement effectively converted the interest on \$100.0 million of outstanding 6.085% fixed rate debt maturing 2017 to a variable rate of six-month LIBOR plus 3.422%. This interest rate swap agreement was designated as a fair value hedge in accordance with authoritative accounting guidance. Subject to market conditions at the time, we would consider entering into additional agreements of this nature in the foreseeable future. For the year ended December 31, 2010, the interest rate swap reduced interest expense by \$0.4 million.

On February 23, 2011, we redeemed \$33.0 million in general mortgage bonds. The callable bonds amounted to \$9.0 million at 8.46%, \$2.5 million at 9.25%, \$15.5 million at 9.71% and \$6.0 million at 9.63%. We expect to refinance these bonds with long-term debt in the first six months of 2011.

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The following long-term debt was issued in 2009:

Company	Type	Interest Rate	Maturity		Amount (in thousands)
American Water Capital Corp.	Private activity-fixed rate	6.25%	2039	a	\$ 45,390
American Water Capital Corp.	Private activity-fixed rate	6.00%	2018	b	18,250
American Water Capital Corp.	Private activity-fixed rate	6.10%	2019	b	17,950
American Water Capital Corp.	Private activity-fixed rate	6.75%	2031	b	16,700
American Water Capital Corp.	Private activity-fixed rate	6.25%	2032	c	24,860
American Water Capital Corp.	Private activity-fixed rate	5.63%	2039	a	26,000
American Water Capital Corp.	Private activity-fixed rate	6.25%	2032	d	23,325
American Water Capital Corp.	Private activity-fixed rate	5.25%	2039	e	28,500
American Water Capital Corp.	Senior notes-fixed rate	8.27%	2039	f	25,500
American Water Capital Corp.	Senior notes-fixed rate	7.21%	2019	f	24,500
American Water Capital Corp.	Senior notes-fixed rate	8.25%	2038	f	75,000
American Water Capital Corp.	Senior notes-fixed rate	6.00%	2039	f	60,000
Other subsidiaries	Private activity-fixed rate	6.20%	2039	g	80,000
Other subsidiaries	Private activity-fixed rate	1.27%	2029	h	2,242
Other subsidiaries	Private activity-fixed rate	4.14%	2029	i	1,315
Other subsidiaries	Private activity-fixed rate	5.00%	2039	j	10,500
Other subsidiaries	Private activity-fixed rate	5.70%	2039	j	134,224
Other subsidiaries	Private activity-floating rate	1.00%	2015	d	8,560
Other subsidiaries	Mortgage bonds-fixed rate	5.48%	2019	f	25,000
Other subsidiaries	Mortgage bonds-fixed rate	6.35%	2039	f	75,000
Other	Capital lease	8.82%	2011		41
Total issuances					<u>\$ 722,857</u>

- (a) The proceeds from the bond offering were used to repay short-term debt related to the construction of a water treatment and transmission facility located in Owen County, Kentucky, as well as to pay the remaining costs of acquisition, construction, installation and equipping of the water treatment and transmission facility as the construction proceeds to completion.
- (b) On May 21, 2009, AWCC remarketed \$52.9 million of variable rate demand notes as fixed rate Tax Exempt Water Facility Revenue bonds. The net proceeds from this offering was used to repay short-term debt.
- (c) On August 27, 2009, AWCC successfully remarketed \$24.9 million of variable rate demand notes previously held in the Company's treasury. The net proceeds from this offering were used to repay short-term debt.
- (d) On May 21, 2009, AWCC successfully remarketed \$31.9 million of variable rate demand notes previously held in the Company's treasury. The new notes had an interest rate of 1.00%. The net proceeds from this offering were used to repay commercial paper. Subsequently, on August 27, 2009, AWCC remarketed the \$23.3 million of the variable rate demand notes as fixed rate Tax Exempt Water Facility Revenue bonds with an interest rate of 6.25% and the remaining \$8.6 million was remarketed at variable rates.
- (e) On October 1, 2009 AWCC closed an offering of \$28.5 million in tax-exempt water facility revenue bonds with a 10-year call option issued by the Illinois Finance Authority. The proceeds from this offering will be used to fund certain capital improvements.
- (f) The proceeds were used to pay down short-term debt.
- (g) On April 8, 2009, Pennsylvania-American Water Company ("PAWC") closed an offering to issue \$80.0 million in tax-exempt water facility revenue bonds through the Pennsylvania Economic Development Financing Authority ("PEDFA"). The proceeds from the offering will be used to fund certain capital improvement projects. As of December 31, 2009, we have drawn down \$40.7 million of these funds.
- (h) On August 26, 2009, PAWC received \$2.2 million through the Pennsylvania Infrastructure Investment Authority for the installation of mains in the Hanover and Colliers Water System.

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- (i) Ohio-American Water Company received proceeds from the Ohio Water Development Authority. The proceeds were used to fund line replacements in the Ashtabula service area.
- (j) On October 20, 2009, NJAWC closed an offering of tax-exempt water facility revenue bonds. The proceeds were use to pay down short-term debt.

In connection with the Contract Operations' Acquisition, we assumed \$4.0 million of capital lease obligations. Also, in December 2009, we refunded and reissued \$93.1 million of Pennsylvania-American Water Company private activity general mortgage bonds scheduled to mature in 2032 and 2033. The bond's 3.60% fixed interest rate expired in December 2009, and the new bonds have a fixed interest rate of 5.50% with a maturity of 2039.

The following long-term debt was retired through optional redemption or payment at maturity during 2009:

Company	Type	Interest Rate	Maturity	Amount (in thousands)
American Water Capital Corp.	Floating rate	1.55%-2.20%	2018-2032	\$ 86,860
American Water Capital Corp.	Senior notes-fixed rate	6.87%-8.25%	2011-2038	28,147
Other subsidiaries	Floating rate	1.50%-10.00%	2015-2032	33,420
Other subsidiaries	Notes payable and other	5.76%-9.87%	2009-2013	171
Other subsidiaries	Mortgage bonds-fixed rate	6.90%-9.22%	2009-2011	20,847
Other subsidiaries	Private activity-fixed rate	0.00%-5.90%	2009-2034	8,505
Mandatory redeemable preferred stock		4.60%-6.00%	2013-2019	218
Other	Capital lease			181
Total retirements & redemptions				\$ 178,349

The following long-term debt was issued in 2008:

Company	Type	Interest Rate	Maturity	Amount (in thousands)
American Water Capital Corp.	Senior notes	6.25%	2018(a)	\$ 110,000
American Water Capital Corp.	Senior notes	6.55%	2023(a)	90,000
American Water Capital Corp.	Senior notes	10.00%	2038(a)	75,000
Other subsidiaries	State financing authority loans and other	1.00%-1.39%	2024-2025(b)	4,941
Total issuances				\$ 279,941

- (a) Proceeds used to repay short-term debt incurred to fund capital expenditures and general working capital purposes. In addition cash equity contribution from RWE of \$245.0 million was also used to repay short-term debt.
- (b) The proceeds from the offering were used to fund certain capital improvement projects.

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The following long-term debt and preferred stock with mandatory redemption requirements were repurchased or retired through optional redemption or payment at maturity during 2008:

Company	Type	Interest Rate	Maturity	Amount (in thousands)
<i>Long-term debt:</i>				
American Water Capital Corp.	Senior notes-fixed rate	6.87%	2011	\$ 28,000
Other subsidiaries	Senior notes-floating rate	6.48%-10.00%	2021-2032	144,725
Other subsidiaries	Subsidiary fixed rate bonds and notes	5.05%-9.35%	2008-2029	61,065
Other subsidiaries	State financing authority loans and other	0.00%-9.87%	2008-2034	10,389
<i>Preferred stock with mandatory redemption requirements:</i>				
Other subsidiaries		4.60%-6.00%	2013-2019	218
Total retirements & redemptions				<u>\$ 244,397</u>

From time to time and as market conditions warrant, we may engage in long-term debt retirements via tender offers, open market repurchases or other viable alternatives to strengthen our balance sheets.

Credit Facilities and Short-Term Debt

The components of short-term debt were as follows:

	December 31, 2010	December 31, 2009
	(in thousands)	
Revolving credit lines	\$ 2,734	\$ —
Commercial paper, net of discount	175,290	84,995
Book-overdraft	51,675	34,502
Total short-term debt	<u>\$ 229,699</u>	<u>\$ 119,497</u>

AWCC, our finance subsidiary, has entered into a \$10.0 million committed revolving line of credit with PNC Bank, N.A which was scheduled to terminate on December 31, 2010. On December 22, 2010, this line of credit was extended for an additional year and will terminate on December 31, 2011 unless extended. This line is used primarily for short-term working capital needs. Interest rates on advances under this line of credit are based on the one month LIBOR on the outstanding debt plus 175 basis points for 2010 and 2011. In addition, there is a fee of 25 basis points charged quarterly on the portion of the commitment that is undrawn. As of December 31, 2010, the outstanding borrowing against this credit line was \$2.7 million. There were no outstanding borrowings under this revolving line of credit at December 31, 2009. If this line of credit were not extended beyond its current maturity date of December 31, 2011, AWCC would continue to have access to its \$840.0 million unsecured revolving credit facility described below.

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AWCC has entered into an \$840.0 million senior unsecured credit facility syndicated among the following group of 11 banks with JPMorgan Chase Bank, N.A. acting as administrative agent.

Bank	Commitment Amount Through September 15, 2012	Commitment Amount Through September 15, 2013
	(in thousands)	
JPMorgan Chase Bank, N.A.	\$ 115,000	\$ —
Citibank, N.A.	115,000	115,000
Citizens Bank of Pennsylvania	80,000	80,000
Credit Suisse	80,000	80,000
William Street Commitment Corporation	80,000	80,000
Merrill Lynch Bank USA	80,000	80,000
Morgan Stanley Bank	80,000	80,000
UBS Loan Finance LLC	80,000	80,000
National City Bank	50,000	50,000
PNC Bank, National Association	40,000	40,000
The Bank of New York Mellon	40,000	—
	\$ 840,000	\$ 685,000

This revolving credit facility, which is scheduled to expire on September 15, 2012, is principally used to support the commercial paper program at AWCC and to provide up to \$150.0 million in letters of credit. A majority of the banks agreed to further extend \$685.0 million of commitments under this revolving credit facility to September 15, 2013. If any lender defaults in its obligation to fund advances, the Company may request the other lenders to assume the defaulting lender's commitment or replace such defaulting lender by designating an assignee willing to assume the commitment. However, the remaining lenders have no obligation to assume a defaulting lender's commitment and we can provide no assurances that we will be able to replace a defaulting lender. AWCC had no outstanding borrowings under the credit facilities and \$36.4 million of outstanding letters of credit under this credit facility as of February 22, 2011. Also, as of February 22, 2011, AWCC had \$194.7 million of commercial paper outstanding.

On December 31, 2010 and 2009, AWCC had the following sub-limits and available capacity under the revolving credit facility and indicated amounts of outstanding commercial paper:

	Credit Facility Commitment	Available Credit Facility Capacity	Letter of Credit Sublimit	Available Letter of Credit Capacity	Outstanding Commercial Paper (Net of Discount)	Credit Line Borrowings
	(in thousands)					
December 31, 2010	\$ 850,000	\$ 810,469	\$ 150,000	\$ 113,203	\$ 175,290	\$ 2,734
December 31, 2009	\$ 850,000	\$ 801,754	\$ 150,000	\$ 101,754	\$ 84,995	\$ —

Interest rates on advances under the revolving credit facility are based on either prime or LIBOR plus an applicable margin based upon our credit ratings, as well as total outstanding amounts under the agreement at the time of the borrowing. The maximum LIBOR margin is 55 basis points.

The weighted average interest rate on short-term borrowings for the years ended December 31, 2010 and 2009 was approximately 0.42% and 0.82%, respectively.

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Capital Structure

The following table indicates the percentage of our capitalization represented by the components of our capital structure as of December 31, 2010, 2009 and 2008:

	At December 31, 2010	At December 31, 2009	At December 31, 2008
Common stockholder equity and preferred stock without mandatory redemption rights	42%	42%	44%
Long-term debt and redeemable preferred stock at redemption value	55%	56%	49%
Short-term debt and current portion of long-term debt	3%	2%	7%
	<u>100%</u>	<u>100%</u>	<u>100%</u>

The changes to our capital resource mix during 2008 were accomplished through the various financing activities noted above in "Cash from Financing Activities." The capital structure at December 31, 2010 and December 31, 2009 more closely reflects our expected future capital structure.

As a condition to some PUC approvals of the RWE divestiture, we agreed to maintain a capital structure with a minimum of 45% common equity at the time of the consummation of our initial public offering on April 28, 2008. As a result of the impairment charge recorded for the three months ended March 31, 2008, our capital structure did not meet this minimum requirement and we received a cash equity contribution from RWE of \$245.0 million on May 1, 2008. This cash was used to repay \$243.4 million of short-term debt. Following the initial public offering, RWE was not obligated to make any additional capital contributions.

Debt Covenants

Our debt agreements contain financial and non-financial covenants. To the extent that we are not in compliance, we or our subsidiaries may be restricted in our ability to pay dividends, issue debt or access our revolving credit lines. We were in compliance with our covenants as of December 31, 2010. However our California and Ohio subsidiaries did not meet the interest coverage test of at least 1.5x for the twelve months ended December 31, 2010 under the mortgage indenture and therefore they would be unable to issue new secured debt. See "Risk Factors—Risks Related to Our Industry and Business—Our failure to comply with restrictive covenants under our credit facilities could trigger repayment obligations." Long-term debt indentures contain a number of covenants that, among other things, limit the Company from issuing debt secured by the Company's assets, subject to certain exceptions.

The revolving credit facility requires us to maintain a ratio of consolidated debt to consolidated capitalization of not more than 0.70 to 1.00. On December 31, 2010, our ratio was 0.58 and therefore we were in compliance with the ratio.

Security Ratings

Our access to the capital markets, including the commercial paper market, and respective financing costs in those markets, depends on the securities ratings of the entity that is accessing the capital markets. We primarily access the capital markets, including the commercial paper market, through AWCC. However, we also issue debt at our regulated subsidiaries, primarily in the form of tax exempt securities, to lower our overall cost of debt. The following table shows the Company's securities ratings as of December 31, 2010:

Securities	Moody's Investors Service	Standard & Poor's Ratings Service
Senior unsecured debt	Baa2	BBB+
Commercial paper	P2	A2

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On January 28, 2011, Standard & Poor's Ratings Services, which we refer to as S&P, reaffirmed its "BBB+" corporate credit rating on AWCC and American Water and AWCC's "A2" short-term rating. S&P's rating outlook for both American Water and AWCC is stable.

On November 19, 2010, Moody's Investors Service, which we refer to as Moody's, affirmed its "Baa2" corporate credit rating on AWCC and American Water and affirmed AWCC's "P2" short-term rating. The rating outlook for both American Water and AWCC is stable.

A security rating is not a recommendation to buy, sell or hold securities and may be subject to revision or withdrawal at any time by the assigning rating agency, and each rating should be evaluated independently of any other rating. Security ratings are highly dependent upon our ability to generate cash flows in an amount sufficient to service our debt and meet our investment plans. We can provide no assurances that our ability to generate cash flow is sufficient to maintain our existing ratings. None of our borrowings are subject to default or prepayment as a result of the downgrading of these security ratings, although such a downgrading could increase fees and interest charges under our credit facilities.

As part of the normal course of business, we routinely enter into contracts for the purchase and sale of water, energy, fuels and other services. These contracts either contain express provisions or otherwise permit us and our counterparties to demand adequate assurance of future performance when there are reasonable grounds for doing so. In accordance with the contracts and applicable contract law, if we are downgraded by a credit rating agency, especially if such downgrade is to a level below investment grade, it is possible that a counterparty would attempt to rely on such a downgrade as a basis for making a demand for adequate assurance of future performance. Depending on the Company's net position with a counterparty, the demand could be for the posting of collateral. In the absence of expressly agreed provisions that specify the collateral that must be provided, the obligation to supply the collateral requested will be a function of the facts and circumstances of the Company's situation at the time of the demand. If we can reasonably claim that we are willing and financially able to perform our obligations, it may be possible to argue successfully that no collateral should be posted or that only an amount equal to two or three months of future payments should be sufficient. We do not expect to post any collateral which will have a material adverse impact on the Company's results of operations, financial position or cash flows.

Dividends

Our board of directors has adopted a dividend policy to distribute to our stockholders a portion of our net cash provided by operating activities as regular quarterly dividends, rather than retaining that cash for other purposes. Generally, our policy is to distribute 50% to 70% of our net income annually. We expect that dividends will be paid quarterly to holders of record approximately 15 days prior to the distribution date. Since the dividends on our common stock will not be cumulative, only declared dividends will be paid.

During 2010, 2009 and 2008, we paid \$150.3 million, \$137.3 million and \$64.1 million in dividends, respectively. For 2010, we paid a dividend of \$0.22 per share on December 1, 2010 and September 1, 2010 and \$0.21 per share on June 1, 2010 and March 1, 2010. For 2009, we paid a dividend of \$0.21 per share on December 1, 2009 and September 1, 2009 and \$0.20 per share on June 1, 2009 and March 2, 2009. For 2008, we paid a dividend of \$0.20 per share on September 2, 2008 and December 1, 2008.

Subject to applicable law and the discretion of our board of directors, we will pay cash dividends of approximately \$0.22 per share per quarter in 2011, to be paid approximately 60 days after the end of each fiscal quarter. The quarterly and annual average aggregate dividend amounts for the four quarters would be \$38.5 million, and \$154.0 million annually. The aggregate dividend amounts are based upon 175.0 million shares outstanding as of December 31, 2010. Under Delaware law, our board of directors may declare dividends only to the extent of our "surplus" (which is defined as total assets at fair market value *minus* total liabilities, *minus*

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statutory capital) or, if there is no surplus, out of our net profits for the then current and/or immediately preceding fiscal year. Although we believe we will have sufficient net profits or surplus to pay dividends at the anticipated levels during the next four quarters, our board of directors will seek periodically to assure itself of this before actually declaring any dividends. In future periods, our board of directors may seek opinions from outside valuation firms to the effect that our solvency or assets are sufficient to allow payment of dividends, and such opinions may not be forthcoming. If we sought and were not able to obtain such an opinion, we likely would not be able to pay dividends.

On January 28, 2011, our board of directors declared a quarterly cash dividend payment of \$0.22 per share payable on March 1, 2011 to all shareholders of record as of February 18, 2011.

Current Credit Market Position

The Company believes it has sufficient liquidity should there be a disruption of the capital and credit markets. The Company funds liquidity needs for capital investment, working capital and other financial commitments through cash flows from operations, public and private debt offerings, commercial paper markets and credit facilities with \$850.0 million in aggregate total commitments from a diversified group of banks. The Company closely monitors the financial condition of the financial institutions associated with its credit facilities.

The Company expects to have access to liquidity in the capital markets on favorable terms before the maturity dates of its current credit facilities and the Company does not expect a significant number of its lenders to default on their commitments thereunder. In addition, the Company can delay major capital investments or pursue financing from other sources to preserve liquidity, if necessary. The Company believes it can rely upon cash flows from operations to meet its obligations and fund its minimum required capital investments for an extended period of time.

Regulatory Restrictions

The issuance by the Company or AWCC of long-term debt or equity securities does not require authorization of any state PUC if no guarantee or pledge of the regulated subsidiaries is utilized. However, state PUC authorization is required to issue long-term debt or equity securities at most of our regulated subsidiaries. Our regulated subsidiaries normally obtain the required approvals on a periodic basis to cover their anticipated financing needs for a period of time or in connection with a specific financing.

Under applicable law, our subsidiaries can pay dividends only from retained, undistributed or current earnings. A significant loss recorded at a subsidiary may limit the dividends that the subsidiary can distribute to us.

Insurance Coverage

We carry various property, casualty and financial insurance policies with limits, deductibles and exclusions that we believe are consistent with industry standards. However, insurance coverage may not be adequate or available to cover unanticipated losses or claims. We are self-insured to the extent that losses are within the policy deductible or exceed the amount of insurance maintained. Such losses could have a material adverse effect on our short-term and long-term financial condition and our results of operations and cash flows.

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Contractual Obligations and Commitments

We enter into obligations with third parties in the ordinary course of business. These financial obligations, as of December 31, 2010, are set forth in the table below:

Contractual obligation	Total	Less Than	(in thousands)		More Than
		1 Year	1-3 Years	3-5 Years	5 Years
Long-term debt obligations(a)	\$ 5,398,084	\$ 34,898	\$ 142,615	\$ 64,843	\$ 5,155,728
Interest on long-term debt(b)	5,666,463	329,686	655,216	641,625	4,039,936
Capital lease obligations(c)	5,076	635	1,254	1,053	2,134
Interest on capital lease obligations(d)	3,352	443	757	625	1,527
Operating lease obligations(e)	197,798	25,706	41,644	24,909	105,539
Purchase water obligations(f)	723,329	51,600	93,504	91,736	486,489
Other purchase obligations(g)	94,980	94,980	—	—	—
Postretirement benefit plans' obligations(h)	126,512	27,212	50,800	48,500	—
Pension ERISA minimum funding requirement(h)	556,600	139,600	231,800	185,200	—
Preferred stocks with mandatory redemption requirements	23,989	668	2,756	3,912	16,653
Interest on preferred stocks with mandatory redemption requirements	20,397	2,014	3,789	3,164	11,430
Other obligations(i)	1,105,991	243,656	155,364	69,875	637,096
Total	\$ 13,922,571	\$ 951,098	\$ 1,379,499	\$ 1,135,442	\$ 10,456,532

Note: The above table reflects only financial obligations and commitments. Therefore, performance obligations associated with our Market-Based Operations are not included in the above amounts.

- (a) Represents sinking fund obligations and debt maturities. Variable rate debt of \$8,560 is included in 3-5 years category based on a contractual maturity date. Amount is classified as current portion of long-term debt in the Consolidated Balance Sheet (See Note 11—Long-term Debt).
- (b) Represents expected interest payments on outstanding long-term debt. Amounts reported may differ from actual due to future refinancing of debt.
- (c) Represents future minimum payments under noncancelable capital leases.
- (d) Represents expected interest payments on noncancelable capital leases.
- (e) Represents future minimum payments under noncancelable operating leases, primarily for the lease of motor vehicles, buildings, land and other equipment including water facilities and systems constructed by partners under the Public-Private Partnerships described below.
- (f) Represents future payments under water purchase agreements for minimum quantities of water.
- (g) Represents the open purchase orders as of December 31, 2010, for goods and services purchased in the ordinary course of business.
- (h) Represents contributions expected to be made to pension and post retirement benefit plans for the years 2011 through 2015.
- (i) Includes an estimate of advances for construction to be refunded, capital expenditures estimated to be required under legal and binding contractual obligations, contracts entered into for energy purchases, a liability associated with a conservation agreement and service agreements. Subsequent to December 31, 2010, one of our operating companies has committed to provide \$8.0 million under a revolving credit line.

Public-Private Partnerships

West Virginia-American Water Company, which we refer to as WVAWC, has entered into a series of agreements with various public entities, which we refer to as the Partners, to establish certain joint ventures, commonly referred to as "public-private partnerships." Under the public-private partnerships, WVAWC constructed utility plant, financed by WVAWC, and the Partners constructed utility plant (connected to

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WVAWC's property), financed by the Partners. WVAWC agreed to transfer and convey some of its real and personal property to the Partners in exchange for an equal principal amount of Industrial Development Bonds, commonly referred to as IDBs, issued by the Partners under a state Industrial Development Bond and Commercial Development Act. WVAWC leased back the total facilities, including portions funded by both WVAWC and the Partners, under leases for a period of 40 years.

WVAWC leased back the transferred facilities under capital leases for a period of 40 years. The leases have payments that approximate the payments required by the terms of the IDBs. We have presented the transaction on a net basis in the consolidated financial statements. The carrying value of the transferred facilities was approximately \$159.7 million at December 31, 2010.

Market-Based Operations' Performance Obligations

Our Market-Based Operations' Contract Operations Group enters into agreements for the provision of services to water and wastewater facilities for the United States military, municipalities and other customers. These military services agreements expire between 2051 and 2060 and have remaining performance commitments as measured by estimated remaining contract revenues of \$2,082.0 million at December 31, 2010. The Operations and Maintenance agreements with municipalities and other customers expire between 2011 and 2048 and have remaining performance commitments as measured by estimated remaining contract revenue of \$1,197.0 million at December 31, 2010. Some of the Company's long-term contracts to operate and maintain a municipality's, federal government's or other party's water or wastewater treatment and delivery facilities include responsibility for certain major maintenance for some of the facilities, in exchange for an annual fee.

Critical Accounting Policies and Estimates

The application of critical accounting policies is particularly important to our financial condition and results of operations and provides a framework for management to make significant estimates, assumptions and other judgments. Although our management believes that these estimates, assumptions and other judgments are appropriate, they relate to matters that are inherently uncertain. Accordingly, changes in the estimates, assumptions and other judgments applied to these accounting policies could have a significant impact on our financial condition and results of operations as reflected in our consolidated financial statements.

Our financial condition, results of operations and cash flows are impacted by the methods, assumptions and estimates used in the application of critical accounting policies. Management believes that the areas described below require significant judgment in the application of accounting policy or in making estimates and assumptions in matters that are inherently uncertain and that may change in subsequent periods. Our management has reviewed these critical accounting policies, and the estimates and assumptions regarding them, with our audit committee. In addition, our management has also reviewed the following disclosures regarding the application of these critical accounting policies with the audit committee.

Regulatory Accounting

Our regulated utility subsidiaries are subject to regulation by state PUCs and the local governments of the states in which they operate. As such, we account for these regulated operations in accordance with authoritative guidance that requires us to reflect the effects of rate regulation in our financial statements. Use of the authoritative guidance is applicable to utility operations that meet the following criteria (1) third-party regulation of rates; (2) cost-based rates; and (3) a reasonable assumption that all costs will be recoverable from customers through rates. As of December 31, 2010, we had concluded that the operations of our regulated subsidiaries meet the criteria. If it is concluded in a future period that a separable portion of the business no longer meets the criteria, we are required to eliminate the financial statement effects of regulation for that part of the business, which would include the elimination of any or all regulatory assets and liabilities that had been recorded in the consolidated financial statements. Failure to meet the criteria of the authoritative guidance could materially impact our consolidated financial statements as a one-time extraordinary item and continued impacts on our operating activities.

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Regulatory assets represent costs that have been deferred to future periods when it is probable that the regulator will allow for recovery through rates charged to customers. Regulatory liabilities represent revenues received from customers to fund expected costs that have not yet been incurred. As of December 31, 2010, we have recorded \$1,016.0 million of net regulatory assets within our Consolidated Financial Statements. Also, at December 31, 2010, we had recorded \$303.7 million of regulatory liabilities within our consolidated financial statements. See Note 7 of the Notes to Consolidated Financial Statements for further information regarding the significant regulatory assets and liabilities.

For each regulatory jurisdiction where we conduct business, we continually assess whether the regulatory assets and liabilities continue to meet the criteria for probable future recovery or settlement. This assessment includes consideration of factors such as changes in applicable regulatory environments, recent rate orders to other regulated entities in the same jurisdiction, the status of any pending or potential deregulation legislation and the ability to recover costs through regulated rates. If subsequent events indicate that the regulatory assets or liabilities no longer meet the criteria for probable future recovery or settlement, our statement of operations and financial position could be materially affected.

Goodwill

The Company's annual impairment reviews are performed as of November 30 of each year, in conjunction with the timing of the completion of the Company's annual strategic business plan. At December 31, 2010, the Company's goodwill was \$1,250.7 million. The Company also undertakes interim reviews when the Company determines that a triggering event that would more likely than not reduce the fair value of a reporting unit below its carrying value has occurred.

The Company uses a two-step impairment test to identify potential goodwill impairment and measure the amount of a goodwill impairment loss to be recognized (if any). The step 1 calculation used to identify potential impairment compares the calculated fair value for each of the Company's reporting units to their respective net carrying values (book values), including goodwill, on the measurement date. If the fair value of any reporting unit is less than such reporting unit's carrying value, then step 2 is performed to measure the amount of the impairment loss (if any) for such reporting unit.

The step 2 calculation of the impairment test compares, by reporting unit, the implied fair value of the goodwill to the carrying value of goodwill. The implied fair value of goodwill is equal to the excess of the fair value of each reporting unit above the fair value of such reporting unit's identified assets and liabilities. If the carrying value of goodwill exceeds the implied fair value of goodwill for any reporting unit, an impairment loss is recognized in an amount equal to the excess (not to exceed the carrying value of goodwill) for that reporting unit.

The determination of the fair value of each reporting unit and the fair value of each reporting unit's assets and liabilities is performed as of the measurement date using observable market data before and after the measurement date (if that subsequent information is relevant to the fair value on the measurement date).

For the November 30, 2010 impairment test, the estimated fair value of the Regulated reporting unit for step 1 was based on a combination of the following valuation techniques:

- observable trading prices of comparable equity securities of publicly-traded water utilities considered by us to be the Company's peers; and
- discounted cash flow models developed from the Company's internal forecasts.

The first valuation technique applies average peer multiples to the Regulated reporting unit's historic and forecasted cash flows. The peer multiples are calculated using the average trading prices of comparable equity securities of publicly-traded water utilities, their published cash flows and forecasts of market price and cash flows for those peers.

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The second valuation technique forecasts each reporting unit's three-year cash flows using an estimated long-term growth rate and discounts these cash flows at their respective estimated weighted average cost of capital.

Because of the unique nature, small size and lack of historical earnings of most of the Market-Based reporting units, a market approach historically could not be reasonably applied. As such the estimated fair values of the Market-Based reporting units were determined entirely on the basis of discounted cash flow models. For the November 30, 2010 impairment test, a market approach was introduced to the Market-Based reporting units as the larger Market-Based reporting units have begun to mature.

The Company has completed its November 30, 2010 annual impairment review and does not believe that the Company's goodwill balance was impaired. The Company's fair value calculated in its 2010 impairment test period was greater than the aggregate carrying value of its reporting units.

However, there can be no assurances that the Company will not be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to the Company's performance. These market events could include a decline over a period of time of the Company's stock price, a decline over a period of time in valuation multiples of comparable water utilities, the lack of an increase in the Company's market price consistent with its peer companies, or decreases in control premiums. A decline in the forecasted results in our business plan, such as changes in rate case results or capital investment budgets or changes in our interest rates, could also result in an impairment charge.

We also made certain assumptions, which we believe to be appropriate, that support the fair value of our reporting units. We considered, in addition to the listed trading price of the Company's shares, the applicability of a control premium to our shares and certain other factors we deemed appropriate. As a result, we concluded that the Company's fair value exceeds what we might otherwise have concluded had we relied on market price alone.

The difference between our calculated market capitalization (which approximates carrying value) and the aggregate fair value of our reporting units resulted from an estimated control premium. The estimated control premium represents the incremental premium a buyer is willing to pay to acquire a controlling, majority interest in the Company. In estimating the control premium, management principally considered the current market conditions and historical premiums paid in utility acquisitions observed in the marketplace.

For the year ended December 31, 2010, no impairment charge was recorded. For the years ended December 31, 2009 and 2008, the Company recorded impairment charges for goodwill in the amounts of \$450.0 million and \$750.0 million, respectively.

Impairment of Long-Lived Assets

Long-lived assets include land, buildings, equipment and long-term investments. Long-lived assets, other than investments and land are depreciated over their estimated useful lives, and are reviewed for impairment whenever changes in circumstances indicate the carrying value of the asset may not be recoverable. Such circumstances would include items such as a significant decrease in the market value of a long-lived asset, a significant adverse change in the manner in which the asset is being used or planned to be used or in its physical condition, or a history of operating or cash flow losses associated with the use of the asset. In addition, changes in the expected useful life of these long-lived assets may also be an impairment indicator. When such events or changes occur, we estimate the fair value of the asset from future cash flows expected to result from the use and, if applicable, the eventual disposition of the assets, and compare that to the carrying value of the asset. If the carrying value is greater than the fair value, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value. The key variables that must be estimated include assumptions regarding sales volume, rates, operating costs, labor and other benefit costs, capital additions, assumed discount rates and other economic factors. These variables require significant management judgment and include inherent uncertainties since they are forecasting future events. A variation in the assumptions used could lead to a

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different conclusion regarding the realizability of an asset and, thus, could have a significant effect on the consolidated financial statements.

The long-lived assets of the regulated utility subsidiaries are grouped on a separate entity basis for impairment testing as they are integrated state-wide operations that do not have the option to curtail service and generally have uniform tariffs. A regulatory asset is charged to earnings if and when future recovery in rates of that asset is no longer probable.

The fair values of long-term investments are dependent on the financial performance and solvency of the entities in which we invest, as well as volatility inherent in the external markets. In assessing potential impairment for these investments, we consider these factors. If such assets are considered impaired, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value.

Revenue Recognition

Revenues of the regulated utility subsidiaries are recognized as water and wastewater services are delivered to customers and include amounts billed to customers on a cycle basis and unbilled amounts based on estimated usage from the date of the latest meter reading to the end of the accounting period. Unbilled utility revenues as of December 31, 2010 and 2009 were \$140.9 million and \$130.3 million, respectively. Increases in volumes delivered to the utilities' customers and favorable rate mix due to changes in usage patterns in customer classes in the period could be significant to the calculation of unbilled revenue. Changes in the timing of meter reading schedules and the number and type of customers scheduled for each meter reading date would also have an effect on the estimated unbilled revenue; however, since the majority of our customers are billed on a monthly basis, total operating revenues would remain materially unchanged.

Revenue from Market-Based Operations is recognized as services are rendered. Revenues from certain construction projects are recognized over the contract term based on the estimated percentage of completion during the period compared to the total estimated services to be provided over the entire contract. Losses on contracts are recognized during the period in which the loss first becomes probable and estimable. Revenues recognized during the period in excess of billings on construction contracts are recorded as unbilled revenue. Billings in excess of revenues recognized on construction contracts are recorded as other current liabilities on the balance sheet until the recognition criteria are met. Changes in contract performance and related estimated contract profitability may result in revisions to costs and revenues and are recognized in the period in which revisions are determined.

Accounting for Income Taxes

The parent company and its subsidiaries participate in a consolidated federal income tax return for United States tax purposes. Members of the consolidated group are charged with the amount of federal income tax expense determined as if they filed separate returns.

Certain income and expense items are accounted for in different time periods for financial reporting than for income tax reporting purposes. The Company provides deferred income taxes on the difference between the tax basis of assets and liabilities and the amounts at which they are carried in the financial statements. These deferred income taxes are based on the enacted tax rates expected to be in effect when these temporary differences are projected to reverse. In addition, the regulated utility subsidiaries recognize regulatory assets and liabilities for the effect on revenues expected to be realized as the tax effects of temporary differences, previously flowed through to customers, reverse.

Accounting for Pension and Postretirement Benefits

We maintain noncontributory defined benefit pension plans covering eligible employees of our regulated utility and shared service operations. The pension plans have been closed for any employees hired on or after January 1, 2006. Union employees hired on or after January 1, 2001 and non-union employees hired on or after

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January 1, 2006 will be provided with a 5.25% of base pay defined contribution plan. We also maintain postretirement benefit plans for eligible retirees. The retiree welfare plans are closed for union employees hired on or after January 1, 2006. The plans had previously closed for non-union employees hired on or after January 1, 2002. See Note 15 of the Notes to Consolidated Financial Statements for further information regarding the accounting for the defined benefit pension plans and postretirement benefit plans.

The Company's pension and postretirement benefit costs are developed from actuarial valuations. Inherent in these valuations are key assumptions provided by the Company to its actuaries, including the discount rate and expected long-term rate of return on plan assets. Material changes in the Company's pension and postretirement benefit costs may occur in the future due to changes in these assumptions as well as fluctuations in plan assets. The assumptions are selected to represent the average expected experience over time and may differ in any one year from actual experience due to changes in capital markets and the overall economy. These differences will impact the amount of pension and other postretirement benefit expense that the Company recognizes. The primary assumptions are:

- **Discount Rate**—The discount rate is used in calculating the present value of benefits, which are based on projections of benefit payments to be made in the future. The objective in selecting the discount rate is to measure the single amount that, if invested at the measurement date in a portfolio of high-quality debt instruments, would provide the necessary future cash flows to pay the accumulated benefits when due;
- **Expected Return on Plan Assets ("EROA")**—Management projects the future return on plan assets considering prior performance, but primarily based upon the plans' mix of assets and expectations for the long-term returns on those asset classes. These projected returns reduce the net benefit costs we record currently;
- **Rate of Compensation Increase**—Management projects employees' annual pay increases, which are used to project employees' pension benefits at retirement; and
- **Health Care Cost Trend Rate**—Management projects the expected increases in the cost of health care.

The discount rate is subject to change each year, consistent with changes in applicable high-quality, long-term corporate bond indices. In selecting a discount rate for our pension and postretirement benefit plans, a yield curve was developed for a portfolio containing the majority of United States-issued Aa-graded non-callable (or callable with make-whole provisions) corporate bonds. For each plan, the discount rate was developed as the level equivalent rate that would yield the same present value as using spot rates aligned with the projected benefit payments. The discount rate for determining pension benefit obligations was 5.32%, 5.93% and 6.12% at December 31, 2010, 2009 and 2008, respectively. The discount rate for determining other post-retirement benefit obligations was 5.27%, 5.82% and 6.09% at December 31, 2010, 2009 and 2008, respectively.

In selecting an expected return on plan assets, we considered tax implications, past performance and economic forecasts for the types of investments held by the plans. The long-term EROA assumption used in calculating pension cost was 7.90% for 2010, 2009 and 2008. The weighted average EROA assumption used in calculating other postretirement benefit costs was 7.60% for 2010 and 2009 and 7.75% for 2008.

The asset allocations for the Company's U.S. pension plan at December 31, 2010 and 2009 by asset category, are as follows:

Asset category	Target Allocation 2010	Percentage of Plan Assets At December 31,	
		2010	2009
Equity securities	70%	70%	71%
Fixed income	30%	30%	29%
Total	100%	100%	100%

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The investment policy guidelines of the pension plan require that the fixed income portfolio has an overall weighted average credit rating of AA or better by Standard & Poor's and the minimum credit quality for fixed income securities must be BBB- or better. Up to 20% of the portfolio may be invested in collateralized mortgage obligations backed by the United States Government.

The Company's other postretirement benefit plans are partially funded. The asset allocations for the Company's other postretirement benefit plans at December 31, 2010 and 2009, by asset category, are as follows:

Asset category	Target Allocation 2010	Percentage of Plan Assets At December 31,	
		2010	2009
Equity securities	70%	70%	70%
Fixed income	30%	30%	30%
Total	100%	100%	100%

The Company's investment policy, and related target asset allocation, is evaluated periodically through asset liability studies. The studies consider projected cash flows of maturity liabilities, projected asset class return risk, and correlation and risk tolerance.

The pension and postretirement welfare plan trusts investments include debt and equity securities held directly and through commingled funds. The trustee for the Company's defined benefit pension and post retirement welfare plans uses independent valuation firms to calculate the fair value of plan assets. Additionally, the company independently verifies the assets values. Approximately 78.2% of the assets are valued using the quoted market price for the assets in an active market at the measurement date, while 18.1% of the assets are valued using other observable inputs and 3.7% use unobservable inputs.

In selecting a rate of compensation increase, we consider past experience in light of movements in inflation rates. Our rate of compensation increase was 3.50% for 2010 and 4.00% for 2009 and 2008.

In selecting health care cost trend rates, we consider past performance and forecasts of increases in health care costs. Our health care cost trend rate used to calculate the periodic cost was 8.50% in 2010 gradually declining to 5.00% in 2017 and thereafter.

Assumed health care cost trend rates have a significant effect on the amounts reported for the other postretirement benefit plans. The health care cost trend rate is based on historical rates and expected market conditions. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

Change in Actuarial Assumption	Impact on Other Postretirement Benefit Obligation at December 31, 2010	Impact on 2010 Total Service and Interest Cost Components
	(in thousands)	
Increase assumed health care cost trend by 1%	\$ 79,087	\$ 7,236
Decrease assumed health care cost trend by 1%	\$ 65,679	\$ 5,933

We will use a discount rate and EROA of 5.32% and 7.90%, respectively, for estimating our 2011 pension costs. Additionally, we will use a discount rate and EROA of 5.27% and 7.60%, respectively, for estimating our 2011 other postretirement benefit costs. A decrease in the discount rate or the EROA would increase our pension expense. Our 2010 and 2009 pension and postretirement costs were \$80.0 million and \$72.6 million, respectively. The Company currently expects to make pension and postretirement benefit contributions to the plan trusts of \$166.8 million, \$155.0 million, \$127.6 million, \$126.4 million and \$107.3 million in 2011, 2012, 2013, 2014 and 2015 respectively. Actual amounts contributed could change significantly from these estimates.

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The assumptions are reviewed annually and at any interim remeasurement of the plan obligations. The impact of assumption changes is reflected in the recorded pension and postretirement benefit amounts as they occur, or over a period of time if allowed under applicable accounting standards. As these assumptions change from period to period, recorded pension and postretirement benefit amounts and funding requirements could also change.

New Accounting Standards**Revenue arrangements with Multiple Deliverables**

In October 2009, the Financial Accounting Standards Board ("FASB") issued authoritative guidance that amends existing guidance for identifying separate deliverables in a revenue-generating transaction where multiple deliverables exist, and provides guidance for allocating and recognizing revenue based on those separate deliverables. The guidance is expected to result in more multiple-deliverable arrangements being separable than under current guidance. This guidance is effective for the Company beginning on January 1, 2011 and is required to be applied prospectively to new or significantly modified revenue arrangements. The Company is currently assessing the impact that the guidance may have on the Company's results of operations, financial position or cash flows.

Business Combinations

In December 2010, the FASB clarified the requirements for reporting of pro forma revenue and earnings disclosures for business combinations. The accounting update specifies that if a public entity presents comparative financial statements, the entity should disclose revenue and earnings of the combined entity as though the business combination(s) that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period only. The amendments also expand the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro forma revenue and earnings. The amendments are effective prospectively for business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2010. As this guidance clarifies and provides for additional disclosure requirements only, the adoption of this guidance is not expected to have an impact on the Company's results of operations, financial position or cash flows.

Intangibles—Goodwill

In December 2010, the FASB issued authoritative guidance that modifies step 1 of the goodwill impairment test for reporting units with zero or negative carrying amounts. The update requires that for those reporting units, an entity is required to perform step 2 of the goodwill impairment test if it is more likely than not that a goodwill impairment exists. In determining whether it is more likely than not that a goodwill impairment exists, an entity should consider whether there are any adverse qualitative factors indicating that an impairment may exist. The qualitative factors are consistent with existing authoritative guidance, which requires that goodwill of a reporting unit be tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. This guidance is effective for fiscal years, and interim periods within those years, beginning after December 15, 2010. The Company does not expect the adoption of this update to have a significant impact on the Company's results of operations, financial position or cash flows.

Fair Value Measurements

In January 2010, the FASB issued authoritative guidance that requires new disclosures of (i) the amounts of significant transfers into and out of Level 1 and Level 2 of the fair value hierarchy and the reasons for those transfers and (ii) information in the reconciliation of recurring Level 3 measurements (those using significant unobservable inputs) about purchases, sales, issuances, and settlements on a gross basis. This update also clarifies existing fair value disclosures about the level of disaggregation and about inputs and valuation

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techniques used to measure fair value. This guidance was effective for interim and annual periods beginning after December 15, 2009, except for the requirement to disclose information about purchases, sales, issuances and settlements in the reconciliation of Level 3 measurements, which does not become effective until interim and annual periods beginning after December 15, 2010. As this guidance clarifies and provides for additional disclosure requirements only, the adoption of this guidance did not have an impact on the Company's results of operations, financial position or cash flows. In addition, the Company does not expect the adoption of the requirement to disclose additional information in the reconciliation of Level 3 measurements to have a significant impact on the Company's results of operations, financial position or cash flows.

See Note 2—Significant Accounting Policies in the notes to the audited consolidated financial statements for a discussion of new accounting standards recently adopted or pending adoption.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk associated with changes in commodity prices, equity prices and interest rates. We are exposed to risks from changes in interest rates as a result of our issuance of variable and fixed rate debt and commercial paper. We manage our interest rate exposure by limiting our variable rate exposure and by monitoring the effects of market changes in interest rates. We also have the ability to enter into financial derivative instruments, which could include instruments such as, but not limited to, interest rate swaps, swaptions and U.S. Treasury lock agreements to manage and mitigate interest rate risk exposure. As of December 31, 2010, a hypothetical increase of interest rates by 1% associated with our short-term borrowings would result in a \$1.8 million decrease in our pre-tax earnings.

In July 2010, we entered into an interest rate swap agreement with a notional amount of \$100.0 million. This agreement effectively converted the interest on \$100.0 million of outstanding 6.085% fixed rate debt maturing 2017 to a variable rate of six-month LIBOR plus 3.422%. We entered into this interest rate swap to mitigate interest cost at the parent company relating to debt that was incurred by our prior owners and was not used in any manner to finance the cash needs of our subsidiaries. As the swap interest rates are fixed through April 2011, a hypothetical 1% increase in the interest rates associated with the interest swap agreement would result in a \$0.7 million decrease on our pre-tax earnings for the year ended December 31, 2011. This calculation holds all other variables constant and assumes only the discussed changes in interest rates.

Our risks associated with price increases for chemicals, electricity and other commodities are reduced through contractual arrangements and the ability to recover price increases through rates. Non-performance by these commodity suppliers could have a material adverse impact on our results of operations, financial position and cash flows.

The market price of our common stock may experience fluctuations, many of which are unrelated to our operating performance. In particular, our stock price may be affected by general market movements as well as developments specifically related to the water and wastewater industry. These could include, among other things, interest rate movements, quarterly variations or changes in financial estimates by securities analysts and governmental or regulatory actions. This volatility may make it difficult for us to access the capital markets in the future through additional offerings of our common stock, regardless of our financial performance, and such difficulty may preclude us from being able to take advantage of certain business opportunities or meet business obligations.

We are exposed to credit risk through our water, wastewater and other water-related activities for both our Regulated Businesses and Market-Based Operations. Our Regulated Businesses serve residential, commercial, industrial and municipal customers while our Market-Based Operations engage in business activities with developers, government entities and other customers. Our primary credit risk is exposure to customer default on

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contractual obligations and the associated loss that may be incurred due to the non-payment of customer accounts receivable balances. Our credit risk is managed through established credit and collection policies which are in compliance with applicable regulatory requirements and involve monitoring of customer exposure and the use of credit risk mitigation measures such as letters of credit or prepayment arrangements. Our credit portfolio is diversified with no significant customer or industry concentrations. In addition, our Regulated Businesses are generally able to recover all prudently incurred costs including uncollectible customer accounts receivable expenses and collection costs through rates.

The Company's retirement trust assets are exposed to the market prices of debt and equity securities. Changes to the retirement trust asset value can impact the Company's pension and other benefits expense, funded status and future minimum funding requirements. Our risk is reduced through our ability to recover pension and other benefit costs through rates. In addition, pension and other benefits liabilities decrease as fixed income asset values decrease (fixed income yields rise) since the rate at which we discount pension and other retirement trust asset future obligations is highly correlated to fixed income yields.

We are also exposed to a potential national economic recession or further deterioration in local economic conditions in the markets in which we operate. The credit quality of our customer accounts receivable is dependent on the economy and the ability of our customers to manage through unfavorable economic cycles and other market changes. In addition, as a result of the downturn in the economy and heightened sensitivity of the impact of additional rate increases on certain customers, there can be no assurances that regulators will grant sufficient rate authorizations. Therefore our ability to fully recover operating expense, recover our investment and provide an appropriate return on invested capital made in our Regulated Businesses may be adversely impacted.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of
American Water Works Company, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and comprehensive income (loss), of cash flows, and of changes in common stockholders' equity, present fairly, in all material respects, the financial position of American Water Works Company, Inc. and Subsidiary Companies at December 31, 2010 and December 31, 2009, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2010 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2010, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our audits (which were integrated audits in 2010 and 2009). We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP
Philadelphia, Pennsylvania
February 25, 2011

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American Water Works Company, Inc. and Subsidiary Companies
Consolidated Balance Sheets
(In thousands, except per share data)

	December 31,	
	2010	2009
ASSETS		
Property, plant and equipment		
Utility plant—at original cost, net of accumulated depreciation of \$3,402,466 in 2010 and \$3,168,078 in 2009	\$ 11,058,565	\$ 10,523,844
Nonutility property, net of accumulated depreciation of \$143,051 in 2010 and \$117,245 in 2009	143,052	153,549
Total property, plant and equipment	<u>11,201,617</u>	<u>10,677,393</u>
Current assets		
Cash and cash equivalents	13,112	22,256
Restricted funds	94,066	41,020
Utility customer accounts receivable	152,878	149,417
Allowance for uncollectible accounts	(18,043)	(19,035)
Unbilled utility revenues	140,933	130,262
Other receivables, net	74,309	75,086
Income taxes receivable	0	17,920
Materials and supplies	28,867	29,521
Other	48,185	52,680
Total current assets	<u>534,307</u>	<u>499,127</u>
Regulatory and other long-term assets		
Regulatory assets	1,016,007	952,020
Restricted funds	26,718	20,212
Goodwill	1,250,692	1,250,381
Other	50,432	53,518
Total regulatory and other long-term assets	<u>2,343,849</u>	<u>2,276,131</u>
TOTAL ASSETS	<u>\$ 14,079,773</u>	<u>\$ 13,452,651</u>

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies

Consolidated Balance Sheets—(Continued)

(In thousands, except per share data)

	December 31,	
	2010	2009
CAPITALIZATION AND LIABILITIES		
Capitalization		
Common stock (\$.01 par value, 500,000 shares authorized, 174,996 shares outstanding in 2010 and 174,630 in 2009)	\$ 1,750	\$ 1,746
Paid-in capital	6,156,675	6,140,077
Accumulated deficit	(1,959,235)	(2,076,287)
Accumulated other comprehensive loss	(71,446)	(64,677)
Treasury stock	(19)	0
Common stockholders' equity	4,127,725	4,000,859
Preferred stock without mandatory redemption requirements	4,547	4,557
Total stockholders' equity	4,132,272	4,005,416
Long-term debt		
Long-term debt	5,410,271	5,288,180
Redeemable preferred stock at redemption value	23,271	23,946
Total capitalization	9,565,814	9,317,542
Current liabilities		
Short-term debt	229,699	119,497
Current portion of long-term debt	44,760	54,068
Accounts payable	199,240	138,609
Taxes accrued, including income taxes of \$906 in 2010 and \$1,777 in 2009	46,710	45,552
Interest accrued	60,874	60,128
Other	193,223	189,538
Total current liabilities	774,506	607,392
Regulatory and other long-term liabilities		
Advances for construction	611,209	633,509
Deferred income taxes	1,093,055	851,677
Deferred investment tax credits	31,023	32,590
Regulatory liabilities	303,743	322,281
Accrued pension expense	422,386	431,010
Accrued postretirement benefit expense	215,751	236,045
Other	45,824	47,325
Total regulatory and other long-term liabilities	2,722,991	2,554,437
Contributions in aid of construction	1,016,462	973,280
Commitments and contingencies (See Note 16)	—	—
TOTAL CAPITALIZATION AND LIABILITIES	\$ 14,079,773	\$ 13,452,651

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies
Consolidated Statements of Operations and Comprehensive Income (Loss)
(In thousands, except per share data)

	Years Ended December 31,		
	2010	2009	2008
Operating revenues	\$ 2,710,677	\$ 2,440,703	\$ 2,336,928
Operating expenses			
Operation and maintenance	1,389,212	1,283,417	1,262,283
Depreciation and amortization	354,650	335,178	312,776
General taxes	218,653	199,262	199,139
Loss (gain) on sales of assets	71	(763)	(374)
Impairment charge	0	450,000	750,000
Total operating expenses, net	1,962,586	2,267,094	2,523,824
Operating income (loss)	748,091	173,609	(186,896)
Other income (expenses)			
Interest, net	(315,043)	(296,545)	(285,155)
Allowance for other funds used during construction	10,003	11,486	14,497
Allowance for borrowed funds used during construction	6,284	7,224	8,171
Amortization of debt expense	(4,557)	(6,647)	(5,895)
Other, net	4,658	(792)	4,684
Total other income (expenses)	(298,655)	(285,274)	(263,698)
Income (loss) before income taxes	449,436	(111,665)	(450,594)
Provision for income taxes	181,609	121,418	111,827
Net income (loss)	\$ 267,827	\$ (233,083)	\$ (562,421)
Other comprehensive income, net of tax:			
Change in employee benefit plan funded status, net of tax of (\$7,567), \$6,381 and (\$41,007), respectively	(11,836)	9,981	(64,139)
Pension plan amortized to periodic benefit cost:			
Prior service cost, net of tax of \$50, \$29 and \$17, respectively	79	46	26
Actuarial loss, net of tax of \$2,793, \$3,832 and \$0, respectively	4,368	5,994	1
Foreign currency translation adjustment	620	1,553	244
Other comprehensive income	(6,769)	17,574	(63,868)
Comprehensive income (loss)	\$ 261,058	\$ (215,509)	\$ (626,289)
Income (loss) per common share:			
Basic	\$ 1.53	\$ (1.39)	\$ (3.52)
Diluted	\$ 1.53	\$ (1.39)	\$ (3.52)
Average common shares outstanding during the period:			
Basic	174,833	168,164	159,967
Diluted	175,124	168,164	159,967
Dividends per common share	\$ 0.86	\$ 0.82	\$ 0.40

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies

Consolidated Statements of Cash Flows

(In thousands, except per share data)

	Years Ended December 31,		
	2010	2009	2008
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income (loss)	\$ 267,827	\$ (233,083)	\$ (562,421)
Adjustments			
Depreciation and amortization	354,650	335,178	312,776
Impairment charge	0	450,000	750,000
Provision for deferred income taxes	157,602	140,821	95,643
Amortization of deferred investment tax credits	(1,567)	(1,433)	(1,338)
Provision for losses on utility accounts receivable	18,697	21,781	17,267
Allowance for other funds used during construction	(10,003)	(11,486)	(14,497)
Loss (gain) on sale of assets	71	(763)	(374)
Pension and non-pension post retirement benefits	89,342	105,133	50,309
Stock-based compensation expense	10,334	7,602	4,534
Other, net	(20,514)	(30,007)	(200)
Changes in assets and liabilities			
Receivables and unbilled utility revenues	(33,044)	(18,751)	(20,702)
Taxes receivable, including income taxes	17,920	(17,920)	23,111
Other current assets	5,149	(6,737)	(11,194)
Pension and non-pension post retirement benefit contributions	(137,257)	(127,446)	(105,053)
Accounts payable	6,487	52	2,978
Taxes accrued, including income taxes	39,577	(13,321)	13,460
Interest accrued	746	6,499	2,790
Other current liabilities	8,916	(9,963)	(4,920)
Net cash provided by operating activities	<u>774,933</u>	<u>596,156</u>	<u>552,169</u>
CASH FLOWS FROM INVESTING ACTIVITIES			
Capital expenditures	(765,636)	(785,265)	(1,008,806)
Acquisitions	(1,642)	(18,144)	(12,512)
Proceeds from sale of assets and securities	239	1,237	12,604
Removal costs from property, plant and equipment retirements, net	(43,695)	(29,900)	(24,793)
Net funds released	63,991	129,711	2,457
Other	0	(1,250)	(2,617)
Net cash used in investing activities	<u>(746,743)</u>	<u>(703,611)</u>	<u>(1,033,667)</u>
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from long-term debt	268,559	542,926	279,941
Repayment of long-term debt	(272,700)	(178,131)	(241,500)
Proceeds from issuance of common stock (net of 2009 expenses of \$7,824)	0	242,301	0
Net borrowings (repayments) under short-term debt agreements	93,029	(352,005)	258,684
Proceeds from issuances of employee stock plans and DRIP	6,711	2,089	836
Advances and contributions for construction, net of refunds of \$35,830 in 2010, \$27,481 in 2009 and \$57,580 in 2008	7,042	21,211	3,078
Change in cash overdraft position	17,173	(7,508)	(188)
Capital contributions	0	0	245,000
Debt issuance costs	(6,619)	(13,165)	(4,008)
Redemption of preferred stocks	(228)	(218)	(229)
Dividends paid	(150,301)	(137,331)	(64,055)
Net cash (used in) provided by financing activities	<u>(37,334)</u>	<u>120,169</u>	<u>477,559</u>
Net (decrease) increase in cash and cash equivalents	(9,144)	12,714	(3,939)
Cash and cash equivalents at beginning of period	22,256	9,542	13,481
Cash and cash equivalents at end of period	<u>\$ 13,112</u>	<u>\$ 22,256</u>	<u>\$ 9,542</u>
Cash paid during the year for:			
Interest, net of capitalized amount	\$ 329,417	\$ 303,958	\$ 294,508
Income taxes, net of refunds of \$37,790 in 2010, \$2,754 in 2009 and \$40,400 in 2008	\$ (30,108)	\$ 11,205	\$ (22,161)
Non-cash investing activity			
Capital expenditures acquired on account but unpaid as of year-end	\$ 112,313	\$ 59,219	\$ 72,657
Non-cash financing activity			
Advances and contributions	\$ 27,566	\$ 77,094	\$ 83,041
Long-term debt (See Note 11)	\$ 122,775	\$ 179,931	\$ —

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies

Consolidated Statements of Changes in Stockholders' Equity

(In thousands, except per share data)

	Common Stock		Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Treasury Stock		Preferred Stock of Subsidiary Companies Without Mandatory Redemption Requirements	Total Stockholders' Equity
	Shares	Par Value				Shares	At Cost		
Balance at December 31, 2007	160,000	\$ 1,600	\$ 5,637,947	\$ (1,079,118)	\$ (18,383)	0	\$ 0	\$ 4,568	\$ 4,546,614
Net loss	—	—	—	(562,421)	—	—	—	—	(562,421)
Equity investment by RWE	—	—	245,000	—	—	—	—	—	245,000
Contribution of common stock by RWE	—	—	1,933	—	—	(90)	(1,933)	—	—
Employee stock purchase plan (ESPP)	—	—	69	—	—	39	836	—	905
Stock-based compensation activity	—	—	3,304	—	—	51	1,090	—	4,394
Subsidiary preferred stock redemption	—	—	—	—	—	—	—	(11)	(11)
Other comprehensive income (loss), net of tax of (\$40,990)	—	—	—	—	(63,868)	—	—	—	(63,868)
Dividends	—	—	—	(64,055)	—	—	—	—	(64,055)
Balance at December 31, 2008	160,000	\$ 1,600	\$ 5,888,253	\$ (1,705,594)	\$ (82,251)	0	\$ (7)	\$ 4,557	\$ 4,106,558
Net loss	—	—	—	(233,083)	—	—	—	—	(233,083)
Common stock offering, net of expenses of \$7,824	14,500	145	242,156	—	—	—	—	—	242,301
Employee stock purchase plan (ESPP)	128	1	2,453	—	—	1	23	—	2,477
Stock-based compensation activity	2	—	7,215	(279)	—	(1)	(16)	—	6,920
Other comprehensive income (loss), net of tax of \$10,242	—	—	—	—	17,574	—	—	—	17,574
Dividends	—	—	—	(137,331)	—	—	—	—	(137,331)
Balance at December 31, 2009	174,630	\$ 1,746	\$ 6,140,077	\$ (2,076,287)	\$ (64,677)	0	\$ 0	\$ 4,557	\$ 4,005,416
Net income	—	—	—	267,827	—	—	—	—	267,827
Direct stock reinvestment and purchase plan (DRIP), net of expense of \$96	63	1	1,328	—	—	—	—	—	1,329
Employee stock purchase plan (ESPP)	112	1	2,502	—	—	7	127	—	2,630
Stock-based compensation activity	191	2	12,768	(474)	—	(8)	(146)	—	12,150
Subsidiary preferred stock redemption	—	—	—	—	—	—	—	(10)	(10)
Other comprehensive income (loss), net of tax of (\$4,724)	—	—	—	—	(6,769)	—	—	—	(6,769)
Dividends	—	—	—	(150,301)	—	—	—	—	(150,301)
Balance at December 31, 2010	174,996	\$ 1,750	\$ 6,156,675	\$ (1,959,235)	\$ (71,446)	(1)	\$ (19)	\$ 4,547	\$ 4,132,272

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies

Notes to Consolidated Financial Statements

(In thousands, except per share data)

Note 1: Organization and Operation

American Water Works Company, Inc. ("AWW") and its subsidiaries (collectively referred to herein as the "Company") is the holding company for regulated and market based subsidiaries throughout the United States of America and two Canadian provinces. The regulated subsidiaries provide water and wastewater services as public utilities. These regulated subsidiaries are operationally segregated into 20 U.S. states in which the Company operates regulated utilities. The market based subsidiaries include various lines of business including Homeowner Services, which provides water and sewer line protection plans for homeowners, and the Operations and Maintenance contracts group, which conducts operation and maintenance of water and wastewater facilities for the U.S. Military, municipalities, the food and beverage industry and other customers.

Note 2: Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of AWW and its subsidiaries. Intercompany balances and transactions between subsidiaries have been eliminated. The Company uses the equity method to report its investments in two joint venture investments in each of which the Company holds a 50% voting interest and cannot exercise control over the operations and policies of the investments. Under the equity method, the Company records its interests as an investment and its percentage share of earnings as earnings or losses of investee.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates. The Company considers benefit plan assumptions; the carrying values of goodwill and other long-lived assets, including regulatory assets; revenue recognition; and accounting for income taxes to be its critical accounting estimates. The Company's significant estimates that are particularly sensitive to change in the near term are amounts reported for pension and other postemployment benefits, contingency-related obligations and goodwill.

Regulation

The Company's regulated utilities are subject to economic regulation by the public utility commissions and the local governments of the states in which they operate (the "Regulators"). These Regulators have allowed recovery of costs and credits which the Company has recorded as regulatory assets and liabilities. Accounting for future recovery of costs and credits as regulatory assets and liabilities is in accordance with authoritative guidance applicable to those companies whose rates are established by or are subject to approval by an independent third-party regulator. Regulated utilities defer costs and credits on the balance sheet as regulatory assets and liabilities when it is probable that those costs and credits will be recognized in the rate making process in a period different from the period in which they would have been reflected in operations by a market based company. These deferred regulatory assets and liabilities are then reflected in the statement of operations in the period in which the costs and credits are reflected in the rates charged for service. (See Note 7)

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Property, Plant and Equipment

Property, plant and equipment consist primarily of utility plant. Additions to utility plant and replacements of retirement units of property are capitalized. Costs include material, direct labor and such indirect items as engineering and supervision, payroll taxes and benefits, transportation and an allowance for funds used during construction. The costs incurred to acquire and internally develop computer software for internal use are capitalized as a unit of property. The carrying value of these costs amounted to \$57,294 and \$58,655 at December 31, 2010 and 2009, respectively. The cost of repairs; maintenance, including planned major maintenance activities; and minor replacements of property is charged to maintenance expense as incurred.

When units of property are replaced, retired or abandoned, the recorded value thereof is credited to the asset account and charged to accumulated depreciation. To the extent the Company recovers cost of removal or other retirement costs through rates after the retirement costs are incurred, a regulatory asset is recorded. In some cases, the Company recovers retirement costs through rates during the life of the associated asset and before the costs are incurred. These amounts result in a regulatory liability being reported based on the amounts previously recovered through customer rates, until the costs to retire those assets are incurred.

The cost of property, plant and equipment is depreciated using the straight-line average remaining life method.

Nonutility property consists primarily of buildings and equipment utilized by the Company for internal operations. This property is stated at cost, net of accumulated depreciation calculated using the straight-line method over the estimated useful lives of the assets, ranging from three to 50 years.

Cash and Cash Equivalents

Substantially all cash is invested in interest-bearing accounts. All highly liquid investments with a maturity of three months or less when purchased are considered to be cash equivalents.

The Company had book overdrafts for certain of its disbursement accounts of \$51,675 and \$34,502 at December 31, 2010 and 2009, respectively. A book overdraft represents transactions that have not cleared the bank accounts at the end of the period. The Company transfers cash on an as-needed basis to fund these items as they clear the bank. The balance of the book overdraft is reported as short-term debt and the change in the book overdraft balance is reported as cash flows from financing activities.

Restricted Funds

Restricted funds primarily represent proceeds from financings for the construction and capital improvement of facilities and deposits for future services under operation and maintenance projects. The proceeds of these financings are held in escrow until the designated expenditures are incurred. Restricted funds expected to be released within 12 months subsequent to year-end are classified as current.

Utility Customer Accounts Receivable

Regulated utility customer accounts receivable represent amounts billed to water and wastewater customers on a cycle basis. Credit is extended based on the guidelines of the applicable Regulators and generally, collateral is not required.

Allowance for Uncollectible Accounts

Allowances for uncollectible accounts are maintained for estimated probable losses resulting from the Company's inability to collect receivables from customers. Accounts that are outstanding longer than the payment terms are considered past due. A number of factors are considered in determining the allowance for uncollectible accounts, including the length of time receivables are past due and previous loss history. The Company writes off accounts when they become uncollectible. (See Note 5)

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Other Receivables, Net

Other receivables, net consists of market based trade accounts receivable and market based unbilled revenues, net of a reserve for doubtful accounts, and non-utility customer receivables of the regulated subsidiaries. In determining the reserve for uncollectible market based accounts, the Company considers the length of time the trade accounts receivable are past due and the customers' current ability to pay their obligations. Unbilled receivables are accrued when service has been provided but has not been billed to customers. (See Note 6)

Materials and Supplies

Materials and supplies are stated at the lower of cost or net realizable value. Cost is determined using the average cost method.

Goodwill

Goodwill is primarily associated with the acquisitions of American Water Works Company, Inc. in 2003 and E'town Corporation in 2001 (the "Acquisitions") and has been assigned to reporting units based on the fair values at the date of the Acquisitions. The Regulated Businesses segment is a single reporting unit. In the Market-Based Operations segment, the business is organized into seven reporting units for its market based services. Goodwill is reviewed annually, or more frequently if changes in circumstances indicate the carrying value may not be recoverable. Annual impairment reviews are performed in the fourth quarter of the calendar year, in conjunction with the timing of the completion of the Company's annual strategic business plan.

The Company considers the carrying value of goodwill to be one of its critical accounting estimates. The Company believes the assumptions and other considerations used to value goodwill to be appropriate. However, if experience differs from the assumptions and considerations used in its analysis, the resulting change could have a material adverse impact on the consolidated financial statements.

No impairment charge was recorded for the year ended December 31, 2010. For the years ended December 31, 2009 and 2008, the Company recorded impairment charges for goodwill of \$450,000 and \$750,000, respectively. (See Note 8)

Long-Lived Assets

Long-lived assets include land, buildings, equipment and long-term investments. Long-lived assets, other than investments and land, are depreciated over their estimated useful lives, and are reviewed for impairment whenever changes in circumstances indicate the carrying value of the asset may not be recoverable. Such circumstances would include items such as a significant decrease in the market value of a long-lived asset, a significant adverse change in the manner the asset is being used or planned to be used or in its physical condition, or a history of operating or cash flow losses associated with the use of the asset. In addition, changes in the expected useful life of these long-lived assets may also be an impairment indicator. When such events or changes occur, the Company estimates the fair value of the asset from future cash flows expected to result from the use and, if applicable, the eventual disposition of the assets and compares that to the carrying value of the asset. If the carrying value is greater than the fair value, an impairment loss is recorded.

The Company considers the carrying value of long-lived assets to be one of its critical accounting estimates. The Company believes the assumptions and other considerations used to evaluate the carrying value of long-lived assets to be appropriate. However, if actual experience differs from the assumptions and considerations used in its estimates, the resulting change could have a material adverse impact on the consolidated financial statements.

The key variables to determine value include assumptions regarding sales volume, rates, operating costs, labor and other benefit costs, capital additions, assumed discount rates and other economic factors. These

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variables require significant management judgment and include inherent uncertainties since they are forecasting future events. If such assets are considered impaired, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value.

The long-lived assets of the regulated utility subsidiaries are grouped on a separate entity basis for impairment testing as they are integrated state-wide operations that do not have the option to curtail service and generally have uniform tariffs. A regulatory asset is charged to earnings if and when future recovery in rates of that asset is no longer probable.

The Company holds other investments including investments in privately held companies and investments in joint ventures accounted for using the equity method. The Company's investments in privately held companies and joint ventures are classified as other long-term assets.

The fair values of long-term investments are dependent on the financial performance and solvency of the entities in which the Company invests, as well as volatility inherent in the external markets. If such assets are considered impaired, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value.

Advances and Contributions in Aid of Construction

Regulated utility subsidiaries may receive advances and contributions from customers, home builders and real estate developers to fund construction necessary to extend service to new areas. Advances for construction are refundable for limited periods of time as new customers begin to receive service or other contractual obligations are fulfilled. Included in other current liabilities at December 31, 2010 and 2009 in the accompanying Consolidated Balance Sheets are estimated refunds of \$25,234 and \$34,207, respectively. Those amounts represent expected refunds during the next 12-month period. Advances which are no longer refundable are reclassified to contributions in aid of construction. Contributions in aid of construction are permanent collections of plant assets or cash for a particular construction project. For ratemaking purposes, the amount of such contributions generally serves as a rate base reduction since the contributions represent non-investor supplied funds. Non-cash utility property has been received, primarily from developers, as advances or contributions of \$27,566, \$77,094 and \$83,041 for the years ended December 31, 2010, 2009 and 2008, respectively.

Generally, the Company depreciates utility plant funded by contributions and amortizes its contributions balance as a reduction to depreciation expense, producing a result which is functionally equivalent to reducing the original cost of the utility plant for the contributions. Certain of the Company's subsidiaries do not depreciate contributed property, based on regulatory guidelines. Amortization of contributions in aid of construction was \$23,480, \$20,227 and \$20,219 for the years ended December 31, 2010, 2009 and 2008, respectively.

Recognition of Revenues

Revenues of the regulated utility subsidiaries are recognized as water and wastewater services are provided and include amounts billed to customers on a cycle basis and unbilled amounts based on estimated usage from the date of the latest meter reading to the end of the accounting period.

The Company has agreements with the United States Government to operate and maintain water and wastewater systems at various military bases pursuant to 50-year contracts ("military agreements"). These contracts also include construction components that are accounted for separately from the operations and management components. The military agreements are subject to periodic price redetermination adjustments and modifications for changes in circumstance. Additionally, the Company has agreements ranging in length from three to 40 years with various industries and municipalities to operate and maintain water and wastewater systems ("O&M agreements"). Revenue from operations and management services are recognized as services are provided. (See Note 16)

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Construction Contracts

Revenues from construction projects are recognized over the contract term based on the estimated percentage of completion during the period compared to the total estimated services to be provided over the entire contract. Losses on contracts are recognized during the period in which the loss first becomes probable and estimable. Revenues recognized during the period in excess of billings on construction contracts are recorded as unbilled revenue. Billings in excess of revenues recognized on construction contracts are recorded as other current liabilities until the recognition criteria are met. Changes in contract performance and related estimated contract profitability may result in revisions to costs and revenues and are recognized in the period in which revisions are determined.

Income Taxes

The parent company and its subsidiaries participate in a consolidated federal income tax return for U.S. tax purposes. Members of the consolidated group are charged with the amount of federal income tax expense determined as if they filed separate returns.

Certain income and expense items are accounted for in different time periods for financial reporting than for income tax reporting purposes. The Company provides deferred income taxes on the difference between the tax basis of assets and liabilities and the amounts at which they are carried in the financial statements. These deferred income taxes are based on the enacted tax rates expected to be in effect when these temporary differences are projected to reverse. In addition, the regulated utility subsidiaries recognize regulatory assets and liabilities for the effect on revenues expected to be realized as the tax effects of temporary differences, previously flowed through to customers, reverse.

Investment tax credits have been deferred by the regulated utility subsidiaries and are being amortized to income over the average estimated service lives of the related assets.

The Company recognizes accrued interest and penalties related to tax positions as a component of income tax expense.

The Company accounts for sales tax collected from customers and remitted to taxing authorities on a net basis.

Allowance for Funds Used During Construction ("AFUDC")

AFUDC is a non-cash credit to income with a corresponding charge to utility plant which represents the cost of borrowed funds or a return on equity funds devoted to plant under construction. The regulated utility subsidiaries record AFUDC to the extent permitted by the Regulators.

Environmental Costs

The Company's water and wastewater operations are subject to federal, state, local and foreign requirements relating to environmental protection, and as such, the Company periodically becomes subject to environmental claims in the normal course of business. Environmental expenditures that relate to current operations or provide a future benefit are expensed or capitalized as appropriate. Remediation costs that relate to an existing condition caused by past operations are accrued, on an undiscounted basis, when it is probable that these costs will be incurred and can be reasonably estimated. Remediation costs accrued amounted to \$6,630 and \$7,947 at December 31, 2010 and 2009, respectively. At December 31, 2010, \$6,600 of the accrual relates to a conservation agreement entered into by a subsidiary of the Company with the National Oceanic and Atmospheric Administration ("NOAA") requiring the Company to, among other provisions, implement certain measures to protect the steelhead trout and its habitat in the Carmel River watershed in the state of California. The Company

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paid and expensed \$3,500 related to this agreement during 2009, and has agreed to pay \$1,100 annually from 2010 to 2016. The Company pursues recovery of incurred costs through all appropriate means, including regulatory recovery through customer rates. The Company's regulatory assets at December 31, 2010 and 2009 include \$10,642 and \$7,700, respectively, related to the NOAA agreement, including an additional \$3,500 granted in 2010 for recovery of the 2009 payment.

Derivative Financial Instruments

The Company uses derivative financial instruments for purposes of hedging exposures to fluctuations in interest rates. These derivative contracts are entered into for periods consistent with the related underlying exposures and do not constitute positions independent of those exposures. The Company does not enter into derivative contracts for speculative purposes and does not use leveraged instruments.

All derivatives are recognized on the balance sheet at fair value. On the date the derivative contract is entered into, the Company may designate the derivative as a hedge of the fair value of a recognized asset or liability (fair-value hedge) or a hedge of a forecasted transaction or of the variability of cash flows to be received or paid related to a recognized asset or liability (cash-flow hedge).

Changes in the fair value of a fair-value hedge, along with the gain or loss on the underlying hedged item, are recorded in current-period earnings. The effective portion of gains and losses on cash-flow hedges are recorded in other comprehensive income (loss), until earnings are affected by the variability of cash flows. Any ineffective portion of designated hedges is recognized in current-period earnings.

Cash flows from derivative contracts are included in net cash provided by operating activities.

New Accounting Standards

The following recently announced accounting standards have been adopted by the Company and have been included in the consolidated results of operations, financial position or footnotes of the accompanying Consolidated Financial Statements:

Consolidation of Variable Interest Entities

In June 2009, the Financial Accounting Standards Board ("FASB") issued authoritative guidance that replaces the quantitative-based risk and rewards calculation for determining which reporting entity has a controlling financial interest in a variable interest entity with a qualitative approach. This revised guidance also requires additional disclosures about a reporting entity's involvement in variable interest entities. This guidance is effective for the Company beginning January 1, 2010. These changes did not have an impact on the Company's results of operations, financial position or cash flows; however, these changes could impact the accounting for the Company's interests in a variable interest entity in the future.

Transfers of Financial Assets

In June 2009, the FASB issued authoritative guidance that amends current guidance for accounting for the transfers of financial assets. Key provisions include (i) the removal of the concept of qualifying special purpose entities, (ii) the introduction of the concept of a participating interest, in which a portion of a financial asset has been transferred and (iii) the requirement that to qualify for sale accounting, the transferor must evaluate whether it maintains effective control over transferred financial assets either directly or indirectly. Further, the amendments require enhanced disclosures about the risks that a transferor continues to be exposed to because of its continuing involvement in transferred financial assets. This guidance is effective for the Company beginning January 1, 2010, and is required to be applied prospectively. The adoption of this update did not have an impact on the Company's results of operations, financial position or cash flows.

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Fair Value Measurements

In January 2010, the FASB issued authoritative guidance that requires new disclosures of (i) the amounts of significant transfers into and out of Level 1 and Level 2 of the fair value hierarchy and the reasons for those transfers and (ii) information in the reconciliation of recurring Level 3 measurements (those using significant unobservable inputs) about purchases, sales, issuances, and settlements on a gross basis. This update also clarifies existing fair value disclosures about the level of disaggregation and about inputs and valuation techniques used to measure fair value. This guidance is effective for interim and annual periods beginning after December 15, 2009, except for the requirement to disclose information about purchases, sales, issuances and settlements in the reconciliation of Level 3 measurements, which does not become effective until interim and annual periods beginning after December 15, 2010. As this guidance clarifies and provides for additional disclosure requirements only, the adoption of this guidance did not have an impact on the Company's results of operations, financial position or cash flows. In addition, the Company does not expect the adoption of the requirement to disclose additional information in the reconciliation of Level 3 measurements to have a significant impact on the Company's results of operations, financial position or cash flows.

The following recently issued accounting standards are not yet reflected or required to be adopted by the Company or included in the consolidated results of operations or financial position of the Company:

Revenue arrangements with Multiple Deliverables

In October 2009, the FASB issued authoritative guidance that amends existing guidance for identifying separate deliverables in a revenue-generating transaction where multiple deliverables exist, and provides guidance for allocating and recognizing revenue based on those separate deliverables. The guidance is expected to result in more multiple-deliverable arrangements being separable than under current guidance. This guidance is effective for the Company beginning on January 1, 2011 and is required to be applied prospectively to new or significantly modified revenue arrangements. The Company is currently assessing the impact that the guidance may have on the Company's results of operations, financial position or cash flows.

Business Combinations

In December 2010, the FASB clarified the requirements for reporting of pro forma revenue and earnings disclosures for business combinations. The accounting update specifies that if a public entity presents comparative financial statements, the entity should disclose revenue and earnings of the combined entity as though the business combination(s) that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period only. The amendments also expand the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro forma revenue and earnings. The amendments are effective prospectively for business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2010. As this guidance clarifies and provides for additional disclosure requirements only, the adoption of this guidance is not expected to have an impact on the Company's results of operations, financial position or cash flows.

Intangibles – Goodwill

In December 2010, the FASB issued authoritative guidance that modifies step 1 of the goodwill impairment test for reporting units with zero or negative carrying amounts. The update requires that for those reporting units, an entity is required to perform step 2 of the goodwill impairment test if it is more likely than not that a goodwill impairment exists. In determining whether it is more likely than not that a goodwill impairment exists, an entity should consider whether there are any adverse qualitative factors indicating that impairment may exist. The qualitative factors are consistent with existing authoritative guidance, which requires that goodwill of a reporting unit be tested for impairment between annual tests if an event occurs or circumstances change that would more

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likely than not reduce the fair value of a reporting unit below its carrying amount. This guidance is effective for fiscal years, and interim periods within those years, beginning after December 15, 2010. The Company does not expect the adoption of this update to have a significant impact on the Company's results of operations, financial position or cash flows.

Reclassifications

The Company disclosed in the property, plant and equipment policy note that costs recovered for cost of removal or other retirement obligations are classified as a regulatory asset or regulatory liability depending on the timing of the cost recovered through rates. In either case, the amortization associated with the regulatory asset and regulatory liability for cost of removal had been included within the Company's Consolidated Statements of Operations and Comprehensive Income (Loss) as a component of operations and maintenance expense. The Company has also presented this as amortization of removal costs net of salvage value within the Consolidated Statements of Cash Flows. Beginning with the 2010 year-end consolidated financial statements, the Company is presenting the amortization of removal costs net of salvage value within the depreciation and amortization expense of the Consolidated Statements of Operations and Comprehensive Income (Loss). Based on the manner in which the Company evaluates its results and consistent with the Company's peers, the amortization associated with removal costs is included in depreciation and amortization. The Company has presented this reclassification in all periods within these consolidated financial statements. The following tables set forth the impacts of this reclassification for the prior periods presented in the Company's Consolidated Statements of Operations and Comprehensive Income (Loss).

	2009 Previously Reported	Reclassification	2009 Adjusted Presentation
Operating expenses			
Operations and maintenance	\$ 1,324,355	\$ (40,938)	\$ 1,283,417
Depreciation and amortization	\$ 294,240	\$ 40,938	\$ 335,178
	2008 Previously Reported	Reclassification	2008 Adjusted Presentation
Operating expenses			
Operations and maintenance	\$ 1,303,798	\$ (41,515)	\$ 1,262,283
Depreciation and amortization	\$ 271,261	\$ 41,515	\$ 312,776

The reclassification was made to conform with the Company's current presentation of this expense and had no impact to the total captions presented within the Consolidated Statements of Operations and Comprehensive Income (Loss).

Note 3: Acquisitions and Divestitures

Acquisitions

The Company announced it has entered into a purchase agreement to purchase assets of certain water and wastewater systems in Missouri. The purchase price is approximately \$3,000, is subject to regulatory approval, and is expected to close in 2011.

During 2010, the Company closed on six acquisitions of regulated water and wastewater systems for an aggregate purchase price of \$1,642. The purchase price for each acquisition was allocated to the net tangible and intangible assets based upon their estimated fair values at the acquisition date. Assets acquired consisted of plant and equipment of \$3,064. Liabilities assumed totaled \$1,422, including contributions in aid of construction of \$1,109 and regulatory liabilities of \$313.

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During 2009, the Company closed on seven acquisitions (six regulated water and wastewater systems, and one in its Market-Based Operations segment) for an aggregate purchase price of \$18,144. The purchase price for each acquisition was allocated to the net tangible and intangible assets based upon their estimated fair values at the acquisition date. Assets acquired totaled \$29,462, including plant and equipment of \$17,843, current assets of \$5,857, goodwill of \$606, and long-lived assets of \$5,156. Liabilities assumed totaled \$11,318, including debt of \$3,990, current liabilities of \$5,732, long-term liabilities of \$970, and contributions in aid of construction of \$626.

Divestitures

On January 24, 2011, the Company announced that it had entered into a Stock Purchase Agreement (the "Sale Agreement") to sell all the stock of the Company's Arizona and New Mexico subsidiaries for \$470,000 in cash, subject to certain closing adjustments.

These two subsidiaries are included in the Regulated Businesses segment. The total assets, liabilities and revenues for these two subsidiaries were \$769,359, \$596,742 and \$97,547, respectively, as of and for the year ended December 31, 2010.

Closing of the transaction is subject to customary closing conditions, including approval by the Arizona and New Mexico public utility commissions. The Company plans to use the proceeds from the sale to reduce both equity and debt financing.

Based on a preliminary assessment of the sale price and a review of the carrying value of the subsidiary companies, there is no anticipated impairment expected to be recorded as a result of the Sale Agreement.

The Company also announced prior to December 31, 2010 that it had reached an agreement to sell all the assets and certain liabilities of its Texas subsidiary. The assets and revenues of this subsidiary company are included in the Regulated Businesses segment. The sales price and net carrying value are approximately \$6,100. Revenues were \$3,321 for the year ended December 31, 2010. The Company has not classified the assets and liabilities as held for sale as it is immaterial to the Consolidated Balance Sheets presented and the segment information presented in Note 21. This sale is subject to approval by the Texas Commission on Environmental Quality and is subject to certain closing adjustments.

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Note 4: Utility Plant

The components of utility plant by category at December 31 are as follows:

	Range of Remaining Useful Lives	2010	2009
Water plant			
Land and other non-depreciable assets		\$ 156,976	\$ 144,295
Sources of supply	15 to 127 Years	598,802	564,886
Treatment and pumping facilities	3 to 101 Years	2,766,548	2,675,718
Transmission and distribution facilities	9 to 127 Years	6,682,273	6,290,578
Services, meters and fire hydrants	4 to 96 Years	2,512,234	2,363,394
General structures and equipment	3 to 112 Years	692,717	645,727
Wastewater plant			
Construction work in progress	4 to 86 Years	735,917	702,725
		315,564	304,599
		14,461,031	13,691,922
Less accumulated depreciation			
		3,402,466	3,168,078
		<u>\$ 11,058,565</u>	<u>\$ 10,523,844</u>

Utility plant depreciation expense amounted to \$275,844 in 2010, \$262,825 in 2009 and \$267,763 in 2008. The Company's regulated utility subsidiaries record depreciation in conformity with amounts approved by state regulators after regulatory review of information the Company submits to support its estimates of the assets' remaining useful lives.

The provision for depreciation expressed as a percentage of the aggregate average depreciable asset balances was 2.67% in 2010, 2.68% in 2009 and 2.93% in 2008.

Note 5: Allowance for Uncollectible Accounts

The following table summarizes the changes in the Company's allowances for uncollectible accounts:

	2010	2009	2008
Balance at January 1	\$ (19,035)	\$ (18,644)	\$ (20,923)
Amounts charged to expense	(18,697)	(21,781)	(17,267)
Amounts written off	23,452	25,079	22,583
Recoveries of amounts written off	(3,763)	(3,689)	(3,037)
Balance at December 31	<u>\$ (18,043)</u>	<u>\$ (19,035)</u>	<u>\$ (18,644)</u>

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Note 6: Other Receivables, Net

Components of the Company's other receivables, net at December 31 are as follows:

	2010	2009
Market based trade accounts receivable	\$ 38,290	\$ 33,945
Allowance for doubtful accounts—market based trade accounts receivable	(3,510)	(3,837)
Market based unbilled revenue	14,976	15,678
Other	24,553	29,300
	<u>\$ 74,309</u>	<u>\$ 75,086</u>

The following table summarizes the changes in the Company's market based allowances for uncollectible accounts:

	2010	2009	2008
Balance at January 1	\$ (3,837)	\$ (5,221)	\$ (5,567)
Amounts charged to expense	(429)	(259)	(1,587)
Amounts written off	777	1,805	1,942
Recoveries of amounts written off	(21)	(162)	(9)
Balance at December 31	<u>\$ (3,510)</u>	<u>\$ (3,837)</u>	<u>\$ (5,221)</u>

Note 7: Regulatory Assets and Liabilities

The regulatory assets represent costs that are expected to be fully recovered from customers in future rates. Except for income taxes, regulatory assets are excluded from the Company's rate base and generally do not earn a return. The components of regulatory assets at December 31 are as follows:

	2010	2009
Income taxes recoverable through rates	\$ 252,290	\$ 233,806
Debt and preferred stock expense	77,138	75,693
Deferred pension expense	215,008	209,288
Deferred other postretirement benefit expense	126,894	141,830
Deferred security costs	7,479	10,121
Deferred business services project expense	10,670	12,496
Deferred tank painting costs	28,420	24,705
Deferred rate case expense	11,409	10,919
Purchase premium recoverable through rates	60,647	61,101
Environmental remediation recoverable through rates	10,642	7,700
Coastal water project costs	27,084	21,056
San Clemente Dam project costs	18,723	16,392
Removal costs recoverable through rates	59,621	46,090
Other	109,982	80,823
	<u>\$ 1,016,007</u>	<u>\$ 952,020</u>

The Company has recorded a regulatory asset for the additional revenues expected to be realized as the tax effects of temporary differences previously flowed through to customers reverse. These temporary differences are primarily related to the difference between book and tax depreciation on property placed in service before the adoption by the regulatory authorities of full normalization for rate making purposes. Full normalization requires no flow through of tax benefits to customers. The regulatory asset for income taxes recoverable through rates is

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net of the reduction expected in future revenues as deferred taxes previously provided, attributable to the difference between the state and federal income tax rates under prior law and the current statutory rates, reverse over the average remaining service lives of the related assets. The increase in 2010 included \$16,979 due to the change in the Company's future tax deductibility of its Medicare Part D subsidy. (See Note 14)

Debt expense is amortized over the lives of the respective issues. Call premiums on the redemption of long-term debt, as well as unamortized debt expense, are deferred and amortized to the extent they will be recovered through future service rates. Expenses of preferred stock issues without sinking fund provisions are amortized over 30 years from date of issue; expenses of issues with sinking fund provisions are charged to operations as shares are retired.

Pension expense in excess of the amount contributed to the pension plans is deferred by certain subsidiaries. These costs will be recovered in future service rates as contributions are made to the pension plan. The Company also has regulatory assets of \$184,937 and \$166,441 at December 31, 2010 and 2009, respectively, which is the portion of the underfunded status that is probable of recovery through rates in future periods.

Postretirement benefit expense in excess of the amount recovered in rates through 1997 has been deferred by certain subsidiaries. These costs are recognized in the rates charged for water service and will be fully recovered over a 20-year period ending in 2012 as authorized by the regulatory authorities. The Company has regulatory assets of \$121,665 and \$134,180 at December 31, 2010 and 2009, respectively, which is the portion of the underfunded status that is probable of recovery through rates in future periods.

The cost of additional security measures that were implemented to protect facilities after the terrorist attacks on September 11, 2001 has been deferred by certain subsidiaries. These costs are recognized in the rates charged for water service by certain subsidiaries. These costs are being recovered over periods ranging from five to ten years.

Business services project expenses consist of reengineering and start-up activities for consolidated customer and shared administrative service centers that began operations in 2001. These costs are recognized in the rates charged for water service by certain subsidiaries.

Tank painting costs are generally deferred and amortized to current operations on a straight-line basis over periods ranging from 5 to 15 years, as authorized by the regulatory authorities in their determination of rates charged for service.

The Company amortizes rate case expenditures over regulatory approved amortization periods, typically three years. Rate case proceeding expenditures probable of future recovery are deferred.

Purchase premium recoverable through rates is primarily the recovery of the acquisition premiums related to an asset acquisition by the Company's California subsidiary during 2002, and acquisitions in 2007 by the Company's New Jersey subsidiary. As authorized for recovery by the California and New Jersey Regulators, these costs are being amortized to operations through November 2048.

Environmental remediation recoverable through rates is the recovery of costs incurred by the Company's California subsidiary under a settlement agreement entered into with NOAA to improve habitat conditions in the Carmel River Watershed.

Coastal water project costs include all preliminary costs associated with the studying, testing and design of alternatives to help solve water supply shortages in Monterey, California. Coastal water project costs incurred through December 31, 2008 have been reviewed and approved for recovery through a surcharge that went into effect January 1, 2007. Costs deferred during 2010 and 2009 totaled \$7,677 and \$6,542, respectively. The Company believes it is probable that the costs incurred since the last rate review will also be recoverable.

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San Clemente Dam project costs include deferred costs for the Company's California subsidiary to investigate alternatives to strengthen or remove the San Clemente Dam due to potential earthquake or flood safety concerns. These costs are not yet in rates; however, the Company believes it is probable that the costs incurred will be recoverable.

Other regulatory assets include certain deferred employee benefit costs, deferred treatment facility costs, as well as various regulatory balancing accounts.

The components of regulatory liabilities at December 31 are as follows:

	2010	2009
Removal costs recovered through rates	\$ 264,789	\$ 251,837
Deferred income taxes	0	33,103
Other	38,954	37,341
	<u>\$ 303,743</u>	<u>\$ 322,281</u>

Removal costs recovered through rates are retirement costs recovered during the life of the associated assets. In December 2008, the Company's subsidiary in New Jersey, at the direction of the New Jersey Regulator, began to amortize \$48,000 of the total balance into operations via straight line amortization through November 2048.

Deferred income taxes represent the income tax effect of the adjustment to record the full accumulated postretirement benefit obligation. The elimination of the regulatory liability in 2010 was concurrent with the change in the future tax deductibility of the Company's Medicare Part D subsidy (see Note 14), which eliminated any excess deferred tax assets resulting from that subsidy's portion of the full accumulated postretirement benefit obligation.

Other regulatory liabilities include legal settlement proceeds, deferred gains, future customer refunds, and various regulatory balancing accounts.

Note 8: Goodwill

The Company's annual impairment reviews are performed as of November 30 of each year, in conjunction with the timing of the completion of the Company's annual strategic business plan. At November 30, 2010, the Company's goodwill was \$1,250,692. The Company also undertakes interim reviews when the Company determines that a triggering event that would more likely than not reduce the fair value of a reporting unit below its carrying value has occurred.

The Company uses a two-step impairment test to identify potential goodwill impairment and measure the amount of a goodwill impairment loss to be recognized (if any). The step 1 calculation used to identify potential impairment compares the calculated fair value for each of the Company's reporting units to their respective net carrying values (book values), including goodwill, on the measurement date. If the fair value of any reporting unit is less than such reporting unit's carrying value, then step 2 is performed to measure the amount of the impairment loss (if any) for such reporting unit.

The step 2 calculation of the impairment test compares, by reporting unit, the implied fair value of the goodwill to the carrying value of goodwill. The implied fair value of goodwill is equal to the excess of the fair value of each reporting unit above the fair value of such reporting unit's identified assets and liabilities. If the carrying value of goodwill exceeds the implied fair value of goodwill for any reporting unit, an impairment loss is recognized in an amount equal to the excess (not to exceed the carrying value of goodwill) for that reporting unit.

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The determination of the fair value of each reporting unit and the fair value of each reporting unit's assets and liabilities is performed as of the measurement date using observable market data before and after the measurement date (if that subsequent information is relevant to the fair value on the measurement date).

For the November 30, 2010 impairment test, the estimated fair value of the Regulated reporting unit for step 1 was based on a combination of the following valuation techniques:

- observable trading prices of comparable equity securities of publicly-traded water utilities considered by us to be the Company's peers; and
- discounted cash flow models developed from the Company's internal forecasts.

The first valuation technique applies average peer multiples to the Regulated reporting unit's historic and forecasted cash flows. The peer multiples are calculated using the average trading prices of comparable equity securities of publicly-traded water utilities, their published cash flows and forecasts of market price and cash flows for those peers.

The second valuation technique forecasts each reporting unit's three-year cash flows using an estimated long-term growth rate and discounts these cash flows at their respective estimated weighted average cost of capital.

Because of the unique nature, small size and lack of historical earnings of most of the Market-Based reporting units, a market approach historically could not be reasonably applied. As such, the estimated fair values of the Market-Based reporting units were determined entirely on the basis of discounted cash flow models. For the November 30, 2010 impairment test a market approach was introduced to the Market-Based reporting units as the larger Market-Based reporting units have begun to mature.

The Company has completed its November 30, 2010 annual impairment review. Based on this review the Company's goodwill balance was not impaired. The Company's fair value calculated in its 2010 impairment test period was greater than the aggregate carrying value of its reporting units.

However, there can be no assurances that the Company will not be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to the Company's performance. These market events could include a decline over a period of time of the Company's stock price, a decline over a period of time in valuation multiples of comparable water utilities, the lack of an increase in the Company's market price consistent with its peer companies, or decreases in control premiums. A decline in the forecasted results in the Company's business plan, such as changes in rate case results or capital investment budgets or changes in the Company's interest rates, could also result in an impairment charge.

The Company also made certain assumptions, which it believes to be appropriate, that support the fair value of its reporting units. The Company considered, in addition to the listed trading price of the Company's shares, the applicability of a control premium to the Company's shares and certain other factors the Company deemed appropriate. As a result, the Company concluded that the Company's fair value exceeds what the Company might otherwise have concluded had it relied on market price alone.

The difference between the Company's calculated market capitalization (which approximates carrying value) and the aggregate fair value of reporting units resulted from an estimated control premium. The estimated control premium represents the incremental premium a buyer is willing to pay to acquire a controlling, majority interest in the Company. In estimating the control premium, management principally considered the current market conditions and historical premiums paid in utility acquisitions observed in the marketplace.

No impairment charge was recorded for the year ended December 31, 2010. For the years ended December 31, 2009 and 2008, the Company recorded impairment charges for goodwill in the amount of \$450,000 and \$750,000, respectively.

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The Company's calculated market capitalization at March 31, 2009 was \$1,186,000 below the aggregated carrying value of its reporting units. During the first quarter of 2009, the Company's market price experienced a high degree of volatility and, as of March 31, 2009, had a sustained period for which it was below historical averages and 10% below the market price employed in the Company's 2008 annual goodwill impairment test. Having considered both qualitative and quantitative factors, management concluded that this sustained decline in market value below the market value which existed at the 2008 annual impairment test was an interim triggering event. An interim impairment test was performed and \$450,000 was recognized as a goodwill impairment charge, primarily in the Regulated reporting unit, for the three months ended March 31, 2009.

As of March 31, 2008, in light of the initial public offering price and trading levels in the Company's common stock subsequent to the date of the initial public offering, the Company performed an interim impairment test and, on May 9, 2008, management concluded that the carrying value of the Company's goodwill was impaired. The Company believed that the initial public offering price was indicative of the value of the Company at March 31, 2008, and accordingly, based on those factors recorded an impairment charge to the goodwill of its Regulated reporting unit in the amount of \$750,000 as of March 31, 2008. The impairment charge was primarily attributed to the market price of the Company's common stock (both the initial public offering price and the price during subsequent trading) being less than the estimate of the initial public offering price used during the 2007 annual test. Also contributing to the impairment was a decline in the fair value of the Company's debt (due to increased market interest rates).

The change in the Company's goodwill assets, as allocated between the reporting units is as follows:

	Regulated Unit		Market Based Units		Consolidated		Total Net
	Cost	Accumulated Impairment	Cost	Accumulated Impairment	Cost	Accumulated Impairment	
Balance at January 1, 2009	\$ 3,565,215	\$ (1,995,380)	\$ 235,549	\$ (105,867)	\$ 3,800,764	\$ (2,101,247)	\$ 1,699,517
Goodwill from acquisitions	440	—	166	—	606	—	606
Impairment losses	—	(448,248)	—	(1,752)	—	(450,000)	(450,000)
Reclassifications and other activity	258	—	—	—	258	—	258
Balance at December 31, 2009	\$ 3,565,913	\$ (2,443,628)	\$ 235,715	\$ (107,619)	\$ 3,801,628	\$ (2,551,247)	\$ 1,250,381
Reclassifications and other activity	36	—	275	—	311	—	311
Balance at December 31, 2010	\$ 3,565,949	\$ (2,443,628)	\$ 235,990	\$ (107,619)	\$ 3,801,939	\$ (2,551,247)	\$ 1,250,692

Note 9: Stockholders' Equity

Common Stock

On March 23, 2010, the Company filed a Form S-3 Registration Statement with the SEC to register 5,000 shares of the Company's common stock issuable under American Water Stock Direct, a dividend reinvestment and direct stock purchase plan (the "DRIP"). Under the DRIP, stockholders may reinvest cash dividends and purchase additional Company common stock, up to certain limits, through a transfer agent without commission fees. The Company's transfer agent may buy newly issued shares directly from the Company or shares held in the Company's treasury. The transfer agent may also buy shares in the public markets or in privately negotiated transactions. Purchases generally will be made and credited to DRIP accounts once each week. As of December 31, 2010, there remained 4,937 shares available for issuance under the DRIP. The Company issued 63 shares of common stock with proceeds of \$1,425 during 2010 under the DRIP.

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During 2009, RWE Aktiengesellschaft ("RWE") completed the divestiture of its investment in the Company that began with the April 28, 2008 initial public offering ("IPO") of the Company's stock. In April and May 2008, RWE sold 63,173 shares of common stock, including an underwriters' option of 5,173 shares, at an IPO price of \$21.50. The Company did not receive any proceeds from the sale of shares. Prior to the IPO, the Company was an indirect wholly-owned subsidiary of RWE. After the IPO and exercise of the underwriters' over-allotment option, RWE owned approximately 60% of the Company's common shares.

Pursuant to a public offering in June 2009, the Company completed the sale of 14,500 shares of common stock at \$17.25 per share. The proceeds from the offering, net of underwriters' discounts and expenses payable by the Company, were \$242,301. The Company used the proceeds to repay short-term debt.

RWE completed the divestiture of its investment in the Company in 2009 through a June 2009 sale of 15,400 shares, including an underwriters' option of 3,900 shares, at a price per share of \$17.25; an August 2009 sale of 40,250 shares, including underwriters' options of 5,250 shares, at a price of \$19.25; and a November 2009 sale of 41,087 shares, including an underwriters' option of 3,735 shares, at a price of \$21.63. The Company did not receive any proceeds from these sales by RWE of the Company's shares.

Effective the first quarter of 2008, the Company's Board of Directors' authorized 50,000 shares of par value \$0.01 per share preferred stock. As of December 31, 2010 there were no shares outstanding.

In September of 2008, the Company made a cash dividend payment of \$0.20 per share to all common shareholders of record as of August 15, 2008, amounting to \$31,992. In December 2008, the Company made a cash dividend payment of \$0.20 per share to all common shareholders of record as of November 18, 2008, amounting to \$31,997.

In March 2009, the Company made a cash dividend payment of \$0.20 per share to all common shareholders of record as of February 18, 2009, amounting to \$32,000. In June 2009, the Company made a cash dividend payment of \$0.20 per share to all common shareholders of record as of May 18, 2009, amounting to \$32,006. In September 2009, the Company made a cash dividend payment of \$0.21 per share to all common shareholders of record as of August 18, 2009, amounting to \$36,658. In December 2009, the Company made a cash dividend payment of \$0.21 per share to all common shareholders of record as of November 18, 2009, amounting to \$36,667.

In March 2010, the Company made a cash dividend payment of \$0.21 per share to all common shareholders of record as of February 18, 2010, amounting to \$36,679. In June 2010, the Company made a cash dividend payment of \$0.21 per share to all common shareholders of record as of May 18, 2010, amounting to \$36,689. In September 2010, the Company made a cash dividend payment of \$0.22 per share to all common shareholders of record as of August 18, 2010, amounting to \$38,457. In December 2010, the Company made a cash dividend payment of \$0.22 per share to all common shareholders of record as of November 18, 2010, amounting to \$38,476.

On January 28, 2011, the Company's Board of Directors declared a quarterly cash dividend payment of \$0.22 per share payable on March 1, 2011 to all shareholders of record as of February 18, 2011.

Accumulated Other Comprehensive Loss

The following table presents accumulated other comprehensive loss:

	2010	2009
Employee benefit plans funded status adjustments	\$ (75,639)	\$ (68,250)
Foreign currency translation	4,193	3,573
Balance at December 31	<u>\$ (71,446)</u>	<u>\$ (64,677)</u>

[Table of Contents](#)**Stock Based Compensation**

The Company has granted stock option and restricted stock unit awards to non-employee directors, officers and other key employees of the Company pursuant to the terms of its 2007 Omnibus Equity Compensation Plan (the "Plan"). The total aggregate number of shares of common stock that may be issued under the Plan was increased to 15,500 from 6,000 in May of 2009. As of December 31, 2010, a total of 11,801 shares are available for grant under the Plan. Shares issued under the Plan may be authorized but unissued shares of Company stock or reacquired shares of Company stock, including shares purchased by the Company on the open market for purposes of the Plan.

The Company recognizes compensation expense for stock awards over the vesting period of the award. The following table presents stock-based compensation expense recorded in operations and maintenance expense in the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss) for the years ended December 31, 2010, 2009 and 2008:

	2010	2009	2008
Stock options	\$ 4,116	\$ 3,415	\$ 1,607
Restricted stock units	5,863	3,799	957
Restricted stock	—	—	1,798
Employee stock purchase plan	355	388	172
Stock-based compensation in operation and maintenance expense	10,334	7,602	4,534
Income tax benefit	(4,030)	(2,965)	(1,768)
After-tax stock-based compensation expense	<u>\$ 6,304</u>	<u>\$ 4,637</u>	<u>\$ 2,766</u>

There were no significant stock-based compensation costs capitalized during the years ended December 31, 2010, 2009 and 2008.

The cost of services received from employees in exchange for the issuance of stock options and restricted stock awards is measured based on the grant date fair value of the awards issued. The value of stock options and restricted stock awards at the date of the grant is amortized through expense over the requisite service period, which is generally three years. All awards granted in 2010, 2009 and 2008 are classified as equity.

The Company receives a tax deduction based on the intrinsic value of the award at the exercise date for stock options and the distribution date for restricted stock and restricted stock units. For each award, throughout the requisite service period, the Company recognizes the tax benefit related to compensation costs, which have been included in deferred tax assets. The tax deductions in excess of the benefits recorded throughout the requisite service period are recorded to shareholders' equity or the income statement and are included in the financing section of the statement of cash flows.

The Company stratified its grant populations and used historic employee turnover rates to estimate employee forfeitures. The estimated rate is compared to the actual forfeitures at the end of the period and adjusted as necessary.

Stock Options

On April 22, 2008, the Company granted 2,078 non-qualified stock options to certain employees and non-employee directors under the Plan. The stock options were awarded in two grants with "Grant 1" vesting on January 1, 2010 and "Grant 2" vesting January 1, 2011. These awards included 1,470 stock options that are subject to performance based vesting requirements. The performance conditions for Grant 1 are based on the achievement of 120% of net income targets in 2007 and 2008. Grant 2 performance conditions are based on the

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achievement of 120% of net income targets in 2008 and 2009. In February 2009, the Company cancelled 311 of the stock options related to the first performance vesting period because the performance goals were not fully met at December 31, 2008. In February 2010, the Company cancelled 459 of the stock options related to the second performance vesting period because the second performance goals were not fully met at December 31, 2009. The Company continued to recognize expense on the remaining stock options during the service period, which ended December 31, 2010.

Additionally during August 2008, the Company granted 5 stock options to newly appointed non-employee directors in two grants vesting on January 1, 2011. These awards had no performance vesting conditions.

In the first quarter of 2009 and 2010, the Company granted 1,091 and 867 non-qualified stock options, respectively, to certain employees under the Plan. The stock options vest ratably over the three-year service period beginning on January 1 of the year of grant. These awards have no performance vesting conditions.

On August 15, 2010, the Company's Board of Directors elected a new President and Chief Executive Officer ("CEO") of the Company. In connection with his election to these offices, the Company's new CEO was granted 25 non-qualified stock options that cliff vest two years from the date of grant. Additionally in August of 2010, the CEO was granted 53 non-qualified stock options that vest ratably over a three-year period beginning January 1, 2010. These awards have no performance vesting conditions.

Also on August 15, 2010, the Company's former President and Chief Executive Officer resigned as an officer and director of the Company. Pursuant to his resignation, the Company cancelled options to purchase 33 shares of Company stock, accelerated the vesting of 247 options, extended the termination dates of vested options and recognized \$315 additional expense related to the modifications that is recorded in operations and maintenance expense in the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss) for the year ended December 31, 2010.

The following table presents the weighted average assumptions used in the pricing model for grants and the resulting weighted average grant date fair value of stock options granted in the years ended December 31, 2010, 2009 and 2008.

	2010	2009	2008
Dividend yield	3.83%	3.86%	3.72%
Expected volatility	31.77%	31.67%	29.00%
Risk-free interest rate	2.14%	1.79%	2.82%
Expected life (years)	4.29	4.36	4.29
Exercise price	\$ 22.01	\$ 20.70	\$ 21.50
Grant date fair value per share	\$ 4.33	\$ 3.96	\$ 4.05

The Company utilized the "simplified method" to determine the expected stock option life due to insufficient historical experience to estimate the exercise patterns of the stock options granted. The Company began granting stock options at the time of the IPO in April 2008. Expected volatility is based on a weighted average of historic volatilities of traded common stock of peer companies (regulated water companies) over the expected term of the stock options and historic volatilities of the Company's common stock during the period it has been publicly traded. The dividend yield is based on the Company's expected dividend payments and the stock price on the date of grant, which was the IPO price for Grants 1 and 2. The risk-free interest rate is the market yield on U.S. Treasury strips with maturities similar to the expected term of the stock options. The exercise price of the stock options is equal to the fair market value of the underlying stock on the date of option grant. Stock options granted vest over periods ranging from one to three years and expire seven years from the effective date of the grant. The fair value of each option is estimated on the date of grant using the Black-Scholes option-pricing model.

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The value of stock options at the date of the grant is amortized through expense over the requisite service period using the straight-line method. As of December 31, 2010, \$3,074 of total unrecognized compensation costs related to the nonvested stock options is expected to be recognized over the remaining weighted-average period of 1.6 years. The total grant date fair value of stock options vested during the years ended December 31, 2010 and 2009 was \$4,505 and \$92, respectively.

The table below summarizes stock option activity for the year ended December 31, 2010.

	Shares	Weighted Average Exercise Price (per share)	Weighted Average Remaining Life (years)	Aggregate Intrinsic Value
Options outstanding at January 1, 2010	2,724	\$ 21.19		
Granted	945	22.01		
Cancelled	(459)	21.50		
Forfeited or expired	(199)	21.51		
Exercised	(141)	21.30		
Options outstanding at December 31, 2010	<u>2,870</u>	<u>\$ 21.38</u>	<u>4.72</u>	<u>\$ 11,209</u>
Exercisable at December 31, 2010 (a)	<u>1,008</u>	<u>\$ 21.24</u>	<u>3.96</u>	<u>\$ 4,085</u>

(a) Includes stock options issued to retired employees

Cash received for stock options exercised during the year ended December 31, 2010 was \$3,010 and the intrinsic value of the options was \$333, on which the Company recognized an income tax benefit of \$130. There were no exercises of options in 2009 and 2008.

Restricted Stock Units

On April 22, 2008, the Company granted 269 restricted stock units to certain employees and non-employee directors under the Plan. The restricted stock units were awarded in two grants with "Grant 1" vesting on January 1, 2010 and "Grant 2" vesting January 1, 2011. The grant date fair value of these restricted stock units is \$21.50. These awards included 190 restricted stock units that are subject to performance-based vesting requirements. The performance conditions for Grant 1 are based on the achievement of 120% of net income targets in 2007 and 2008. Grant 2 performance conditions are based on the achievement of 120% of net income targets in 2008 and 2009. In February 2009, the Company cancelled 39 of these restricted stock units related to the first performance vesting period because the performance goals were not fully met at December 31, 2008. In February 2010, the Company cancelled 60 of these restricted stock units related to the second performance vesting period because the second performance goals were not fully met at December 31, 2009. The Company continued to recognize expense on the remaining restricted stock units during the service period, which ended December 31, 2010.

Additionally during August 2008, the Company granted 1 restricted stock units to newly appointed non-employee directors in two grants vesting on January 1, 2011. The weighted average grant date fair value of these restricted stock units is \$20.32. These awards had no performance vesting conditions.

In February 2009, the Company granted 195 restricted stock units to certain employees under the Plan. The restricted stock units vest ratably over the three year performance period beginning January 1, 2009 (the "2009 Performance Period"); however, distribution of the shares is contingent upon the achievement of certain market thresholds over the 2009 Performance Period. The grant date fair value of the restricted stock units awarded in February 2009 is \$22.08.

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In May and June 2009, the Company granted 15 and 5 restricted stock units, respectively, to certain non-employee directors under the Plan. The weighted average grant date fair value of these restricted stock units is \$18.56. The restricted stock units vested on the date of the grant and were distributed in August 2010.

In the first quarter of 2010, the Company granted 243 restricted stock units to certain employees under the Plan. The restricted stock units vest ratably over the three year performance period beginning January 1, 2010 (the "2010 Performance Period"); however, distribution of the shares is contingent upon the achievement of internal performance measures and, separately, certain market thresholds over the 2010 Performance Period. The weighted average fair value of the restricted stock units granted with performance and service conditions is \$21.95 and for the restricted stock units granted with market and service conditions, the weighted average fair value is \$24.16.

On May 7, 2010, the Company granted 19 restricted stock units to non-employee directors under the Plan. The restricted stock units vested on the date of grant; however, distribution of the shares will be made within 30 days of the earlier of August 11, 2011 or the participant's separation from service. The grant date fair value of these restricted stock units was \$20.71.

On August 27, 2010, the Company's new CEO was granted 12 restricted stock units that vest over the period beginning August 27, 2010 and ending December 31, 2012; however, distribution of the shares is contingent upon the achievement of internal performance measures and, separately, certain market thresholds over the vesting period. The fair value of the restricted stock units granted with performance and service conditions is \$22.74 and for the restricted stock units granted with market and service conditions, the fair value is \$25.46.

Also in August 2010, the Company accelerated the vesting of 12 restricted stock units granted in 2008 to the Company's former CEO. Additionally the Company cancelled 9 restricted stock units granted in 2009 and 2010; the remaining outstanding awards will be subject to the Company's achievement of internal performance measures and certain market thresholds over the applicable three-year performance periods as if he had remained in the employ of the Company during the entire performance periods. The net impact associated with these modifications was a reduction to operations and maintenance expense of \$12 for the year ended December 31, 2010.

On September 24, 2010, the Company granted 6 restricted stock units to non-employee directors under the Plan. The restricted stock units vested on the date of grant; however, distribution of the shares will be made within 30 days of the earlier of October 15, 2011 or the participant's separation from service. The grant date fair value of these restricted stock units was \$23.49.

Restricted stock units generally vest over periods ranging from one to three years. Restricted stock units granted without market conditions are valued at the market value of the Company's common stock on the date of grant. Restricted stock units granted with market conditions are valued using a Monte Carlo model. Expected volatility is based on historical volatilities of traded common stock of the Company and comparative companies using daily stock prices over the past three years. The Company's volatility was calculated using a weighted average of eight and nine companies for the 2010 and 2009 periods, respectively, before the Company's stock was publically traded. The expected term is three years and the risk-free interest rate is based on the three-year U.S. Treasury rate in effect as of the measurement date. Based on these considerations, weighted average assumptions used in the Monte Carlo simulation are as follows for the years ended December 31, 2010 and 2009:

	2010	2009
Expected volatility	30.74%	32.00%
Risk-free interest rate	1.50%	1.30%
Expected life (years)	3	3

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The value of restricted stock awards at the date of the grant is amortized through expense over the requisite service period using the straight-line method for restricted stock units with service and/or performance vesting. The grant date fair value of restricted stock awards that have (a) market and/or performance and service conditions and (b) vest ratably is amortized through expense over the requisite service period using the graded-vesting method. As of December 31, 2010, \$2,283 of total unrecognized compensation cost related to the nonvested restricted stock units is expected to be recognized over the weighted-average remaining life of 1.8 years.

The table below summarizes restricted stock unit activity for the year ended December 31, 2010.

	Shares	Weighted Average Grant Date Fair Value (per share)
Nonvested total at January 1, 2010	402	\$ 21.77
Granted	280	23.23
Distributed	(58)	20.72
Cancelled	(60)	21.50
Forfeited	(40)	23.13
Undistributed vested awards(a)	(45)	22.47
Nonvested total at December 31, 2010	479	\$ 22.60

(a) Includes restricted stock units granted to retired employees and members of the Company's Board of Directors.

The aggregate intrinsic value of restricted stock units distributed during the year ended December 31, 2010 was \$1,241, on which the Company recognized an income tax benefit of \$15, which has been recorded in the accompanying Consolidated Balance Sheets.

If dividends are declared with respect to shares of the Company's common stock before the restricted stock units are distributed, the Company credits a liability for the value of the dividends that would have been paid if the restricted stock units were shares of Company common stock. When the restricted stock units are distributed, the Company pays the employee a lump sum cash payment equal to the value of the dividend equivalents accrued. The Company accrued dividend equivalents totaling \$474, \$279 and \$66 to retained earnings during the years ended December 31, 2010, 2009 and 2008, respectively.

Employee Stock Purchase Plan

The Company's Nonqualified Employee Stock Purchase Plan ("ESPP") was effective as of July 1, 2008. Under the ESPP, employees can use payroll deductions to acquire Company stock at the lesser of 90% of the fair market value of a) the beginning or b) the end of each three-month purchase period. As of December 31, 2010 there were 1,713 shares of common stock reserved for issuance under the ESPP. The Company's ESPP is considered compensatory. Compensation costs of \$355, \$388 and \$172 were recognized for the years ended December 31, 2010, 2009 and 2008, respectively. During the years ended December 31, 2010, 2009 and 2008, the Company issued 119, 129 and 39 shares, respectively, under the ESPP.

Restricted Stock

On April 22, 2008, a subsidiary of RWE contributed 90 shares of the Company's common stock to the Company and the Company granted 90 restricted stock awards under the 2007 Plan. The requisite service period for the restricted stock was three months and the grant date fair value was \$21.50. As of December 31, 2008, the restricted stock was fully vested and there were no unrecognized compensation costs related to the nonvested restricted stock units. The Company issued 84 shares of common stock under this award. The aggregate intrinsic

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value of restricted stock awards on the date of vesting was \$1,647. The Company recognized an income tax shortfall of \$60, which was recorded in the Consolidated Statement of Operations and Comprehensive Income (Loss) at the vesting of these awards.

Note 10: Preferred Stock Without Mandatory Redemption Requirements

Certain preferred stock agreements do not require annual sinking fund payments or redemption except at the option of the subsidiaries and are as follows:

Dividend Yield	Balance at December 31,	
	2010	2009
4.50%	\$ 1,720	\$ 1,720
5.00%	1,952	1,962
5.50%	486	486
5.75%	389	389
	<u>\$ 4,547</u>	<u>\$ 4,557</u>

Dividends issued totaled \$224 in 2010 and \$225 in 2009 and 2008, respectively.

The Company reflects its subsidiaries' preferred stock without mandatory redemption requirements in the total stockholders' equity section of the accompanying Consolidated Balance Sheets and represents the Company's noncontrolling interest. The dividends on these preferred shares have not been reflected as income attributable to noncontrolling interest in the Consolidated Statements of Operations and Comprehensive Income (Loss) as the total amount of dividends is not considered material. The dividends issued were \$224, \$225 and \$225 for 2010, 2009 and 2008, respectively. The amounts have been included as a component of other income (expenses) in the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss).

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Note 11: Long-Term Debt

The Company primarily incurs long-term debt to fund capital expenditures at the regulated subsidiaries. The components of long-term at December 31 are:

	Rate	Weighted Average Rate	Maturity Date	2010	2009
Long-term debt of American Water Capital Corp. ("AWCC")(a)					
Private activity bonds and government funded debt(b)					
Fixed rate	4.85%-6.75%	5.72%	2018-2040	\$ 322,610	\$ 200,975
Senior notes					
Fixed rate	5.39%-10.00%	6.26%	2011-2040	3,117,696	3,115,853
Long-term debt of other subsidiaries					
Private activity bonds and government funded debt					
Fixed rate	0.00%-6.20%	4.43%	2011-2039	1,203,834	1,197,611
Floating rate(c)	0.85%-1.05%	0.90%	2015	8,560	8,560
Mortgage bonds					
Fixed rate	5.48%-9.71%	7.48%	2011-2039	744,691	754,966
Mandatory redeemable preferred stock	4.60%-9.75%	8.40%	2013-2036	23,989	24,207
Notes payable and other(d)	4.90%-14.57%	7.49%	2011-2026	5,769	6,561
Long-term debt				5,427,149	5,308,733
Unamortized debt discount, net(e)				51,498	57,461
Fair value adjustment to interest rate hedge				(345)	0
Total long-term debt				\$ 5,478,302	\$ 5,366,194

- (a) AWCC, which is a wholly-owned subsidiary of the Company, has a strong support agreement with its parent, which under certain circumstances, is the functional equivalent of a guarantee.
- (b) As of December 31, 2009, the Company held \$10,635 of floating rate debt in its treasury, as it had not been able to re-issue the debt to investors at acceptable interest rates. On July 27, 2010, the Company re-issued this debt as fixed rate of 5.25% due 2028.
- (c) Represents variable rate tax-exempt bonds remarketed for periods up to 270 days. The \$8,560 balance is classified as current portion of long-term debt in the accompanying Consolidated Balance Sheets because it was repurchased by the Company during the first quarter of 2009 when no investor was willing to purchase it at market rates. This debt was subsequently remarketed as floating rate debt in the second quarter of 2009.
- (d) Includes capital lease obligations of \$5,076 and \$5,679 at December 31, 2010 and 2009, respectively.
- (e) Includes fair value adjustments previously recognized in acquisition purchase accounting.

All \$744,691 of the subsidiaries' mortgage bonds and \$1,154,634 of the \$1,203,834 total subsidiaries' private activity bonds and government funded debt are collateralized by utility plant.

Long-term debt indentures contain a number of covenants that, among other things, limit, subject to certain exceptions, the Company from issuing debt secured by the Company's assets. Certain long term notes require the Company to maintain a ratio of consolidated total indebtedness to consolidated total capitalization of not more than 0.70 to 1.00. The ratio at December 31, 2010 was 0.58 to 1.00. In addition, the Company has \$2,056,369 of notes which include the right to redeem the notes in whole or in part from time to time subject to certain restrictions.

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A portion of senior notes redeemed in 2007 were obtained for the use of certain of the Company's regulated subsidiaries. These notes were redeemed early resulting in a difference of \$8,655 between the book value of the notes and the cash consideration required to extinguish the notes. As agreed with the applicable Regulators, the difference on extinguishment was deferred as a regulatory liability by the Company's regulated subsidiaries and will be amortized to Interest, net over the remaining lives of the original notes for periods ranging from 2014 to 2034. The amount amortized was \$833, \$1,967, and \$1,044 in 2010, 2009, and 2008, respectively.

The future sinking fund payments and maturities are as follows:

Year	Amount
2011	\$ 44,760
2012	32,915
2013	113,710
2014	10,541
2015	50,707
Thereafter	5,174,516

The following long-term debt was issued in 2010:

Company	Type	Interest Rate	Maturity	Amount
American Water Capital Corp.(1)	Private activity bonds and government funded debt – fixed rate	4.85%-6.00%	2028-2040	\$ 151,635
Other subsidiaries	Private activity bonds and government funded debt – fixed rate	0.00%-5.60%	2021-2034	239,699
Total issuances				\$ 391,334

- (1) Includes \$122,775 of proceeds from issuances which are initially kept in Trust, pending the Company's certification that it has incurred qualifying capital expenditures. These issuances have been presented as non-cash on the accompanying Consolidated Statements of Cash Flows. Subsequent release of all or a lesser portion of these funds by the applicable Trust are reflected as the release of restricted funds, and are included in investing activities in the accompanying Consolidated Statements of Cash Flows.

The following long-term debt was retired through optional redemption or payment at maturity during 2010:

Company	Type	Interest Rate	Maturity	Amount
American Water Capital Corp.	Senior notes-fixed rate	6.00%-6.87%	2011-2039	\$ 28,157
Other subsidiaries	Private activity bonds and government funded debt-fixed rate	0.00%-6.88%	2010-2036	233,476
Other subsidiaries	Mortgage bond	7.86%-8.98%	2010-2011	10,275
Other subsidiaries	Mandatory redeemable preferred stock	4.60%-6.00%	2013-2019	218
Other	Capital leases & other			792
Total retirements & redemptions				\$ 272,918

Interest, net includes interest income of approximately \$10,184, \$10,422 and \$5,690 in 2010, 2009 and 2008, respectively.

One of the principal market risks to which the Company is exposed are changes in interest rates. In order to manage the exposure, the Company follows risk management policies and procedures, including the use of derivative contracts such as swaps. The Company uses a combination of fixed-rate and variable-rate debt to manage interest rate exposure. The Company does not enter into derivative contracts for speculative purposes

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and does not use leveraged instruments. The derivative contracts entered into are for periods consistent with the related underlying exposures. The Company is exposed to the risk that counterparties to derivative contracts will fail to meet their contractual obligations. The Company minimizes the counterparty credit risk on these transactions by dealing only with leading, credit-worthy financial institutions having long-term credit ratings of "A" or better.

On July 12, 2010, the Company entered into an interest rate swap to hedge \$100,000 of its 6.085% fixed rate debt maturing 2017. The Company will pay variable interest of six-month LIBOR plus 3.422%. The swap is accounted for as a fair value hedge, and matures with the fixed rate debt in 2017. The Company uses a combination of fixed-rate and variable-rate debt to manage interest rate exposure.

At December 31, 2010 and December 31, 2009, the Company had a \$100,000 and \$0 notional amount variable interest rate swap fair value hedge outstanding, respectively. The following table provides a summary of the derivative fair value balance recorded by the Company as of December 31, 2010 and the line item in the Consolidated Balance Sheet in which such amount is recorded:

Balance sheet classification	December 31, 2010	December 31, 2009
Regulatory and other long-term liabilities		
Other	\$ 898	\$ 0
Long-term debt		
Long-term debt	\$ (345)	\$ 0

For derivative instruments that are designated and qualify as fair value hedges, the gain or loss on the hedge instrument as well as the offsetting loss or gain on the hedged item attributable to the hedged risk are recognized in current net income (loss). The Company includes the gain or loss on the derivative instrument and the offsetting loss or gain on the hedged item in interest expense as follows:

Income Statement Classification	Gain (Loss) on Swap December 31, 2010	Gain (Loss) on Borrowings December 31, 2010	Hedge Ineffectiveness December 31, 2010
Interest, net	\$ (898)	\$ 345	\$ (553)

Note 12: Short-Term Debt

The components of short-term debt at December 31 are as follows:

	2010	2009
Revolving credit lines	\$ 2,734	\$ 0
Commercial paper, net of \$10 and \$5 discount at 2010 and 2009, respectively	175,290	84,995
Book overdraft	51,675	34,502
Total short-term debt	\$ 229,699	\$ 119,497

AWCC had the following available capacity under its commercial paper program at December 31:

	2010	2009
Commercial paper program	\$ 700,000	\$ 700,000
Commercial paper program available capacity	524,700	615,000

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AWCC has entered into an \$840,000 senior unsecured credit facility syndicated among the following group of 11 banks with JPMorgan Chase Bank, N.A. acting as administrative agent:

Bank	Commitment Amount Through September 15, 2012	Commitment Amount Through September 15, 2013
JPMorgan Chase Bank, N.A.	\$ 115,000	\$ 0
Citibank, N.A.	115,000	115,000
Citizens Bank of Pennsylvania	80,000	80,000
Credit Suisse	80,000	80,000
William Street Commitment Corporation	80,000	80,000
Merrill Lynch Bank USA	80,000	80,000
Morgan Stanley Bank	80,000	80,000
UBS Loan Finance LLC	80,000	80,000
National City Bank	50,000	50,000
PNC Bank, N.A.	40,000	40,000
The Bank of New York Mellon	40,000	0
	<u>\$ 840,000</u>	<u>\$ 685,000</u>

This revolving credit facility is principally used to support the commercial paper program at AWCC and to provide up to \$150,000 in letters of credit. On September 15, 2008, a majority of the banks agreed to further extend \$685,000 of commitments under this revolving credit facility to September 15, 2013. On December 18, 2008, The Bank of New York Mellon joined the credit facility syndicate with a commitment amount of \$40,000 through September 15, 2012. If any lender defaults in its obligation to fund advances, the Company may request the other lenders to assume the default lender's commitment or replace such defaulting lender by designating an assignee willing to assume the commitment, however the remaining lenders have no obligation to assume a defaulting lender's commitment and we can provide no assurances that we will replace a defaulting lender.

At December 31, AWCC had the following sub-limits and available capacity under the credit facility.

	2010	2009
Letter of credit sublimit	\$ 150,000	\$ 150,000
Letter of credit available capacity	113,203	101,754

At December 31, 2010, the Company had \$37,275 of outstanding letters of credit, \$36,797 of which was issued under the revolving credit facility noted above.

The following table presents the short-term borrowing activity for AWCC for the years ended December 31, 2010 and 2009:

	2010	2009
Average borrowings	\$ 164,782	\$ 347,413
Maximum borrowings outstanding	263,500	708,691
Weighted average interest rates, computed on a daily basis	0.42%	0.82%
Weighted average interest rates, at December 31	0.46%	0.39%

Interest rates on advances under the credit facility are based on either prime or the London Interbank Offering Rate ("LIBOR") plus an applicable margin based upon credit ratings of the Company, as well as total outstanding amounts under the agreement at the time of the borrowing. The maximum LIBOR margin is 55 basis points.

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The credit facility requires the Company to maintain a ratio of consolidated debt to consolidated capitalization of not more than 0.70 to 1.00. The ratio at December 31, 2010 was 0.58 to 1.00.

None of the Company's borrowings are subject to default or prepayment as a result of a downgrading of securities, although such a downgrading could increase fees and interest charges under the Company's credit facilities.

As part of the normal course of business, the Company routinely enters contracts for the purchase and sale of water, energy, fuels and other services. These contracts either contain express provisions or otherwise permit the Company and its counterparties to demand adequate assurance of future performance when there are reasonable grounds for doing so. In accordance with the contracts and applicable contract law, if the Company is downgraded by a credit rating agency, especially if such downgrade is to a level below investment grade, it is possible that a counterparty would attempt to rely on such a downgrade as a basis for making a demand for adequate assurance of future performance. Depending on its net position with a counterparty, the demand could be for the posting of collateral. In the absence of expressly agreed provisions that specify the collateral that must be provided, the obligation to supply the collateral requested will be a function of the facts and circumstances of the Company's situation at the time of the demand. If the Company can reasonably claim that it is willing and financially able to perform its obligations, it may be possible to successfully argue that no collateral should be posted or that only an amount equal to two or three months of future payments should be sufficient. The Company does not expect to post any collateral which will have a material adverse impact on the Company's results of operations, financial position or cash flows.

AWCC has entered into a one year \$10,000 committed revolving line of credit with PNC Bank, N.A. Outstanding borrowings against this line totaled \$2,734 and \$0 at December 31, 2010 and 2009, respectively. This line of credit will terminate on December 31, 2011 unless extended and is used primarily for short-term working capital needs. Interest rates on advances under this line of credit are based on either the prime rate of the financial institution or the applicable LIBOR rate for the term selected plus 175 basis points.

Note 13: General Taxes

Components of general tax expense from continuing operations for the years ended December 31 are as follows:

	2010	2009	2008
Gross receipts and franchise	\$ 87,938	\$ 81,244	\$ 79,228
Property and capital stock	87,028	79,420	80,025
Payroll	33,029	29,749	31,060
Other general	10,658	8,849	8,826
	<u>\$ 218,653</u>	<u>\$ 199,262</u>	<u>\$ 199,139</u>

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Note 14: Income Taxes

Components of income tax expense from continuing operations for the years ended December 31 are as follows:

	2010	2009	2008
State income taxes			
Current	\$ 25,753	\$ (18,525)	\$ 16,196
Deferred			
Current	128	(1,599)	409
Non-current	10,410	40,687	10,332
	<u>36,291</u>	<u>20,563</u>	<u>26,937</u>
Federal income taxes			
Current	(179)	555	1,522
Deferred			
Current	306	(11,929)	1,973
Non-current	146,758	113,662	82,929
Amortization of deferred investment tax credits	(1,567)	(1,433)	(1,534)
	<u>145,318</u>	<u>100,855</u>	<u>84,890</u>
	<u>\$ 181,609</u>	<u>\$ 121,418</u>	<u>\$ 111,827</u>

A reconciliation of income tax expense from continuing operations at the statutory federal income tax rate to actual income tax expense for the years ended December 31 is as follows:

	2010	2009	2008
Income tax at statutory rate	\$ 157,303	\$ (39,083)	\$ (157,708)
Increases (decreases) resulting from:			
State taxes, net of federal taxes	23,589	13,366	17,509
Change in valuation allowance	(533)	(6,578)	(158)
Flow through differences	2,969	2,918	2,731
Amortization of deferred investment tax credits	(1,567)	(1,433)	(1,534)
Subsidiary preferred dividends	708	714	716
Impairment charges	0	150,705	252,158
Other, net	(860)	809	(1,887)
Actual income tax expense	<u>\$ 181,609</u>	<u>\$ 121,418</u>	<u>\$ 111,827</u>

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The following table provides the components of the net deferred tax liability from continuing operations at December 31:

	2010	2009
Deferred tax assets:		
Advances and contributions	\$ 586,595	\$ 568,422
Deferred investment tax credits	11,810	12,417
Other postretirement benefits	93,136	100,936
Tax losses and credits	349,710	352,426
Pension benefits	142,185	147,904
Unamortized debt discount, net	22,848	24,100
Other	12,796	23,891
	<u>1,219,080</u>	<u>1,230,096</u>
Valuation allowance	(23,788)	(25,621)
	<u>1,195,292</u>	<u>1,204,475</u>
Deferred tax liabilities:		
Utility plant, principally due to depreciation differences	1,973,613	1,771,263
Income taxes recoverable through rates	93,538	76,697
Deferred security costs	3,065	4,144
Deferred business services project expenses	4,456	4,456
Deferred other postretirement benefits	48,324	53,152
Deferred pension benefits	79,924	77,924
Other	85,427	68,516
	<u>2,288,347</u>	<u>2,056,152</u>
	<u>\$ (1,093,055)</u>	<u>\$ (851,677)</u>

At December 31, 2010 and 2009, the Company recorded federal net operating loss ("NOL") carryforwards of \$1,185,337 and \$1,123,938, respectively. The Company believes the federal NOL carryforwards are more likely than not to be recovered and require no valuation allowance. The Company evaluated its ability to fully utilize the existing federal NOL carryforwards in light of the RWE divestiture in November 2009. Under Internal Revenue Code ("I.R.C.") Section 382, an ownership change occurs if there is a greater than fifty percent (50%) change in equity ownership of a company over a three year period determined by reference to the ownership of persons holding five percent (5%) or more of that company's equity securities. If a company undergoes an ownership change as defined by I.R.C. Section 382, the company's ability to utilize its pre-change NOL carryforwards to offset post-change income may be limited.

The Company believes that the limitation imposed by I.R.C. Section 382 generally should not preclude use of its federal NOL carryforwards, assuming the Company has sufficient taxable income in future carryforward periods to utilize those NOL carryforwards. The Company's federal NOL carryforwards do not begin expiring until 2024.

At December 31, 2010 and 2009, the Company had state NOLs of \$714,674 and \$760,190, respectively, a portion of which are offset by a valuation allowance because the Company does not believe these NOLs are more likely than not to be realized. The state NOL carryforwards will expire between 2011 and 2030.

At December 31, 2010 and 2009, the Company had Canadian NOL carryforwards of \$5,398 and \$13,033, respectively. The majority of these carryforwards are offset by a valuation allowance because the Company does not believe these NOLs are more likely than not to be realized. The Canadian NOL carryforwards will expire between 2014 and 2029.

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The Company files income tax returns in the United States federal jurisdiction and various state and foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state or local or non-U.S income tax examinations by tax authorities for years before 2005.

In March 2010, the Company filed refund claims of \$25,314. The refund claims are attributable to the carry back of Alternative Minimum Tax NOLs generated in 2008. These claims procedurally require approval by the Joint Committee of Taxation ("JCT"). The Company received the refund in April 2010. In August 2010, the IRS notified the Company that additional audit procedures were necessary to support the filing of the JCT report. The audit has not been concluded at December 31, 2010, and no adjustments have been proposed so far.

The Company has state income tax examinations in progress and does not expect material adjustments to result.

The Patient Protection and Affordable Care Act (the "PPACA") became law on March 23, 2010, and the Health Care and Education Reconciliation Act of 2010 became law on March 30, 2010, which makes various amendments to certain aspects of the PPACA (together, the "Acts"). The PPACA effectively changes the tax treatment of federal subsidies paid to sponsors of retiree health benefit plans that provide a benefit that is at least actuarially equivalent to the benefits under Medicare Part D. As a result of the Acts, these subsidy payments will effectively become taxable in tax years beginning after December 31, 2012.

Although this change does not take effect immediately, companies are required to recognize the full accounting impact in their financial statements in the period in which the legislation was enacted. As a result, the Company followed its original accounting for the underfunded status of the other postretirement benefits for the Medicare Part D adjustment and recorded a reduction in deferred tax assets and an increase in its regulatory assets amounting to \$16,979.

The following table summarizes the changes in the Company's gross liability, excluding interest and penalties, for unrecognized tax benefits:

Balance at January 1, 2009	\$	1,351
Increases in prior period tax positions		88,248
Increases in current period tax positions		22,631
Decreases due to lapse of statute of limitations		(209)
Balance at December 31, 2009		112,021
Increases in current period tax positions		7,434
Decreases due to lapse of statute of limitations		(1,141)
Balance at December 31, 2010	\$	<u>118,314</u>

The liability balance as of December 31, 2010 and 2009 does not include interest and penalties of \$80 and \$439, respectively, which is recorded as a component of income tax expense. The majority of the increased tax position is attributable to temporary differences. The increase in 2010 current period tax positions relates primarily to the Company's change in tax accounting method filed in 2008 for repair and maintenance costs on its utility assets. At December 31, 2010, the unrecognized tax benefits for the prior and current periods associated with the change in tax accounting method were approximately \$0 and \$7,434. At December 31, 2009, the unrecognized tax benefits for the prior and current periods associated with the change in tax accounting method were approximately \$88,248 and \$15,987. The Company increased the current period tax position in the 2009 unrecognized tax benefits roll forward schedule by an additional \$6,644 related to transaction costs deducted in 2009 as a result of RWE's full divestiture of the Company's stock.

The Company does not anticipate material changes to its unrecognized tax benefits within the next year. If the Company sustains all of its positions at December 31, 2010 and 2009, an unrecognized tax benefit of \$6,644 and \$7,785, respectively, excluding interest and penalties, would impact the Company's effective tax rate.

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The following table summarizes the changes in the Company's valuation allowance:

Balance at January 1, 2008	\$	29,021
Increases in current period tax positions		2,369
Decreases in prior period tax positions		(2,528)
Balance at December 31, 2008	\$	28,862
Increases in current period tax positions		2,778
Decreases in current period tax positions		(5,698)
Decreases in prior period tax positions		(321)
Balance at December 31, 2009	\$	25,621
Increases in current period tax positions		907
Decreases in current period tax positions		(2,740)
Balance at December 31, 2010	\$	23,788

Note 15: Employee Benefits

Pension and Other Postretirement Benefits

The Company maintains noncontributory defined benefit pension plans covering eligible non-union employees of its regulated utility and shared services operations. Benefits under the plans are based on the employee's years of service and compensation. The pension plans have been closed for any employees hired on or after January 1, 2006. Union employees hired on or after January 1, 2001 had their accrued benefit frozen and will be able to receive this benefit as a lump sum upon termination or retirement. Union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006 are provided with a 5.25% of base pay defined contribution plan.

The Company's funding policy is to contribute at least the minimum amount required by the Employee Retirement Income Security Act of 1974. Pension plan assets are invested in a number of investments including equity and bond mutual funds, fixed income securities and guaranteed interest contracts with insurance companies.

Pension expense in excess of the amount contributed to the pension plans is deferred by certain regulated subsidiaries pending future recovery in rates charged for utility services as contributions are made to the plans. (See Note 7)

The Company also has several unfunded noncontributory supplemental non-qualified pension plans that provide additional retirement benefits to certain employees.

The Company maintains postretirement benefit plans providing varying levels of medical and life insurance to eligible retirees. The retiree welfare plans are closed for union employees hired on or after January 1, 2006. The plans had previously closed for non-union employees hired on or after January 1, 2002.

The Company's policy is to fund postretirement benefit costs for rate-making purposes. Plan assets are invested in equity and bond mutual funds.

The obligations of the plans are dominated by obligations for active employees. Because the timing of expected benefit payments is so far in the future and the size of the plan assets are small relative to the Company's assets, the investment strategy is to allocate a large portion of assets to equities, which the Company believes will provide the highest return over the long-term period. The fixed income assets are invested in long duration debt securities in order to better match the duration of the plan liability.

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The Company periodically conducts an asset liability modeling study to ensure the investment strategy is aligned with the profile of the obligations. The long-term goals are to maximize the plan funded status and minimize contributions and pension expense, while taking into account the potential volatility risks on each of these items.

None of the Company's securities are included in pension or other postretirement benefit plan assets.

The asset allocations for the Company's U.S. pension plan at December 31, 2010 and 2009, by asset category, are as follows:

Asset category	Target Allocation 2010	Percentage of Plan Assets At December 31,	
		2010	2009
Equity securities	70%	70%	71%
Fixed income (including cash)	30%	30%	29%
Total	100%	100%	100%

The investment policy guidelines of the pension plan require that the fixed income portfolio has an overall weighted average credit rating of AA or better by Standard & Poor's and the minimum credit quality for fixed income securities must be BBB- or better. Up to 20% of the portfolio may be invested in collateralized mortgage obligations backed by the United States Government.

The fair values of pension plan assets at December 31, 2010, by asset category, follow:

Asset Category	Target Allocation 2011	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets at December 31, 2010
Equity securities:						
U.S. large cap	36%	299,548	299,548	—	—	35%
U.S. small cap value	12%	113,356	113,356	—	—	13%
International	22%	190,330	190,330	—	—	22%
Fixed income securities:	30%					30%
U.S. Treasury and government bonds	—	63,469	63,469	—	—	—
Corporate bonds	—	33,118	—	\$ 33,118	—	—
Mortgage-backed securities	—	99,478	—	99,478	—	—
Guaranteed annuity contracts	—	55,207	—	9,089	\$ 46,118	—
Total	100%	\$ 860,973	\$ 673,170	\$ 141,685	\$ 46,118	100%

The following table presents a reconciliation of the beginning and ending balances of the fair value measurements using significant unobservable inputs (Level 3):

	Guaranteed Annuity Contract
Balance, January 1, 2010	\$ 47,447
Actual return on assets	2,587
Transfers in(out)	(3,916)
Balance, December 31, 2010	\$ 46,118

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The fair values of pension plan assets at December 31, 2009, by asset category, follow:

Asset Category	Target Allocation 2010	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets at December 31, 2009
Cash	—	\$ 10,156	\$ 10,156	—	—	—
Equity securities:						
U.S. large cap	36%	250,353	250,353	—	—	36%
U.S. small cap value	12%	88,397	88,397	—	—	13%
International	22%	153,719	153,719	—	—	22%
Fixed income securities:	30%					29%
U.S. Treasury and government bonds	—	23,495	23,495	—	—	—
Corporate Bonds	—	23,624	—	\$ 23,624	—	—
Mortgage-backed securities	—	89,736	—	89,736	—	—
Guaranteed annuity contracts	—	56,040	—	8,593	\$ 47,447	—
Total	100%	\$ 695,520	\$ 526,120	\$ 121,953	\$ 47,447	100%

The following table presents a reconciliation of the beginning and ending balances of the fair value measurements using significant unobservable inputs (Level 3):

	Guaranteed Annuity Contract
Balance, January 1, 2009	\$ 42,386
Actual return on assets	9,959
Transfers in(out)	(4,898)
Balance, December 31, 2009	\$ 47,447

The Company's other postretirement benefit plans are partially funded. The asset allocations for the Company's other postretirement benefit plans at December 31, 2010 and 2009, by asset category, are as follows:

Asset category	Target Allocation 2010	Percentage of Plan Assets At December 31,	
		2010	2009
Equity securities	70%	70%	70%
Fixed income (including cash)	30%	30%	30%
Total	100%	100%	100%

The postretirement benefit plan assets are invested in a manner consistent with the pension plan investment policy.

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The fair values of postretirement benefit plan assets at December 31, 2010, by asset category, follow:

Asset Category	Target Allocation 2011	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets at December 31, 2010
Cash	—	\$ 12,500	\$ 12,500	—	—	—
Equity securities:						
U.S. large cap	36%	131,775	131,775	—	—	35%
U.S. small cap value	12%	53,898	53,898	—	—	14%
International	22%	77,935	77,935	—	—	21%
Fixed income securities:	30%					30%
U.S. Treasury securities	—	16,025	16,025	—	—	—
Corporate bonds	—	34,746	—	\$ 34,746	—	—
Mortgage-backed securities	—	47,524	—	47,524	—	—
Total	100%	\$ 374,403	\$ 292,133	\$ 82,270	—	100%

The fair values of postretirement benefit plan assets at December 31, 2009, by asset category, follow:

Asset Category	Target Allocation 2010	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets at December 31, 2009
Cash	—	\$ 2,459	\$ 2,459	—	—	—
Equity securities:						
U.S. large cap	36%	108,703	108,703	—	—	35%
U.S. small cap value	12%	40,575	40,575	—	—	13%
International	22%	70,111	70,111	—	—	22%
Fixed income securities:	30%					30%
U.S. Treasury securities	—	25,072	25,072	—	—	—
Corporate Bonds	—	31,265	—	\$ 31,265	—	—
Mortgage-backed securities	—	33,857	—	33,857	—	—
Total	100%	\$ 312,042	\$ 246,920	\$ 65,122	—	100%

Valuation Techniques Used to Determine Fair Value

Cash—Cash and investments with maturities of three months or less when purchased, including certain short-term fixed-income securities, are considered cash and are included in the recurring fair value measurements hierarchy as Level 1.

Equity securities—With respect to equity securities, the trustees obtain prices from pricing services, whose prices are obtained from direct feeds from market exchanges, which the Company is able to independently corroborate. Equity securities are valued based on quoted prices in active markets and categorized as Level 1.

Fixed-income securities—U.S. Treasury securities and government bonds have been categorized in Level 1 because they trade in highly-liquid and transparent markets that the Company can corroborate. The fair values of corporate bonds, mortgage backed securities and a certain guaranteed annuity contract are based on evaluated prices that reflect observable market information, such as actual trade information of similar securities and have been categorized as Level 2 because the valuations are calculated using models which utilize actively traded market data that the Company can corroborate. Certain other guaranteed annuity contracts are invested in a commingled fund and categorized as Level 3 because the investments are not publicly quoted. The fund

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administrator values the fund using the net asset value per fund share, derived from the quoted prices in active markets of the underlying securities. Since these valuation inputs are not highly observable, the commingled funds have been categorized as Level 3.

The following table provides a rollforward of the changes in the benefit obligation and plan assets for the most recent two years for all plans combined:

	Pension Benefits		Other Benefits	
	2010	2009	2010	2009
Change in benefit obligation				
Benefit obligation at January 1	\$ 1,128,162	\$ 1,016,889	\$ 548,139	\$ 475,742
Service cost	30,675	28,426	14,663	13,172
Interest cost	67,602	62,919	32,149	29,180
Plan participants' contributions	—	—	2,307	2,216
Amendments	3,762	1,600	(8,195)	0
Actuarial (gain) loss	93,399	53,135	23,764	50,357
Gross benefits paid	(38,144)	(34,807)	(23,989)	(24,297)
Federal subsidy	—	—	1,349	1,769
Benefit obligation at December 31	<u>\$ 1,285,456</u>	<u>\$ 1,128,162</u>	<u>\$ 590,187</u>	<u>\$ 548,139</u>
Change in Plan Assets				
Fair value of plan assets at January 1	\$ 695,520	\$ 513,283	\$ 312,042	\$ 234,501
Actual return on plan assets	105,078	131,252	45,305	57,968
Employer contributions	98,519	85,792	38,738	41,654
Plan participants' contributions	—	—	2,307	2,216
Benefits paid	(38,144)	(34,807)	(23,989)	(24,297)
Fair value of plan assets at December 31	<u>\$ 860,973</u>	<u>\$ 695,520</u>	<u>\$ 374,403</u>	<u>\$ 312,042</u>
Funded status at December 31	\$ (424,483)	\$ (432,642)	\$ (215,784)	\$ (236,097)
Amounts recognized in the balance sheet consist of:				
Current liability	\$ (2,097)	\$ (1,632)	\$ (33)	\$ (52)
Noncurrent liability	(422,386)	(431,010)	(215,751)	(236,045)
Net amount recognized	<u>\$ (424,483)</u>	<u>\$ (432,642)</u>	<u>\$ (215,784)</u>	<u>\$ (236,097)</u>

The following table provides the components of the Company's accumulated other comprehensive income and regulatory assets that have not been recognized as components of periodic benefit costs as of December 31.

	Pension Benefits		Other Benefits	
	2010	2009	2010	2009
Net actuarial loss (gain)	\$ 302,357	\$ 275,188	\$ 140,453	\$ 145,780
Prior service cost (credit)	6,580	3,140	(18,788)	(12,120)
Transition obligation (asset)	—	—	0	520
Net amount recognized	<u>\$ 308,937</u>	<u>\$ 278,328</u>	<u>\$ 121,665</u>	<u>\$ 134,180</u>
Regulatory assets	\$ 184,937	\$ 166,441	\$ 121,665	\$ 134,180
Accumulated other comprehensive income	124,000	111,887	—	—
	<u>\$ 308,937</u>	<u>\$ 278,328</u>	<u>\$ 121,665</u>	<u>\$ 134,180</u>

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At December 31, 2010 and 2009, the projected benefit obligation, accumulated benefit obligation and fair value of plan assets for pension plans with a projected obligation in excess of plan assets were as follows:

	Projected Benefit Obligation Exceeds the Fair Value of Plans' Assets	
	2010	2009
Projected benefit obligation	\$ 1,285,000	\$ 1,128,000
Fair value of plan assets	861,000	696,000
	Accumulated Benefit Obligation Exceeds the Fair Value of Plans' Assets	
	2010	2009
Accumulated benefit obligation	\$ 1,138,000	\$ 993,000
Fair value of plan assets	861,000	696,000

The accumulated postretirement benefit obligation exceeds plan assets for all of the Company's other postretirement benefit plans.

In August 2006, the Pension Protection Act ("PPA") was signed into law in the U.S. The PPA replaces the funding requirements for defined benefit pension plans by requiring that defined benefit plans contribute to 100% of the current liability funding target over seven years. Defined benefit plans with a funding status of less than 80% of the current liability are defined as being "at risk" and additional funding requirements and benefit restrictions may apply. The PPA was effective for the 2008 plan year with short-term phase-in provisions for both the funding target and at-risk determination. The Company's qualified defined benefit plan is currently funded above the at-risk threshold, and therefore the Company expects that the plans will not be subject to the "at risk" funding requirements of the PPA. The Company is proactively monitoring the plan's funded status and projected contributions under the new law to appropriately manage the potential impact on cash requirements.

Minimum funding requirements for the qualified defined benefit pension plan are determined by government regulations and not by accounting pronouncements. The Company plans to contribute amounts at least equal to the minimum required contributions in 2011 to the qualified pension plans. The Company plans to contribute its 2011 other postretirement benefit cost for rate-making purposes.

Information about the expected cash flows for the pension and postretirement benefit plans is as follows:

	Pension Benefits	Other Benefits
	2011	2011
2011 expected employer contributions		
To plan trusts	\$ 139,600	\$ 27,212
To plan participants	1,913	52

The Company made 2011 contributions to fund pension benefits and other benefits of \$21,000 and \$0, respectively through February 2011.

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The following table reflects the net benefits expected to be paid from the plan assets or the Company's assets:

	Pension Benefits		Other Benefits		
	Expected Benefit Payments		Expected Benefit Payments		Expected Federal Subsidy Payments
2011	\$	42,997	\$	25,388	\$ 1,617
2012		48,086		27,811	1,801
2013		53,566		30,401	1,978
2014		59,352		33,256	2,134
2015		65,512		36,093	2,292
2016—2020		425,136		218,483	14,143

Because the above amounts are net benefits, plan participants' contributions have been excluded from the expected benefits.

Accounting for pensions and other postretirement benefits requires an extensive use of assumptions about the discount rate, expected return on plan assets, the rate of future compensation increases received by the Company's employees, mortality, turnover and medical costs. Each assumption is reviewed annually. The assumptions are selected to represent the average expected experience over time and may differ in any one year from actual experience due to changes in capital markets and the overall economy. These differences will impact the amount of pension and other postretirement benefit expense that the Company recognizes.

The significant assumptions related to the Company's pension and other postretirement benefit plans are as follows:

	Pension Benefits			Other Benefits		
	2010	2009	2008	2010	2009	2008
Weighted-average assumptions used to determine December 31 benefit obligations						
Discount rate	5.32%	5.93%	6.12%	5.27%	5.82%	6.09%
Rate of compensation increase	3.50%	4.00%	4.00%	N/A	N/A	N/A
Medical trend	N/A	N/A	N/A	graded from 8% in 2011 to 5% in 2017+	graded from 8.5% in 2010 to 5% in 2017+	graded from 8% in 2009 to 5% in 2015+
Weighted-average assumptions used to determine net periodic cost						
Discount rate	5.93%	6.12%	6.27%	5.82%	6.09%	6.20%
Expected return on plan assets	7.90%	7.90%	7.90%	7.60%	7.60%	7.75%
Rate of compensation increase	4.00%	4.00%	4.25%	N/A	N/A	N/A
Medical trend	N/A	N/A	N/A	graded from 8.5% in 2010 to 5% in 2017+	graded from 8% in 2009 to 5% in 2015+	graded from 8% in 2008 to 5% in 2014+

N/A—Assumption is not applicable.

The discount rate assumption was determined for the pension and postretirement benefit plans independently. A yield curve was developed for a universe containing the majority of U.S.-issued Aa-graded corporate bonds, all of which were non callable (or callable with make-whole provisions). For each plan, the discount rate was developed as the level equivalent rate that would produce the same present value as that using spot rates aligned with the projected benefit payments.

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The expected long-term rate of return on plan assets is based on historical and projected rates of return for current and planned asset classes in the plans' investment portfolios. Assumed projected rates of return for each of the plans' projected asset classes were selected after analyzing historical experience and future expectations of the returns and volatility of the various asset classes. Based on the target asset allocation for each asset class, the overall expected rate of return for the portfolio was developed, adjusted for historical and expected experience of active portfolio management results compared to the benchmark returns and for the effect of expenses paid from plan assets. The Company's pension expense increases as the expected return on assets decreases.

Assumed health care cost trend rates have a significant effect on the amounts reported for the other postretirement benefit plans. The health care cost trend rate is based on historical rates and expected market conditions. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	One- Percentage- Point Increase	One- Percentage- Point Decrease
Effect on total of service and interest cost components	\$ 7,236	\$ 5,933
Effect on other postretirement benefit obligation	\$ 79,087	\$ 65,679

The following table provides the components of net periodic benefit costs for the years ended December 31:

	2010	2009	2008
Components of net periodic pension benefit cost			
Service cost	\$ 30,675	\$ 28,426	\$ 26,206
Interest cost	67,602	62,919	58,195
Expected return on plan assets	(56,751)	(42,224)	(51,701)
Amortization of:			
Prior service cost (credit)	322	182	181
Actuarial (gain) loss	17,902	23,968	5
Net periodic pension benefit cost	<u>\$ 59,750</u>	<u>\$ 73,271</u>	<u>\$ 32,886</u>
Other changes in plan assets and benefit obligations recognized in other comprehensive income, net of tax			
Amortization of prior service credit (cost)	\$ (79)	\$ (46)	\$ (26)
Current year actuarial (gain) loss	11,836	(9,981)	64,139
Amortization of actuarial gain (loss)	(4,368)	(5,994)	(1)
Total recognized in other comprehensive income	<u>\$ 7,389</u>	<u>\$ (16,021)</u>	<u>\$ 64,112</u>
Total recognized in net periodic benefit cost and comprehensive income	<u>\$ 67,139</u>	<u>\$ 57,250</u>	<u>\$ 96,998</u>
Components of net periodic other postretirement benefit cost			
Service cost	\$ 14,663	\$ 13,172	\$ 12,425
Interest cost	32,149	29,180	28,197
Expected return on plan assets	(24,372)	(18,638)	(23,002)
Amortization of:			
Transition obligation (asset)	173	173	173
Prior service cost (credit)	(1,180)	(1,180)	(1,180)
Actuarial (gain) loss	8,159	9,155	810
Net periodic other postretirement benefit cost	<u>\$ 29,592</u>	<u>\$ 31,862</u>	<u>\$ 17,423</u>

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The Company's policy is to recognize curtailments when the total expected future service of plan participants is reduced by greater than 10% due to an event that results in terminations and/or retirements.

The estimated amounts that will be amortized from accumulated other comprehensive income and regulatory assets into net periodic benefit cost in 2011 are as follows:

	Pension Benefits	Other Benefits
Actuarial (gain) loss	\$ 18,551	\$ 7,365
Prior service cost (credit)	722	(1,924)
Total	\$ 19,273	\$ 5,441

Savings Plans for Employees

The Company maintains 401(k) savings plans that allow employees to save for retirement on a tax-deferred basis. Employees can make contributions that are invested at their direction in one or more funds. The Company makes matching contributions based on a percentage of an employee's contribution, subject to certain limitations. Due to the Company's discontinuing new entrants into the defined benefit pension plan, on January 1, 2006 the Company began providing an additional 5.25% of base pay defined contribution benefit for union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006. The Company expensed contributions to the plans totaling \$8,651 for 2010, \$8,082 for 2009, and \$7,789 for 2008, respectively. All of the Company's contributions are invested in one or more funds at the direction of the employee.

Note 16: Commitments and Contingencies

OMI/Thames Water Stockton, Inc. ("OMI/TW") is a 50/50 joint venture between a subsidiary of the Company and Operations Management International, Inc. ("OMI"). In February 2003, OMI/TW and the City of Stockton, California (the "City") entered into a 20-year service contract for capital improvements and management services of water, wastewater and storm water utilities. By mutual agreement, OMI/TW and the City of Stockton terminated the contract effective February 29, 2008 (the "Termination Date"). Upon termination, responsibility for management and operation of the system was returned to the City. OMI/TW agreed to provide a limited twelve-month warranty relating to certain components of the facilities that OMI/TW constructed (the "WW39 Plant"), which expired on December 31, 2008. OMI/TW also agreed to correct any latent defects relating to significant deficiencies in the structural components of certain capital improvements discovered prior to November 15, 2009, if any. Additionally OMI/TW committed to pay for certain employee transition costs and assumed financial responsibility for regulatory fines levied through the Termination Date, if any, resulting from OMI/TW's failure to comply with applicable National Pollutant Discharge Elimination System permit requirements and/or incidents traced to design defects in the WW39 Plant. During 2007, the California State Water Resources Control Board (the "Board") issued a notice of violation and a corresponding Settlement Communication related to a discharge into an adjacent river. The City has reached a final settlement agreement with the Board related to the discharge. In connection with the final settlement agreement, OMI/TW has agreed to pay a civil penalty and monitoring costs of \$425. The Company had recorded a contingent liability related to the issues above; \$1,300 was outstanding at December 31, 2009. The contingency was resolved and the contingent liability was reversed to income during the first quarter of 2010.

The Company is also routinely involved in legal actions incident to the normal conduct of its business. At December 31, 2010, the Company has accrued approximately \$3,600 as probable costs and it is reasonably possible that additional losses could range up to \$16,400 for these matters. For certain matters, the Company is unable to estimate possible losses. The Company believes that damages or settlements, if any, recovered by plaintiffs in such claims or actions will not have a material adverse effect on the Company's results of operations, financial position or cash flows.

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The Company enters into agreements for the provision of services to water and wastewater facilities for the United States military, municipalities and other customers. The Company's military services agreements expire between 2051 and 2060 and have remaining performance commitments as measured by estimated remaining contract revenue of \$2,082,000 at December 31, 2010. The military contracts are subject to customary termination provisions held by the U.S. Federal Government prior to the agreed upon contract expiration. The Company's Operations and Maintenance agreements with municipalities and other customers expire between 2011 and 2048 and have remaining performance commitments as measured by estimated remaining contract revenue of \$1,197,000 at December 31, 2010. Some of the Company's long-term contracts to operate and maintain a municipality's, federal government's or other party's water or wastewater treatment and delivery facilities include responsibility for certain maintenance for some of those facilities, in exchange for an annual fee. Unless specifically required to perform certain maintenance activities, the maintenance costs are recognized when the maintenance is performed.

Commitments have been made in connection with certain construction programs. The estimated capital expenditures required under legal and binding contractual obligations amounted to \$241,350 at December 31, 2010.

The Company's regulated subsidiaries maintain agreements with other water purveyors for the purchase of water to supplement their water supply. The Company's subsidiaries purchased water expense under these types of agreements amounted to approximately \$107,121, \$98,821 and \$95,739 during the years ended December 31, 2010, 2009 and 2008, respectively. The estimated annual commitment related to the minimum quantities of water purchased is expected to approximate \$51,600 in 2011, \$47,409 in 2012, \$46,095 in 2013, \$46,077 in 2014, \$45,659 in 2015 and \$486,489 thereafter.

Note 17: Net Income (Loss) per Common Share

Earnings per share is calculated using the two-class method. The two-class method is an earnings allocation formula that determines earnings per share for each class of common stock and participating security. The Company has participating securities related to restricted stock units, granted under the Company's 2007 Omnibus Equity Compensation Plan, that earn dividend equivalents on an equal basis with common shares. In applying the two-class method, undistributed earnings are allocated to both common shares and participating securities. There were 21 participating securities that were not included in the basic net loss per common share calculation at December 31, 2009 because they were anti-dilutive. There were no participating securities for the year ended December 31, 2008. The following is a reconciliation of the Company's net income (loss) and weighted average common shares outstanding for calculating basic net income (loss) per share:

	Years Ended December 31,		
	2010	2009	2008
Basic			
Net income (loss)	\$ 267,827	\$ (233,083)	\$ (562,421)
Less: Distributed earnings to common shareholders (a)	150,724	137,597	64,055
Less: Distributed earnings to participating securities	51	0	0
Undistributed earnings	117,052	(370,680)	(626,476)
Undistributed earnings allocated to common shareholders (b)	117,014	(370,680)	(626,476)
Undistributed earnings allocated to participating securities	38	0	0
Total income (loss) available to common shareholders, basic (a)+(b)	\$ 267,738	\$ (233,083)	\$ (562,421)
Weighted average common shares outstanding, basic	174,833	168,164	159,967
Basic net income (loss) per common share	\$ 1.53	\$ (1.39)	\$ (3.52)

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Diluted net income (loss) per common share is based on the weighted average number of common shares outstanding adjusted for the dilutive effect of common stock equivalents related to the restricted stock units, stock options, employee stock purchase plan and restricted stock. The dilutive effect of the common stock equivalents is calculated using the treasury stock method and expected proceeds on vesting of the restricted stock units and restricted stock, exercise of the stock options and purchases under the employee stock purchase plan. The following is a reconciliation of the Company's net income (loss) and weighted average common shares outstanding for calculating diluted net income (loss) per share:

	Years Ended December 31,		
	2010	2009	2008
Diluted			
Total income (loss) available to common shareholders, basic	\$ 267,738	\$ (233,083)	\$ (562,421)
Undistributed earnings allocated to participating securities	38	0	0
Total income (loss) available to common shareholders, diluted	<u>\$ 267,776</u>	<u>\$ (233,083)</u>	<u>\$ (562,421)</u>
Weighted average common shares outstanding, basic	174,833	168,164	159,967
Restricted stock units	264	0	0
Stock options	26	0	0
Employee stock purchase plan	1	0	0
Weighted average common shares outstanding, diluted	<u>175,124</u>	<u>168,164</u>	<u>159,967</u>
Diluted net income (loss) per common share	<u>\$ 1.53</u>	<u>\$ (1.39)</u>	<u>\$ (3.52)</u>

Options to purchase 1,781, 2,265 and 926 shares of the Company's common stock were excluded from the calculation of diluted common shares outstanding because they were anti-dilutive for the years ended December 31, 2010, 2009 and 2008, respectively. Additionally, 258 restricted stock units and 32 shares under the employee stock purchase plan at December 31, 2009 and 119 restricted stock units and 33 shares under the employee stock purchase plan at December 31, 2008 were excluded from the diluted net loss per share calculation because they were anti-dilutive. There were also 0, 459 and 1,134 stock options and 69, 144 and 148 restricted stock units which were excluded from the calculation of diluted common shares outstanding because certain performance conditions were not satisfied as of December 31, 2010, 2009 and 2008, respectively.

Note 18: Fair Values of Financial Instruments

The following methods and assumptions were used by the Company in estimating its fair value disclosures for financial instruments.

Current assets and current liabilities: The carrying amount reported in the Consolidated Balance Sheets for current assets and current liabilities, including revolving credit debt due to the short-term maturities and variable interest rates, approximates their fair values.

Preferred stock with mandatory redemption requirements and long-term debt: The fair values of preferred stock with mandatory redemption requirements and long-term debt are determined by a valuation model which is based on a conventional discounted cash flow methodology and utilizes assumptions of current market rates. As a majority of the Company's debts do not trade in active markets, the Company calculated a base yield curve using a risk-free rate (a U.S. Treasury securities yield curve) plus a credit spread that is based on the following two factors: an average of the Company's own publicly-traded debt securities and the current market rates for U.S. Utility BBB+ debt securities. The Company used these yield curve assumptions to derive a base yield and then adjusted the base yield for specific features of the debt securities of call features, coupon tax treatment and collateral.

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The carrying amounts (including fair value adjustments previously recognized in acquisition purchase accounting) and fair values of the financial instruments at December 31 are as follows:

	Carrying Amount	Fair Value
2010		
Preferred stocks with mandatory redemption requirements	\$ 23,939	\$ 26,759
Long-term debt (excluding capital lease obligations)	5,449,287	5,867,654
2009		
Preferred stocks with mandatory redemption requirements	\$ 24,164	\$ 26,257
Long-term debt (excluding capital lease obligations)	5,336,351	5,633,384

Fair Value Measurements

To increase consistency and comparability in fair value measurements, FASB guidance establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels as follows:

- Level 1—quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access as of the reporting date. Financial assets and liabilities utilizing Level 1 inputs include active exchange-traded equity securities, exchange-based derivatives, mutual funds and money market funds.
- Level 2—inputs other than quoted prices included within Level 1 that are directly observable for the asset or liability or indirectly observable through corroboration with observable market data. Financial assets and liabilities utilizing Level 2 inputs include fixed income securities, non-exchange-based derivatives, commingled investment funds not subject to purchase and sale restrictions and fair-value hedges.
- Level 3—unobservable inputs, such as internally-developed pricing models for the asset or liability due to little or no market activity for the asset or liability. Financial assets and liabilities utilizing Level 3 inputs include infrequently-traded non-exchange-based derivatives and commingled investment funds subject to purchase and sale restrictions.

Recurring Fair Value Measurements

The following table presents assets and liabilities measured and recorded at fair value on a recurring basis and their level within the fair value hierarchy as of December 31, 2010 and 2009, respectively:

Recurring Fair Value Measures	At Fair Value as of December 31, 2010			
	Level 1	Level 2	Level 3	Total
Assets:				
Restricted funds	\$ 120,784	—	—	\$ 120,784
Rabbi trust investments	—	\$ 1,552	—	1,552
Deposits	1,629	—	—	1,629
Total assets	<u>122,413</u>	<u>1,552</u>	<u>—</u>	<u>123,965</u>
Liabilities:				
Deferred compensation obligation	—	9,183	—	9,183
Mark-to-market derivative liability	—	898	—	898
Total liabilities	<u>—</u>	<u>10,081</u>	<u>—</u>	<u>10,081</u>
Total net assets (liabilities)	<u>\$ 122,413</u>	<u>\$ (8,529)</u>	<u>—</u>	<u>\$ 113,884</u>

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Recurring Fair Value Measures	At Fair Value as of December 31, 2009			
	Level 1	Level 2	Level 3	Total
Assets:				
Restricted funds	\$ 61,232	—	—	\$ 61,232
Rabbi trust investments	—	\$ 2,551	—	2,551
Deposits	11,612	—	—	11,612
Total assets	<u>72,844</u>	<u>2,551</u>	<u>—</u>	<u>75,395</u>
Liabilities:				
Deferred compensation obligation	—	8,881	—	8,881
Total liabilities	<u>—</u>	<u>8,881</u>	<u>—</u>	<u>8,881</u>
Total net assets (liabilities)	<u>\$ 72,844</u>	<u>\$ (6,330)</u>	<u>—</u>	<u>\$ 66,514</u>

Restricted funds—The Company's restricted funds primarily represent proceeds received from financings for the construction and capital improvement of facilities and from customers for future services under operations and maintenance projects. The proceeds of these financings are held in escrow until the designated expenditures are incurred. Restricted funds expected to be released within twelve months subsequent to year-end are classified as current.

Rabbi trust investments—The Company's rabbi trust investments consist primarily of fixed income investments from which supplemental executive retirement plan benefits are paid. The Company includes these assets in other long-term assets.

Deposits—Deposits includes escrow funds and certain other deposits held in trust. The Company includes cash deposits in other current assets. The December 31, 2009 balance included \$10,170 for an escrow account related to an agreement the Company's New Jersey regulated subsidiary had entered into with the City of Trenton, New Jersey to purchase certain assets of Trenton's water system located in four surrounding townships. The purchase agreement was contested in litigation with a group of Trenton residents, and ultimately put to a voter referendum. The result of the referendum was unfavorable to the Company, and as a result, the agreement to purchase the assets was terminated in June 2010. The escrow deposit, plus accrued interest, was returned to the Company on June 30, 2010.

Deferred compensation obligations—The Company's deferred compensation plans allow participants to defer certain cash compensation into notional investment accounts. The Company includes such plans in other long-term liabilities. The value of the Company's deferred compensation obligations is based on the market value of the participants' notional investment accounts. The notional investments are comprised primarily of mutual funds, which are based on observable market prices.

Mark-to-market derivative liability—The Company utilizes fixed-to-floating interest-rate swaps, typically designated as fair-value hedges, to achieve a targeted level of variable-rate debt as a percentage of total debt. The Company uses a calculation of future cash inflows and estimated future outflows, which are discounted, to determine the current fair value. Additional inputs to the present value calculation include the contract terms, counterparty credit risk, interest rates and market volatility.

See Note 15 for the Company's fair value of qualified pension and postretirement welfare plans' assets.

Non-recurring Fair Value Measurements

As discussed in Note 8, the Company recognized goodwill impairment charges of \$0, \$450,000 and \$750,000 for the years ended December 31, 2010, 2009 and 2008, respectively. The Company's goodwill valuation model includes significant unobservable inputs and falls within level 3 of the fair value hierarchy.

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Note 19: Operating Leases

The Company has entered into operating leases involving certain facilities and equipment. Rental expenses under operating leases were \$38,516 for 2010, \$37,004 for 2009 and \$36,200 for 2008. The operating leases for facilities will expire over the next 20 years and the operating leases for equipment will expire over the next five years. Certain operating leases have renewal options ranging from one to five years.

At December 31, 2010, the minimum annual future rental commitment under operating leases that have initial or remaining non-cancelable lease terms in excess of one year are \$25,706 in 2011, \$24,419 in 2012, \$17,225 in 2013, \$14,104 in 2014, \$10,805 in 2015 and \$105,539 thereafter.

The Company has a series of agreements with various public entities (the "Partners") to establish certain joint ventures, commonly referred to as "public-private partnerships." Under the public-private partnerships, the Company constructed utility plant, financed by the Company, and the Partners constructed utility plant (connected to the Company's property), financed by the Partners. The Company agreed to transfer and convey some of its real and personal property to the Partners in exchange for an equal principal amount of Industrial Development Bonds ("IDBs"), issued by the Partners under a state Industrial Development Bond and Commercial Development Act. The Company leased back the total facilities, including portions funded by both the Company and the Partners, under leases for a period of 40 years.

The leases related to the portion of the facilities funded by the Company have required payments from the Company to the Partners that approximate the payments required by the terms of the IDBs from the Partners to the Company (as the holder of the IDBs). As the ownership of the portion of the facilities constructed by the Company will revert back to the Company at the end of the lease, the Company has recorded these as capital leases. The lease obligation and the receivable for the principal amount of the IDBs are presented by the Company on a net basis. The carrying value of the facilities funded by the Company recognized as a capital lease asset was \$159,707 and \$160,259 at December 31, 2010 and 2009, respectively, which is presented within utility plant. The future payments under the lease obligations are equal to and offset by the payments receivable under the IDBs.

At December 31, 2010, the minimum annual future rental commitment under the operating leases for the portion of the facilities funded by the Partners that have initial or remaining non-cancelable lease terms in excess of one year included in the proceeding minimum annual rental commitments are \$3,551 in 2011, \$3,616 in 2012, \$3,615 in 2013 through 2015, and \$83,361 thereafter.

Note 20: Related Party Transactions

One of the Company's Directors was employed by an electrical utility that supplies electricity and electrical services to the Company's subsidiaries in Ohio, Pennsylvania, and New Jersey. The Company purchased, from various subsidiaries of this electrical utility, approximately \$8,558 and \$7,183 of such services in 2009 and 2008, respectively. The Director retired from that electrical utility effective March 31, 2010. The Company purchased, from various subsidiaries of this electrical utility, approximately \$3,225 of such services in the first quarter of 2010.

Note 21: Segment Information

The Company has two operating segments referred to as the Regulated Businesses and Market-Based Operations segments. The Company's chief operating decision maker regularly reviews the operating results of the Regulated Businesses and Market-Based Operations segments to assess segment performance and allocate resources. The evaluation of segment performance and the allocation of resources are based on several measures. The measure that is most consistent with that used by management is adjusted earnings before interest and income taxes from continuing operations ("Adjusted EBIT").

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The Regulated Businesses segment includes the Company's 23 utility subsidiaries that provide water and wastewater services to customers in 20 U.S. states. With the exception of one company, each of these public utility subsidiaries is subject to regulation by public utility commissions and local governments. In addition to providing similar products and services and being subject to the public utility regulatory environment, each of the regulated subsidiaries has similar economic characteristics, production processes, types and classes of customers and water distribution or wastewater collection processes. Each of these companies is also subject to both federal and state regulation regarding the quality of water distributed and the discharge of wastewater residuals.

The Market-Based Operations segment is comprised of market based businesses that provide a broad range of market based water and wastewater services and products including homeowner water and sewer line maintenance services, water and wastewater facility operations and maintenance services, granular carbon technologies and products for cleansing water and wastewater, wastewater residuals management services and water and wastewater facility engineering services.

The accounting policies of the segments are the same as those described in the summary of significant accounting policies (see Note 2). The Regulated Businesses and Market-Based Operations segment information includes intercompany costs that are allocated by American Water Works Service Company, Inc. and intercompany interest that is charged by AWCC, which are eliminated to reconcile to the consolidated results of operations. Inter-segment revenues, which are primarily recorded at cost plus mark-up that approximates current market prices, include carbon regeneration services and leased office space, furniture and equipment provided by the Company's market based subsidiaries to its regulated subsidiaries. Other includes corporate costs that are not allocated to the Company's subsidiaries, eliminations of inter-segment transactions, fair value adjustments and associated income and deductions related to the Acquisitions that have not been allocated to the segments for evaluation of segment performance and allocation of resource purposes. The adjustments related to the Acquisitions are reported in Other, as they are excluded from segment performance measures evaluated by management. The following table includes the Company's summarized segment information:

	As of or for the Year Ended December 31, 2010			
	Regulated Businesses	Market-Based Operations	Other	Consolidated
Net operating revenues	\$ 2,424,186	\$ 311,835	\$ (25,344)	\$ 2,710,677
Depreciation and amortization	327,327	7,431	19,892	354,650
Total operating expenses, net	1,707,060	287,924	(32,398)	1,962,586
Adjusted EBIT(1)	721,213	26,983		
Total assets	12,275,280	241,763	1,562,730	14,079,773
Capital expenditures	758,150	7,486	0	765,636

	As of or for the Year Ended December 31, 2009			
	Regulated Businesses	Market-Based Operations	Other	Consolidated
Net operating revenues	\$ 2,207,290	\$ 257,710	\$ (24,297)	\$ 2,440,703
Depreciation and amortization	313,400	5,871	15,907	335,178
Impairment charge	0	0	450,000	450,000
Total operating expenses, net	1,617,815	238,072	411,207	2,267,094
Adjusted EBIT(1)	591,606	21,264		
Total assets	11,659,525	247,594	1,545,532	13,452,651
Capital expenditures	779,428	5,837	0	785,265

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	As of or for the Year Ended December 31, 2008			
	Regulated Businesses	Market-Based Operations	Other	Consolidated
Net operating revenues	\$ 2,082,740	\$ 272,186	\$ (17,998)	\$ 2,336,928
Depreciation and amortization	296,318	5,858	10,600	312,776
Impairment charge	0	0	750,000	750,000
Total operating expenses, net	1,554,731	248,425	720,668	2,523,824
Adjusted EBIT(1)	531,774	26,307		
Total assets	10,941,133	244,891	2,045,794	13,231,818
Capital expenditures	1,005,360	3,446	0	1,008,806

- (1) Management evaluates the performance of its segments and allocates resources based on several factors, of which the primary measure is Adjusted EBIT. Adjusted EBIT does not represent cash flows for periods presented and should not be considered as an alternative to net income as an indicator of the Company's operating performance or as an alternative to cash flows as a source of liquidity. Adjusted EBIT as defined by the Company may not be comparable with Adjusted EBIT as defined by other companies.

The following table reconciles Adjusted EBIT, as defined by the Company, to income (loss) before income taxes:

	For the Year Ended December 31, 2010		
	Regulated Businesses	Market-Based Operations	Total Segments
Adjusted EBIT	\$ 721,213	\$ 26,983	\$ 748,196
Add:			
Allowance for other funds used during construction	10,003	—	10,003
Allowance for borrowed funds used during construction	6,284	—	6,284
Less:			
Interest, net	(249,045)	1,576	(247,469)
Amortization of debt expense	(4,001)	0	(4,001)
Segments income before income taxes	\$ 484,454	\$ 28,559	513,013
Interest, net			(67,574)
Other			3,997
Income before income taxes			<u>\$ 449,436</u>

	For the Year Ended December 31, 2009		
	Regulated Businesses	Market-Based Operations	Total Segments
Adjusted EBIT	\$ 591,606	\$ 21,264	\$ 612,870
Add:			
Allowance for other funds used during construction	11,486	—	11,486
Allowance for borrowed funds used during construction	7,224	—	7,224
Less:			
Interest, net	(231,858)	3,005	(228,853)
Amortization of debt expense	(6,089)	0	(6,089)
Segments income before income taxes	\$ 372,369	\$ 24,269	396,638
Impairment charge			(450,000)
Interest, net			(67,692)
Other			9,389
Loss before income taxes			<u>\$ (111,665)</u>

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	For the Year Ended December 31, 2008		
	Regulated	Market-Based	Total Segments
	Businesses	Operations	
Adjusted EBIT	\$ 531,774	\$ 26,307	\$ 558,081
Add:			
Allowance for other funds used during construction	14,497	—	14,497
Allowance for borrowed funds used during construction	8,171	—	8,171
Less:			
Interest, net	(227,384)	2,958	(224,426)
Amortization of debt expense	(5,346)	0	(5,346)
Segments income before income taxes	\$ 321,712	\$ 29,265	350,977
Impairment charge			(750,000)
Interest, net			(60,729)
Other			9,158
Loss before income taxes			<u>\$ (450,594)</u>

Note 22: Unaudited Quarterly Data

The following table sets forth certain supplemental unaudited consolidated quarterly financial data for each of the four quarters in the period ended December 31, 2010 and 2009, respectively. The operating results for any quarter are not indicative of results that may be expected for a full year or any future periods.

	First	Second	Third	Fourth
	Quarter	Quarter	Quarter	Quarter
2010				
	(in thousands, except per share data)			
Operating revenues	\$ 588,053	\$ 671,223	\$ 786,946	\$ 664,455
Operating income (loss)	126,065	195,983	273,955	152,088
Net income (loss)	30,808	72,751	124,114	40,154
Basic and diluted income (loss) per common share	\$ 0.18	\$ 0.42	\$ 0.71	\$ 0.23
2009				
	(in thousands, except per share data)			
Operating revenues	\$ 550,170	\$ 612,740	\$ 679,956	\$ 597,837
Operating income (loss)	(335,370)	157,192	214,406	137,381
Net income (loss)	(413,079)	51,989	91,636	36,371
Basic and diluted income (loss) per common share	\$ (2.58)	\$ 0.32	\$ 0.52	\$ 0.21

Amounts may not sum due to rounding; per share amounts may not sum due to changes in shares outstanding during the year.

Operating income (loss) includes impairment loss of \$450,000 in the first quarter of 2009.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

American Water Works Company, Inc. maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in its reports filed or submitted under the Securities Exchange

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Act of 1934 ("the Exchange Act") is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding required disclosure.

Our management, including the Chief Executive Officer and the Chief Financial Officer, conducted an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) of the Exchange Act) as of December 31, 2010 pursuant to 15d-15(e) under the Exchange Act.

Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2010, our disclosure controls and procedures were effective at a reasonable level of assurance. Our disclosure controls and procedures are designed to provide reasonable assurance that the information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is a process designed by or under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that: (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management, including our Chief Executive Officer and the Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting, as of December 31, 2010, using the criteria described in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Based on our evaluation under the framework in *Internal Control—Integrated Framework* issued by COSO, our management concluded that our internal control over financial reporting was effective as of December 31, 2010.

The effectiveness of our internal control over financial reporting as of December 31, 2010 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report appearing in Part II, Item 8 of this Annual Report on Form 10-K.

ITEM 9B. OTHER INFORMATION

None.

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PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS OF THE REGISTRANT AND CORPORATE GOVERNANCE

The information required by this item and not given below, is incorporated by reference in the Company's Proxy Statement for the 2011 Annual Meeting of Stockholders, to be filed with the Securities and Exchange Commission within 120 days following the end of the fiscal year covered by this report, under the captions entitled "Nominees for Election as Directors," "Information Relative to the Board of Directors and Committees of the Board of Directors," "Section 16(a) Beneficial Ownership Reporting Compliance," and "Code of Ethics and Corporate Governance Guidelines."

We have adopted a Code of Ethics, which applies to directors and employees. The full text of the Code of Ethics is publicly available on our website at <http://www.amwater.com>. We intend to post on our website any amendments to certain provisions of our Code of Ethics and any waivers of such provisions granted to principal officers.

Name	Age	Office and Employment During Last Ten Years
Jeffrey Sterba	55	<p>Mr. Sterba has been our President and Chief Executive Officer since August 2010. Prior to joining American Water, Mr. Sterba served as Chairman and CEO of PNM Resources, Inc., the parent company of PNM, Texas-New Mexico Power Company (TNMP) and First Choice Power, from 2000 until March 2010. He currently serves as Non-Executive Chairman of PNM Resources. Since joining PNM in 1977, he held a succession of positions including Executive Vice President and Chief Operating Officer, Senior Vice President Bulk Power Services, Senior Vice President Asset Restructuring, Senior Vice President Retail Electric & Water Services and Vice President Revenue Management. From 1998 to 2000, Mr. Sterba was Executive Vice President of United States Enrichment Corporation (USEC), a global energy company headquartered in Maryland.</p> <p>Mr. Sterba is a nationally recognized thought leader in the area of energy policy, climate change legislation, renewable energy, and sustainability. He has served as the chair of Edison Electric Institute, the national association of shareholder owned utilities, and chair of the Electric Power Research Institute, a non-profit center for energy and environment research. He serves on the board of directors of the Meridian Institute and is a member of the Business Environmental Leadership Council for the Pew Center on Global Climate Change. Mr. Sterba also previously served on the board of directors of the U.S. Chamber of Commerce.</p>

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Name	Age	Office and Employment During Last Ten Years
Ellen C. Wolf	57	Ms. Wolf has been our Senior Vice President and Chief Financial Officer since March 2006 and served as a member of our board of directors from March 2006 until August 2007. Ms. Wolf's career began in the accounting firm of Deloitte Haskins & Sells. From 1987 through 1999, Ms. Wolf held various positions in corporate accounting, finance and business development for Bell Atlantic and several of its subsidiaries, including Bell Atlantic Enterprises International, Bell Atlantic Mobile, and Bell Atlantic Corporation. From 1999 through 2003, Ms. Wolf was employed by us as Vice President and Chief Financial Officer. Prior to re-joining us, Ms. Wolf served as Senior Vice President and Chief Financial Officer of USEC Inc., a global energy company, a position she held beginning in December 2003. Currently, Ms. Wolf also serves on the board of directors of Airgas, Inc., where she serves on the audit committee. In addition, Ms. Wolf is on the board of directors of the Philadelphia Zoo.
Walter J. Lynch	48	Mr. Lynch has been our President and Chief Operating Officer of Regulated Operations since March 2010, and President of Regulated Operations since July 2008. Prior to that date, he served as Executive Vice President, Eastern Division. He also served as president of New Jersey- American Water Company, Inc., Long Island Water Corporation and our Northeast Region. Mr. Lynch joined us in 2001 and served as President of our Products and Services Group, where he was responsible for overseeing our non-regulated businesses. Prior to this, he was President of the Southwest Region of American Water Services. Mr. Lynch has more than 20 years of experience in engineering, sales and marketing, operations and business development. Before joining us, he was involved with various start-up and growth organizations in the environmental industry. Mr. Lynch worked for Mobil Oil Corporation following his departure from the United States Army where he attained the rank of Captain. In addition, Mr. Lynch is on the board of directors of the National Association of Water Companies and serves on its Executive Committee.
Kellye L. Walker	44	Ms. Walker has been our Chief Administrative Officer since September 2010, and Senior Vice President, General Counsel and Secretary since January 2010. From February 2007 to June 2009, Ms. Walker served as Senior Vice President and General Counsel of Diageo North America, Inc., the largest operating company of Diageo plc. From February 2003 to December 2006, Ms. Walker served as Senior Vice President, General Counsel and Secretary of BJ's Wholesale Club, Inc., a leading warehouse club operator. Ms. Walker also served as a partner with the law firm of Hill & Barlow in Boston, Massachusetts, and as a partner and/or associate with the law firms of Chaffe, McCall, Phillips, Toler & Sarpy in New Orleans, Louisiana, and Boulton, Cummings, Connors & Berry in Nashville, Tennessee.

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Name	Age	Office and Employment During Last Ten Years
Sean G. Burke	55	Mr. Burke has been our Vice President Human Resources since September 2010. From December 2007 until September 2010, Mr. Burke was Senior Vice President Human Resources. From 2005 to December 2007, Mr. Burke was the principal of Executive Alignment, LLC, an executive assessment and executive compensation consulting practice, in Falmouth, Maine. From 1988 to 2005, Mr. Burke held executive positions at American Ref-Fuel Company, in Houston, Texas and Montvale, New Jersey, responsible for oversight of the Human Resources function. Earlier, he held leadership positions with other companies including Air Products and Chemicals Inc., Frito-Lay and National Steel Corp.
Mark Chesla	51	Mr. Chesla has been our Vice President and Controller since November 2007. From 2001 to November 2007, Mr. Chesla was Vice President and Controller of Oglethorpe Power Corporation, in Atlanta, Georgia, where he served as that company's chief accounting officer. In this capacity he was responsible for all aspects of the accounting, internal financial management, regulatory and SEC reporting functions. Mr. Chesla was Vice President, Administration/Controller of SouthStar Energy Services LLC, in Atlanta, Georgia, from 1998 to 2001. Earlier, he held management positions with several other companies, including Piedmont Natural Gas Co., Inc., Aegis Technologies, Inc., Deloitte & Touche LLP and Carolina Power & Light Company.
Mark F. Strauss	59	Mr. Strauss has been our Senior Vice President of Corporate Strategy and Business Development since September 2010. From December 2006, until his new appointment in September 2010, Mr. Straus was President of American Water Enterprises, managing our Market-Based Operations. Previously, Mr. Strauss was President and Chief Executive Officer of our Applied Water Management Group, which provides customized water and wastewater management solutions to real estate developers, industrial clients and small to mid-sized communities nationwide. Mr. Strauss joined Applied Water Management Group in 1997 as Corporate Counsel and Secretary. He was promoted to Chief Operating Officer in 2002, a position he held until his appointment as Division President and Chief Executive Officer in 2003. Earlier, he served as Vice President and General Counsel of Vizzoni Brothers Construction, Inc. Mr. Strauss serves as a director of Skylands Community Bank. Mr. Strauss was also an associate at the law firms of Ozzard, Rizzolo, Klein, Mauro & Savo and Toolan, Romond, Abbot and Domenichetti.
Nick O. Rowe	53	Mr. Rowe has been Senior Vice President of our Eastern Division since January 2009. From 2006 to January 2010, he was President of Kentucky- American Water Company. From 2005 to 2006, he served as Vice President of Service Delivery Operations for the Southeast Region of Kentucky-American Water Company. From 2003 to 2005, he served as Vice President, Business Change for American Water in New Jersey and from 1998 to 2003, Mr. Rowe was Vice President of Operations for Kentucky-American Water Company, and from 1987 to 1998, he served in various management positions with responsibility for the day-to-day operations of American Water facilities in several states including Virginia, West Virginia, Maryland, Pennsylvania, Kentucky, Tennessee, North Carolina, Georgia and Florida. Mr. Rowe is involved with various regulatory agencies and civic and professional organizations. He also serves on the Executive Board of the Kentucky Chamber of Commerce, is a member of the American Water Works Association and the National Association of Water Companies.

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Name	Age	Office and Employment During Last Ten Years
Kathy L. Pape	58	Ms. Pape has been President of Pennsylvania-American Water Company since July 2007. From 1999 to 2007, Ms. Pape served as Senior Vice President, Treasurer and Rate Counsel for Aqua America, Inc. with responsibility for all financing activities, billing, rates and regulatory filings, budgeting and long-range planning. From 1994 to 1999, Ms. Pape was employed by us as Regional Counsel and Finance Manager, where her responsibilities included rates and regulatory affairs, finance, budgeting and customer service for 10 states. Prior to 1994, Ms. Pape was Vice President and Corporate Counsel for General Waterworks Management and Service Co., Assistant Counsel to the Pennsylvania Public Utility Commission and Assistant Consumer Advocate for the Pennsylvania Office of Consumer Advocate.
William D. Rogers	50	Mr. Rogers has been our Vice President and Treasurer since October 2010. From 2005 to 2010, he was Chief Financial Officer for NV Energy, an investor-owned utility in Las Vegas, Nevada. From 2005 to 2007, he also served as NV Energy's Vice President of Finance, Risk and Tax and as Corporate Treasurer. Before joining NV Energy, Mr. Rogers was a managing director of capital markets for both Merrill Lynch and JPMorgan Chase in New York.
John R. Bigelow	56	Mr. Bigelow has been President of New Jersey-American Water Company, Inc. since 2007. Mr. Bigelow joined American Water in 1994 and held a number of senior management positions during his tenure, including American Water's Senior Vice President of Regulatory Programs and Enterprise Risk Management. From December 2003 to February 2006, Mr. Bigelow served as American Water's Chief Financial Officer, Vice President and Treasurer of New Jersey American Water, and Director, Vice President and Treasurer of New Jersey American Resources Co. Mr. Bigelow began his career with GPU System Companies, where he spent 18 years in various leadership roles in the finance area. Mr. Bigelow is also a board and/or committee member of Drexel MBA Career Services Advisory Board, New Jersey-American Water Company, Inc., William J. Hughes Center for Public Policy, and NJUA (New Jersey Utilities Association).
Sharon Cameron	54	Ms. Cameron has been president of American Water Enterprises, the market based products and services division of American Water, since September 2010. She also serves as President of American Water Resources, Inc., a business she has been leading since 2002. Prior to joining American Water, Ms. Cameron was principal of Marketing Solutions, a marketing consulting firm she launched in 1998, and was a consultant to American Water on the Homeowner Services business. Previously, Ms. Cameron served as vice president of Marketing and Sales at Comcast Corporation (New Jersey), senior marketing manager at Menley & James Laboratories, and marketing manager at Campbell Soup Company.

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Name	Age	Office and Employment During Last Ten Years
David K. Baker	54	Mr. Baker has been the Senior Vice President of our Western Division since March 2010. Mr. Baker joined American Water in 1995, and most recently served as President of both Indiana-American Water and Michigan-American Water from January 2007 until March 2010. His previous leadership roles included serving as Vice President of Business Development for the Central Region and Eastern Division Manager for Illinois-American Water. Prior to joining American Water, Mr. Baker served as Division President/General Manager of Waste Management of Kentucky for ten years.

ITEM 11. EXECUTIVE COMPENSATION

Information required by this item is incorporated by reference in the Company's Proxy Statement for the 2011 Annual Meeting of Stockholders, under the captions entitled "Executive Compensation," "Compensation Discussion and Analysis," "Compensation Committee Report" and "Director Compensation."

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information required by this item setting forth the security ownership of certain beneficial owners and management is incorporated by reference in the Company's Proxy Statement for the 2011 Annual Meeting of Stockholders, under the caption entitled "Security Ownership of Principal Stockholders and Management" and the "Equity Compensation Plan" table appearing under the caption "Long-Term Equity Incentive Compensation."

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

Information required by this item is incorporated by reference in the Company's Proxy Statement for the 2011 Annual Meeting of Stockholders, under the captions entitled "Certain Relationships and Related Transactions" and "Director Independence."

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information required by this item is incorporated by reference in the Company's Proxy Statement for the 2011 Annual Meeting of Stockholders, under the caption entitled "Independent Registered Public Accounting Fees and Services."

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Financial statement schedules have been omitted since they are either not required, not applicable as the information is otherwise included in the financial statements or notes thereto.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 25th day of February, 2011.

AMERICAN WATER WORKS COMPANY, INC.

BY: _____ /s/ JEFFRY STERBA
Jeffry Sterba
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed on the 25th day of February, 2011 by the following persons in the capacities indicated.

<p>_____/s/ JEFFRY STERBA Jeffry Sterba President and Chief Executive Officer (Principal Executive Officer and Director)</p>	<p>_____/s/ RICHARD R. GRIGG Richard R. Grigg (Director)</p>
<p>_____/s/ ELLEN C. WOLF Ellen C. Wolf Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)</p>	<p>_____/s/ JULIA L. JOHNSON Julia L. Johnson (Director)</p>
<p>_____/s/ GEORGE MACKENZIE George MacKenzie (Director)</p>	<p>_____/s/ WILLIAM J. MARRAZZO William J. Marrazzo (Director)</p>
<p>_____/s/ MARTHA CLARK GOSS Martha Clark Goss (Director)</p>	<p>_____/s/ STEPHEN P. ADIK Stephen P. Adik (Director)</p>
<p>_____/s/ JULIE A. DOBSON Julie A. Dobson (Director)</p>	

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EXHIBIT INDEX

Exhibit Number	Exhibit Description
2.1	Agreement and Plan of Merger, dated as of September 16, 2001, among RWE Aktiengesellschaft, Thames Water Aqua Holdings GmbH, Apollo Acquisition Company and American Water Works Company, Inc. (incorporated by reference to Exhibit 2.1 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
2.2	Separation Agreement by and among RWE Aktiengesellschaft and American Water Works Company, Inc. (incorporated by reference to Exhibit 2.2 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
3.1	Restated Certificate of Incorporation of American Water Works Company, Inc. (incorporated by reference to Exhibit 3.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed November 6, 2008.)
3.2	Amended and Restated Bylaws of American Water Works Company, Inc. (incorporated by reference to Exhibit 3.2 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed January 5, 2010).
4.1	Indenture, dated as of October 22, 2007 between American Water Capital Corp. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.4 to American Water Capital Corp.'s Registration Statement on Form S-4, File No. 333-148284, and American Water Works Company, Inc.'s Registration Statement on Form S-4, File No. 333-148284-01, filed December 21, 2007).
4.2	Indenture between American Water Capital Corp. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed December 3, 2008).
4.3	Indenture, dated as of December 4, 2009, between American Water Capital Corp. and Wells Bank, National Association (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Form 8-K, file No. 001-34028, filed December 3, 2010).
4.4	Note Purchase Agreement, as amended, dated as of December 21, 2006, by and between American Water Capital Corp. and the Purchasers named therein for purchase of \$101,000,000 5.39% Series A Senior Notes due 2013, \$37,500,000 5.52% Series B Senior Notes due 2016, \$329,500,000 5.62% Series C Senior Notes due 2018 and \$432,000,000 5.77% Series D Senior Notes due 2021 (incorporated by reference to Exhibit 4.2 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
4.5	Note Purchase Agreement, as amended, dated as of March 29, 2007, by and between American Water Capital Corp. and the Purchasers named therein for purchase of \$100,000,000 5.62% Series E Senior Notes due 2019 and \$100,000,000 5.77% Series F Senior Notes due 2022 (incorporated by reference to Exhibit 4.3 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
4.6	Note Purchase Agreement, dated May 15, 2008, by and between AWCC and the Purchasers named therein for purchase of \$110,000,000 6.25% Series G Senior Notes due 2018 and \$90,000,000 6.55% Series H Senior Notes due 2023 (incorporated herein by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed on May 19, 2008).

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Exhibit Number	Exhibit Description
9.1	Exchange and Registration Rights Agreement, dated as of October 22, 2007, between American Water Capital Corp., American Water Works Company, Inc. and Citigroup Global Markets Inc, Credit Suisse Securities (USA) LLC, Goldman, Sachs & Co. and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representatives of the several purchasers (incorporated by reference to Exhibit 4.4 to American Water Capital Corp.'s Registration Statement on Form S-4, File No. 333-148284, and American Water Works Company, Inc.'s Registration Statement on Form S-4, File No. 333-148284-01, filed December 21, 2007).
9.2	Registration Rights Agreement by and among American Water Works Company, Inc., RWE Aktiengesellschaft and RWE Aqua Holdings GmbH (incorporated by reference to Exhibit 9.1 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
10.1	Agreement between George W. Patrick and American Water Works Company, Inc., dated August 27, 1999 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2A	Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated January 1, 2000 (incorporated by reference to Exhibit 10.2A to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2B	First Amendment to Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated May 24, 2004 (incorporated by reference to Exhibit 10.2B to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2C	Second Amendment to Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated July 27, 2005 (incorporated by reference to Exhibit 10.2C to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2D	Third Amendment to Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated December 19, 2008 (incorporated by reference to Exhibit 10.2D to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.3	Credit Agreement, dated as of September 15, 2006, among American Water Capital Corp., the Lenders identified therein and JPMorgan Chase Bank, N.A (incorporated by reference to Exhibit 10.1 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007 and American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 4, 2010).
10.4	Support Agreement, as subsequently amended, dated June 22, 2000, by and between American Water Works Company, Inc. and American Water Capital Corp. (incorporated by reference to Exhibit 10.3 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.5	Employment Agreement between Ellen C. Wolf and American Water Works Company, Inc., dated February 15, 2008 (incorporated by reference to Exhibit 10.5 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
10.6	Employment Agreement between Jeffrey E. Sterba and American Water Works Company, Inc., dated August 15, 2010 (incorporated by reference to Exhibit 99.1 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed August 17, 2010).

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Exhibit Number	Exhibit Description
10.7	Separation and General Release Agreement between American Water Works Company, Inc. and Donald L. Correll, dated August 15, 2010 (incorporated by reference to Exhibit 99.2 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed August 17, 2010).
10.8	Amended and Restated American Water Works Company, Inc. Executive Retirement Plan, dated as of March 1, 2007 (incorporated by reference to Exhibit 10.8 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.9	Amended and Restated American Water Works Company, Inc. Deferred Compensation Plan, dated as of January 1, 2001 (incorporated by reference to Exhibit 10.9 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.10	Settlement Agreement by and between California American Water Company and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, dated as of June 29, 2006 (incorporated by reference to Exhibit 10.12 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
10.11	American Water Works Company, Inc. Nonqualified Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.15 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 31, 2008).
*10.12	Amendment 2010-1 to the American Water Works Company, Inc. and Its Designated Subsidiaries Nonqualified Employee Stock Purchase Plan, dated as of February 8, 2011.
10.13	American Water Works Company, Inc. Executive Severance Policy, dated as of December 16, 2008 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed November 3, 2010).
10.14	2006 American Water Senior Management Annual Incentive Plan (incorporated by reference to Exhibit 10.21 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.15	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan (incorporated by reference to Exhibit 10.22 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 31, 2008).
10.16	Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and its Designated Subsidiaries (incorporated by reference to Exhibit 10.23 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 26, 2008).
10.17	Nonqualified Deferred Compensation Plan for Non-Employee Directors of American Water Works Company, Inc. (incorporated by reference to Exhibit 10.24 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 26, 2008).
10.18	2008 American Water Senior Management Annual Incentive Plan (incorporated by reference to Exhibit 10.25 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed April 15, 2008).
10.19	2009 American Water Senior Management Annual Incentive Plan (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009).

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Exhibit Number	Exhibit Description
10.20	2010 American Water Annual Incentive Plan Highlights Brochure (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 4, 2010).
10.21	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Restricted Stock Unit Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.26 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed on May 6, 2008).
10.22	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Restricted Stock Unit Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.27 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed on May 6, 2008).
10.23	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Restricted Stock Unit Grant Form for Directors (incorporated by reference to Exhibit 10.28 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed on May 6, 2008).
10.24	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Restricted Stock Unit Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.29 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.25	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Restricted Stock Unit Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.30 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.26	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Nonqualified Stock Option Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.31 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.27	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Nonqualified Stock Option Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.32 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.28	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Nonqualified Stock Option Grant Form for Directors (incorporated by reference to Exhibit 10.33 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.29	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Nonqualified Stock Option Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.34 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.30	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Nonqualified Stock Option Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.34 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.31	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Performance Stock Unit Grant Form for ML1-ML3B Employees (incorporated by reference to Exhibit 10.36 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 27, 2009).
10.32	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Performance Stock Unit Grant Form for ML4-ML5 Employees (incorporated by reference to Exhibit 10.37 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 27, 2009).

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Exhibit Number	Exhibit Description
10.33	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Nonqualified Stock Option Grant Form for ML1-ML3B Employees (incorporated by reference to Exhibit 10.4 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009).
10.34	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Nonqualified Stock Option Grant Form for ML4-ML5 Employees (incorporated by reference to Exhibit 10.5 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009).
10.35	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Stock Unit Grant Form for Non-Employee Directors (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 6, 2009).
10.36	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Performance Stock Unit Grant Form A for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.37	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Performance Stock Unit Grant Form B for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.38	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Performance Stock Unit Grant Form C for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.39	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Nonqualified Stock Option Grant for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.40	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Form of Stock Unit Grant Agreement for Non-Employee Directors (incorporated by reference to Exhibit 10.3 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 4, 2010).
10.41	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan September 2010 Form of Stock Unit Grant Agreement for Non-Employee Directors (incorporated by reference to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed November 3, 2010)
10.42	Amendment to the Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and its Designated Subsidiaries, effective as of August 1, 2008 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed November 6, 2008.)
10.43	Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as amended and restated, effective as of January 1, 2009 (incorporated by reference to Exhibit 10.37 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-155245, filed November 18, 2008).
10.44	Nonqualified Deferred Compensation Plan for Non-Employee Directors of American Water Works Company, Inc., as amended and restated, effective as of January 1, 2009 (incorporated by reference to Exhibit 10.38 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-155245, filed November 18, 2008).

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Exhibit Number	Exhibit Description
10.45	Amendment to the Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and its Designated Subsidiaries, effective as of February 6, 2009 (incorporated by reference to Exhibit 10.7 to American Water Works Company, Inc. Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009)
10.46	Amendment to the Nonqualified Deferred Compensation Plan for Non-Employee Directors of American Water Works Company, Inc., effective as of February 6, 2009 (incorporated by reference to Exhibit 10.8 to American Water Works Company, Inc. Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009)
10.47	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Stock Unit Grant Form for Non-Employee Directors (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 6, 2009).
*21.1	Subsidiaries of American Water Works Company, Inc.
*23.1	Consent of PricewaterhouseCoopers LLP.
*31.1	Certification of Jeffrey E. Sterba, President and Chief Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act.
*31.2	Certification of Ellen C. Wolf, Senior Vice President and Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act.
*32.1	Certification of Jeffrey E. Sterba, President and Chief Executive Officer, pursuant to Section 906 of the Sarbanes-Oxley Act.
*32.2	Certification of Ellen C. Wolf, Senior Vice President and Chief Financial Officer, pursuant to Section 906 of the Sarbanes-Oxley Act.
101	The following financial statements from American Water Works Company, Inc.'s Annual Report on Form 10-K for the period ended December 31, 2010, filed with the Securities and Exchange Commission on February 25, 2011, formatted in XBRL (eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets; (ii) the Consolidated Statements of Operations; (iii) the Consolidated Statements of Cash Flows; (iv) the Consolidated Statement of Changes in Stockholders' Equity; (v) the Consolidated Statements of Comprehensive Income and (vi) the Notes to Consolidated Financial Statements.

* filed herewith



AMERICAN WATER

**AMENDMENT 2010-1
TO THE
AMERICAN WATER WORKS COMPANY, INC.
AND ITS DESIGNATED SUBSIDIARIES
NONQUALIFIED EMPLOYEE STOCK PURCHASE PLAN**

Pursuant to the authority reserved to the American Water Works Company, Inc. Board of Directors (the "Board") under Section 5.06 of the American Water Works Company, Inc. and Its Designated Subsidiaries Nonqualified Employee Stock Purchase Plan (the "Plan"), the Board hereby amends the Plan as follows:

1. Effective for the first Purchase Period (as defined in the Plan) that commences after January 2011, and each Purchase Period thereafter, Section 1.09(b) of the Plan is hereby amended to delete clause (iii), and to renumber clauses (iv) and (v) as (iii) and (iv), respectively.
2. In all respects not modified by this Amendment 2010-1, the Plan is hereby ratified and confirmed.

IN WITNESS WHEREOF, and as evidence of the adoption of this Amendment 2010-1 to the Plan set forth herein, the Board has caused this instrument to be executed this 8th day of February, 2011.

American Water Works Company, Inc. Board of Directors

By: /s/ Thomas S. Wyatt

Thomas S. Wyatt
Asst. Secretary

American Water Works Company, Inc. and its Subsidiaries Ownership Schedule

As of February 23, 2011

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
AAET, Inc.	Corporation	Delaware	100% held through American Water Enterprises, Inc.	General Partner of AAET, L.P.
AAET, L.P.	Limited Partnership	Delaware	98% held through American Water Enterprises, Inc.; 2% held through AAET, Inc.	Supplies carbon regeneration materials to water facilities in the US
ACUS Corporation	Corporation	Texas	100% held through TWH LLC	Inactive
AmericanAnglian Canada Company	Corporation	Canada	100% held through American Water Resources, Inc.	Water and/or wastewater management and operating services (IA)
American Lake Water Company	Corporation	Illinois	100% held through American Water	Water pipeline company
American Water – Acciona Agua LLC	Limited Liability Company	Delaware	50% held through American Water Enterprises, Inc.; 50% outside ownership by Acciona Agua Corporation (USA)	Joint Venture entity, which contracts with Tampa Bay to remedy, operate and manage the Tampa Bay Seawater Desalination Plant.
American Water Canada Corp.	Corporation	Ontario	100% held through American Water Enterprises Holding, Inc.	Holds contracts for operation and maintenance of water and/or wastewater facilities in Canada
American Water Capital Corp.	Corporation	Delaware	100% held through American Water	Funding vehicle for AWW and its utility subsidiaries
American Water Carbon Services Corp.	Corporation	Ontario	100% held through American Water Canada Corp.	Supplies carbon regeneration materials to water facilities in Canada
American Water Engineering, Inc.	Corporation	New Jersey	100% held through American Water (USA), Inc.	Inactive
American Water Enterprises Holding, Inc.	Corporation	Delaware	100% held through American Water Enterprises, Inc.	Holding company for many AWE subsidiaries in the US; Holds contract to operate and maintain Jefferson Parish, LA East Bank wastewater treatment plant
American Water Enterprises, Inc.	Corporation	Delaware	100% held through American Water	Holding company for the non-regulated business; Has some contracts due to historical reasons
American Water Industrial Operations, Inc.	Corporation	Texas	100% held through American Water Industrials, Inc.	Inactive
American Water Industrials, Inc.	Corporation	Delaware	100% held through American Water Enterprises, Inc.	Holding company
American Water Operations and Maintenance, Inc.	Corporation	Texas	100% held through American Water (USA), Inc.	Primary entity for contracts for design, building and/or operation of water and wastewater facilities and operations, maintenance and management of water and wastewater facilities in the US
American Water Resources, Inc.	Corporation	Virginia	100% held through American Water	a) Homeowner Services Group – water line and sewer line protection programs b) Carbon Services – reactivates spent carbon c) Leasing (NOT managed by AWEG)
American Water Resources Holdings, Inc.	Corporation	Delaware	Wholly owned subsidiary of American Water (USA), Inc.	Holding company

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
American Water Resources of Texas, Inc.	Corporation	Delaware	Wholly owned subsidiary of American Water Resources Holdings, Inc.	Entity allows for the sale of service contracts in the state of Texas.
American Water Services CDM, Inc.	Corporation	Washington	80% held through American Water (USA), Inc.; 20% outside common stock held by Camp Dresser and McKee, Inc.	Joint venture operating the Tolt water treatment facility located in Seattle, WA
American Water Services Underground Infrastructure Corp.	Corporation	Ontario	100% held through American Water Canada Corp.	Current contracts for closed circuit television inspection of water and/or wastewater pipes
American Water (USA), Inc.	Corporation	Delaware	100% held through American Water Enterprises Holding, Inc.	Holding company
American Water Works Company, Inc.	Corporation	Delaware	100% held through AMERICAN WATER	Water and Wastewater-related product and services
American Water Works Service Company, Inc.	Corporation	Delaware	100% held through American Water	Professional water and/or wastewater services
Applied Wastewater Services, Inc.	Corporation	New Jersey	100% held through Applied Water Management, Inc.	Current projects for engineering, construction operations and services primarily in wastewater
Applied Water Management of Delaware, Inc.	Corporation	Delaware	100% held through Applied Water Management, Inc.	Current contracts for water and/or wastewater services
Applied Water Management, Inc.	Corporation	New Jersey	100% held through E'town LLC	Current projects for engineering, construction operations and services primarily in wastewater
Arizona – American Water Company	Corporation	Arizona	100% held through American Water	Water and/or wastewater utility
American Water Services LLC	Limited Liability Company	New Jersey	100% held through American Water	Holding Company
Bluefield Valley Water Works Company	Corporation	Virginia	100% held through West Virginia-American Water Company	Water and/or wastewater utility
Braemar Acres Limited	Corporation	Ontario	100% held through Uniflo Limited	Currently owns real property for storage of lime materials used by Terratec Environmental Ltd. in Canada
California – American Water Company	Corporation	California	100% held through American Water	Water and/or wastewater utility
EMC American Water Canada, Inc.	Corporation	Canada (Federal Corporation)	100% held through American Water Canada Corp.	Operation and maintenance of water and wastewater facilities in Canada.
E'town LLC	Limited liability company	Delaware	100% held through TWH LLC	Holding company
E'town Properties, Inc.	Corporation	Delaware	100% held through American Water Works Company, Inc.	Set up by Elizabethtown Water Company entity to hold real estate for development and/or sale
E'town Services, LLC	Limited Liability Company	New Jersey	100% held through AWE	Holds wastewater services contract among E'town Corp, Elizabeth, NJ and the Union County Improvement Authority
Edison Water Company	Corporation	New Jersey	100% held through AWE	Manage water contract for Township of Edison, NJ

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
EMC Batesville, LLC	Limited liability company	Missouri	100% held through EMC	Single purpose entity formed for improvements made to, and subsequent operation of, a wastewater treatment plant and water reuse system located in Batesville, Arkansas, as well as for the lease of related equipment used thereon.
EMC of St. Charles County, LLC	Limited liability company	Missouri	100% held through EMC	Regulated sewer utility providing sewer services to a residential development located in St. Charles County, Missouri.
Environmental Management Corp.	Corporation	New Jersey	100% held through AWE	Provides design, build and operation services for the water and wastewater assets of industrial firms and municipalities in the US and other countries.
Hawaii – American Water Company	Corporation	Nevada	100% held through American Water	Water and/or wastewater utility
Horseshoe Carbons Incorporated	Corporation	Ontario	80% held through American Water Carbon Services Corp.; 20% outside common shares held by PICA, S.A.	Currently supplies carbon regeneration materials to water facility for one client in Canada
Hydro-Aerobics, Inc.	Corporation	Texas	100% held through TWH LLC	Designing, manufacturing wastewater equipment (IA)
Illinois – American Water Company	Corporation	Illinois	100% held through American Water (0.1% outside preferred stock)	Water and/or wastewater utility
Indiana – American Water Company	Corporation	Indiana	100% held through American Water	Water and/or wastewater utility
Iowa – American Water Company	Corporation	Delaware	100% held through American Water	Water and/or wastewater utility
Kentucky – American Water Company	Corporation	Kentucky	100% held through American Water	Water and/or wastewater utility
Laurel Oak Properties Corporation	Corporation	Delaware	100% held through American Water	Entity to hold real estate for development and/or sale
Liberty Water Company	Corporation	New Jersey	100% held through AWE	Manage water contract for City of Elizabeth, NJ
Long Island Water Corporation	Corporation	New York	100% held through American Water	Water and/or wastewater utility
Maryland – American Water Company	Corporation	Maryland	100% held through American Water	Water and/or wastewater utility
Michigan – American Water Company	Corporation	Michigan	100% held through American Water	Water and/or wastewater utility
Missouri – American Water Company	Corporation	Missouri	100% held through American Water	Water and/or wastewater utility
Mobile Residuals Management Inc.	Corporation	Ontario	100% held through American Water Canada Corp.	Inactive
Mobile Residuals Management (USA), Inc.	Corporation	Delaware	100% held through American Water (USA), Inc	Mobile biosolids and residuals management; Ongoing contracts in CA and NJ
New Jersey – American Water Company	Corporation	New Jersey	100% held through American Water	Water and/or wastewater utility

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
New Mexico – American Water Company	Corporation	New Mexico	100% held through American Water (.01% outside common stock)	Water and/or wastewater utility
Ohio – American Water Company	Corporation	Ohio	100% held through American Water	Water and/or wastewater utility
OMI/Thames Water Stockton, Inc.	Corporation	Delaware	50% held through TWNA, Inc. and 50% held through Operations and Management, Inc.	Water and/or wastewater services
Pennsylvania – American Water Company	Corporation	Pennsylvania	96.5% held through American Water (3.5% outside preferred stock)	Water and/or wastewater utility
Philip Automated Management Controls, Inc.	Corporation	Georgia	100% held through American Water (USA), Inc.	Inactive
Prism-Berlie (Windsor) Limited	Corporation	Ontario	100 % held through Terratec Environmental Ltd.	Holds contract to operate pelitizing facility in Windsor, Ontario
PWT Waste Solutions, Inc.	Corporation	Texas	100% held through TWH LLC	Water and/or wastewater services (IA)
Rialto Water Services, Inc.	Corporation	Delaware	100% held through American Water (USA)	General partner of Rialto Water Services, L.P. Percentage will fall below 50% if transaction completed as a concession.
Rialto Water Services, L.P.	Limited Partnership	Delaware	100% held through American Water (USA) and Rialto Water Services, Inc.	Rialto concession bid. Percentage will fall below 50% if transaction completed as a concession.
Tennessee – American Water Company	Corporation	Tennessee	99.89% held through American Water (0.11% outside preferred stock)	Water and/or wastewater utility
Terratec Environmental Ltd.	Corporation	Ontario	100% held through American Water Canada Corp.	Primary entity for holding contracts for biosolids management land application and disposal
Texas-American Water Company	Corporation	Texas	100% through American Water	Water and/or wastewater utility
TWH LLC	Limited Liability Company	Delaware	100% held through American Water	Holding company
TWNA, Inc. formerly Thames Water North America, Inc.	Corporation	Delaware	100% held through American Water	Water and/or wastewater services
UESG Holdings, Inc.	Corporation	Delaware	100% held through TWH LLC	Holding company
Uniflo Limited	Corporation	Ontario	100 % held through Terratec Environmental Ltd.	Holding company
Utility Management and Engineering, Inc.	Corporation	New Jersey	100% held through American Water Engineering, Inc.	Inactive
Virginia – American Water Company	Corporation	Virginia	100% held through American Water	Water and/or wastewater utility
West Virginia – American Water Company	Corporation	West Virginia	99.97% held through American Water (0.03% outside common stock)	Water and/or wastewater utility

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-168543 and 333-150381) and Form S-3 (Nos. 333-165624 and 333-158949) of American Water Works Company, Inc. of our report dated February 25, 2011 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Philadelphia, Pennsylvania
February 25, 2011

American Water Works Company, Inc. (AWK)

10-K

Annual report pursuant to section 13 and 15(d)

Filed on 02/28/2012

Filed Period 12/31/2011

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 10-K

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2011**

OR

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____
Commission file: number 001-34028**

AMERICAN WATER WORKS COMPANY, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)
1025 Laurel Oak Road, Voorhees, NJ
(Address of principal executive offices)

51-0063696
(I.R.S. Employer
Identification No.)
08043
(Zip Code)

(856) 346-8200

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common stock, par value \$0.01 per share	New York Stock Exchange, Inc.

Securities registered pursuant to Section 12(g) of the Act:

None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "small reporting company" in Rule 12(b)-2 of the Exchange Act.:

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Small reporting company	<input type="checkbox"/>

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter.

Common Stock, \$0.01 par value—\$5,166,650,955 as of June 30, 2011.

Indicate the number of shares outstanding of each of the registrant's classes of common stock as of the latest practicable date.

Common Stock, \$0.01 par value per share—175,717,124 shares, as of February 21, 2012.

DOCUMENTS INCORPORATED BY REFERENCE

(1) Portions of the Company's Proxy Statement for the Company's 2012 Annual Meeting of Stockholders are incorporated by reference into Part III of this report.

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FORWARD-LOOKING STATEMENTS

We have made statements under the captions "Business," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and in other sections of this Annual Report on Form 10-K ("Form 10-K"), or incorporated certain statements by reference into this Form 10-K, that are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and the Private Securities Litigation Reform Act of 1995. In some cases, these forward-looking statements can be identified by words with prospective meanings such as "intend," "plan," "estimate," "believe," "anticipate," "expect," "predict," "project," "forecast," "outlook," "future," "potential," "continue," "may," "can," "should" and "could" and similar expressions. Forward-looking statements may relate to, among other things, our future financial performance, including our operations and maintenance ("O&M") efficiency ratio, our growth and portfolio optimization strategies, our projected capital expenditures and related funding requirements, our ability to repay debt, our ability to finance current operations and growth initiatives, the impact of legal proceedings and potential fines and penalties, business process and technology improvement initiatives, trends in our industry, regulatory or legal developments or rate adjustments, including rate case filings, filings for infrastructure surcharges and filings to address regulatory lag.

Forward-looking statements are predictions based on our current expectations and assumptions regarding future events. They are not guarantees of any outcomes, financial results or levels of performance and you are cautioned not to place undue reliance upon them. These forward-looking statements are subject to a number of risks and uncertainties, and new risks and uncertainties of which we are not currently aware or which we do not currently perceive may arise in the future from time to time. Should any of these risks or uncertainties materialize, or should any of our expectations or assumptions prove incorrect, then our results may vary materially from those discussed in the forward-looking statements herein. Factors that could cause actual results to differ from those discussed in forward-looking statements include, but are not limited to, the factors discussed under the caption "Risk Factors" and the following factors:

- the decisions of governmental and regulatory bodies, including decisions to raise or lower rates;
- the timeliness of regulatory commissions' actions concerning rates;
- changes in customer demand for, and patterns of use of, water, such as may result from conservation efforts;
- changes in laws, governmental regulations and policies, including environmental, health and water quality and public utility regulations and policies;
- weather conditions, patterns or events, including drought or abnormally high rainfall;
- our ability to affect significant changes to our business processes and corresponding technology;
- our ability to appropriately maintain current infrastructure and manage expansion of our business;
- our ability to obtain permits and other approvals for projects;
- changes in our capital requirements;
- our ability to control operating expenses and to achieve efficiencies in our operations;
- our ability to obtain adequate and cost-effective supplies of chemicals, electricity, fuel, water and other raw materials that are needed for our operations;
- our ability to successfully acquire and integrate water and wastewater systems that are complementary to our operations and the growth of our business or dispose of assets or lines of business that are not complementary to our operations and the growth of our business;
- cost overruns relating to improvements or the expansion of our operations;
- changes in general economic, business and financial market conditions;
- access to sufficient capital on satisfactory terms;
- fluctuations in interest rates;

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- restrictive covenants in or changes to the credit ratings on our current or future debt that could increase our financing costs or affect our ability to borrow, make payments on debt or pay dividends;
- fluctuations in the value of benefit plan assets and liabilities that could increase our cost and funding requirements;
- our ability to utilize our U.S. and state net operating loss carryforwards;
- migration of customers into or out of our service territories;
- difficulty in obtaining insurance at acceptable rates and on acceptable terms and conditions;
- the incurrence of impairment charges;
- labor actions, including work stoppages;
- ability to retain and attract qualified employees; and
- civil disturbance, or terrorist threats or acts or public apprehension about future disturbances or terrorist threats or acts.

Any forward-looking statements we make, speak only as of the date of this Form 10-K. Except as required by law, we do not have any obligation, and we specifically disclaim any undertaking or intention, to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changed circumstances or otherwise.

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PART I

ITEM 1. BUSINESS

Our Company

American Water Works Company, Inc., (the "Company"), a Delaware corporation, is the most geographically diversified, as well as the largest publicly-traded, United States water and wastewater utility company, as measured by both operating revenue and population served. As a holding company, we conduct substantially all of our business operations through our subsidiaries. Our approximately 7,000 employees provide an estimated 15 million people with drinking water, wastewater and other water-related services in over 30 states and two Canadian provinces.

In 2011, our on-going operations generated \$2,666.2 million in total operating revenue and \$803.1 million in operating income. In 2010, our on-going operations generated \$2,555.0 million in total operating revenue and \$728.1 million in operating income.

We have two operating segments that are also the Company's two reportable segments: the Regulated Businesses and the Market-Based Operations. For further details on our segments, see Note 21 of the Consolidated Financial Statements.

For 2011, our Regulated Businesses segment generated \$2,368.9 million in operating revenue, which accounted for 88.8% of our total consolidated operating revenue. For the same period, our Market-Based Operations segment generated \$327.8 million in operating revenue, which accounted for 12.3% of total consolidated operating revenue.

For additional financial information, please see the financial statements and related notes thereto appearing elsewhere in this Form 10-K.

Our History as a Public Company

The Company was founded in 1886 as the American Water Works & Guarantee Company for the purposes of building and purchasing water systems in McKeesport, Pennsylvania. In 1935, the Company was reorganized under its current name, and in 1947 the common stock of the Company became publicly traded on the New York Stock Exchange ("NYSE"). In 2003, we were acquired by RWE Aktiengesellschaft, which we refer to as RWE, a stock corporation incorporated in the Federal Republic of Germany. On April 28, 2008, RWE Aqua Holdings GmbH, a German limited liability company and a direct wholly-owned subsidiary of RWE, which then was the sole owner of the Company's common stock, completed a partial divestiture of its investment through an initial public offering ("IPO"). Subsequently, RWE continued to divest of its investment in our common stock through public offerings and on November 24, 2009, RWE completed the divestiture. As a result of the IPO, we again became listed on the NYSE under the symbol "AWK" and resumed our position as the largest publicly traded water utility company in the United States.

During 2011, we either sold or announced the sale of assets or stock of certain of our regulated and market based subsidiaries as outlined in "Our Regulated Businesses" and "Our Market-Based Operation" discussions below. As such, these subsidiaries have been presented as discontinued operations for all periods presented, and are not included in the discussions below unless otherwise noted. See Note 3 to Consolidated Financial Statements for further details on our discontinued operations.

Regulated Businesses Overview

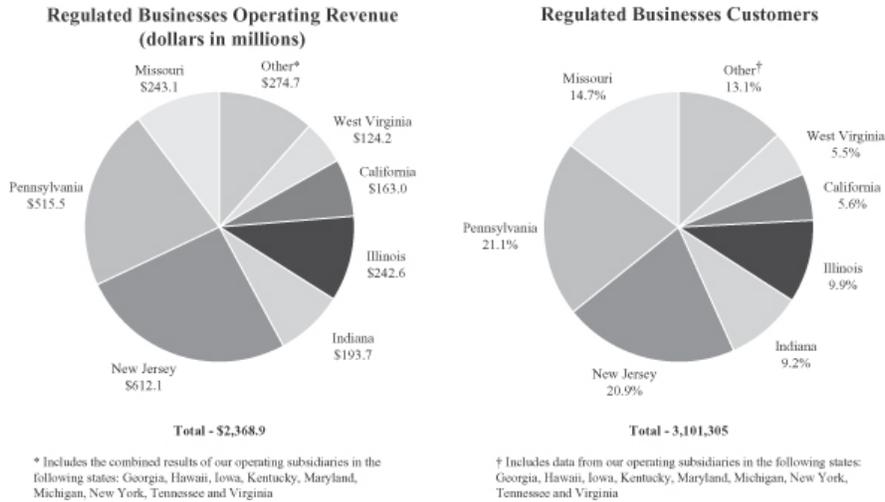
Our primary business involves the ownership of subsidiaries that provide water and wastewater utility services to residential, commercial, industrial and other customers, including sale for resale and public authority customers. Our subsidiaries that provide these services are generally subject to economic regulation by certain

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state commissions or other entities engaged in economic regulation, hereafter referred to as "PUCs", in the states in which they operate. The federal government and the states also regulate environmental, health and safety, and water quality matters. We report the results of our primary business in the Regulated Businesses segment.

As noted above, for 2011, operating revenue for our Regulated Businesses segment was \$2,368.9 million, accounting for 88.8% of total consolidated operating revenue for the same period. Regulated Businesses segment operating revenues were \$2,285.7 million for 2010 and \$2,076.6 million for 2009, accounting for 89.5% and 90.7%, respectively, of total operating revenues for the same periods.

The following charts set forth operating revenue for 2011 and customers as of December 31, 2011, for the states in which our Regulated Businesses provide services:



Market-Based Operations Overview

We also provide services that are not subject to economic regulation by state PUCs through our Market-Based Operations. Our Market-Based Operations include three lines of business:

- Contract Operations Group, which enters into contracts to operate and maintain water and wastewater facilities mainly for the United States military, municipalities, and the food and beverage industry;
- Homeowner Services Group, which provides services to domestic homeowners and smaller commercial establishments to protect against the cost of repairing broken or leaking water pipes and clogged or blocked sewer pipes inside and outside their accommodations; and
- Terratec Environmental Ltd., which we refer to as Terratec, which primarily provides biosolids management, transport and disposal services to municipal and industrial customers.

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For 2011, operating revenue for our Market-Based Operations was \$327.8 million, accounting for 12.3% of total operating revenue for the same period. The Market-Based Operations' operating revenue was \$294.7 million for 2010 and \$238.2 million for 2009, accounting for 11.5% and 10.4%, respectively, of total operating revenues for the same periods.

Our Industry

Overview

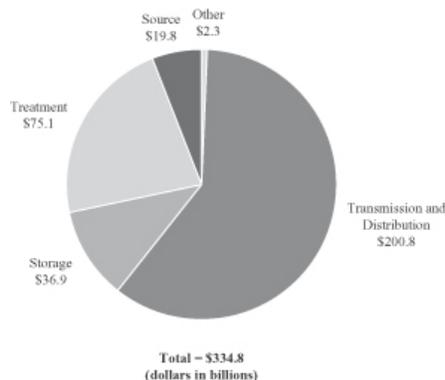
The United States water and wastewater industry has two main sectors (i) utility ownership, which involves supplying water and wastewater services to consumers; and (ii) general services, which involves providing water and wastewater related services to water and wastewater utilities and other customers on a contract basis.

The utility sector includes investor-owned as well as municipal systems that are owned and operated by local governments or governmental subdivisions. The Environmental Protection Agency ("EPA") estimates that government-owned systems make up the vast majority of the United States water and wastewater utility segment, accounting for approximately 84% of all United States community water systems and approximately 98% of all United States community wastewater systems. Investor-owned water and wastewater systems account for the remainder of the United States water and wastewater community water systems. Growth of service providers in the investor-owned regulated utility sector is achieved through organic growth within a franchise area, the provision of bulk water service to other community water systems and/or acquisitions, including small water and wastewater systems, typically serving fewer than 10,000 customers that are in close geographic proximity to already established regulated operations, which we herein refer to as "tuck-ins."

The utility sector is characterized by high barriers to entry, given the capital intensive nature of the industry. The aging water and wastewater infrastructure in the United States is in constant need of modernization and facilities replacement. Increased regulations to improve water quality and the management of water and wastewater residuals' discharges, which began with passage of the Clean Water Act in 1972 and the Safe Drinking Water Act in 1974, have been among the primary drivers of the need for modernization. The EPA estimated that approximately \$335 billion of capital spending would be necessary between 2007 and 2026 to replace aging infrastructure and to comply with standards to ensure quality water systems across the United States. Also, in 2007 the EPA estimated that approximately \$390 billion of capital spending would be necessary over the next 20 years to replace aging infrastructure and ensure quality wastewater systems across the United States. In addition, the 2011 American Society of Civil Engineers' report, Failure to Act: The Economic Impact of Current Investment Trends in Water and Wastewater Treatment Infrastructure estimates that as investment needs continue to escalate and current funding trends continue to fall short of the needs, it will likely result in unreliable water service and wastewater treatment. According to the report, this can result in water disruptions, impediments to emergency response, and damage to other types of infrastructure, as well as water shortages (from failing infrastructure and drought) that may result in unsanitary conditions and increase the likelihood of public health issues.

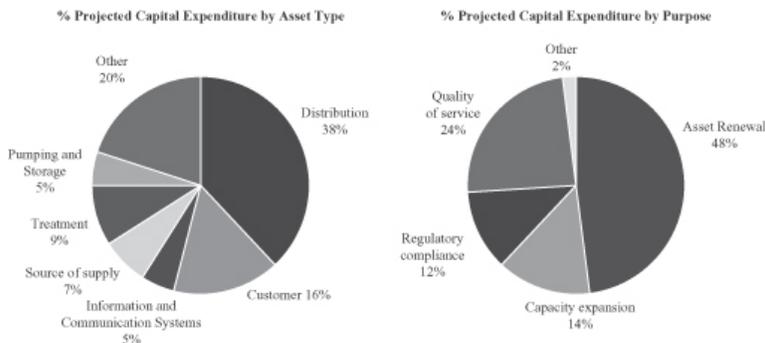
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The following chart sets forth estimated capital expenditure needs from 2007 through 2026 for United States water systems:



Note: Numbers may not total due to rounding
Source: U.S. Environmental Protection Agency's 2007 Drinking Water Infrastructure Needs Survey & Assessment

Over the next several years, we estimate that Company-funded capital investment for our operations will range between \$800 million and \$1 billion per year. Our capital investment includes both infrastructure renewal programs, where we replace existing infrastructure, as needed, and construction of facilities to meet environmental requirements and new customer growth. The charts below set forth our estimated percentage of projected capital expenditures by asset type and purpose of investment, respectively:



Investor-owned water and wastewater utilities generally require regulatory approval processes in order to do business, which may involve obtaining relevant operating approvals, including certificates of public convenience and necessity (or similar authorizations) from state PUCs. Investor-owned water and wastewater systems are generally subject to economic regulation by the state PUCs in the states in which they operate. The federal government and the states also regulate environmental, health and safety and water quality matters for both investor-owned and government-owned water and wastewater utilities.

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The general services sector includes engineering and consulting companies and numerous other fee-for-service businesses. These include building and operating water and wastewater utility systems, system repair services, lab services, sale of water infrastructure and distribution products (such as pipes) and other specialized services. The general services segment is characterized by aggressive competition and market-driven growth and profit margins.

According to the EPA, the utility segment of the United States water and wastewater industry is highly fragmented, with approximately 52,000 community water systems and approximately 16,000 community wastewater facilities. Fifty-six percent of the approximately 52,000 community water systems are very small, serving a population of 500 or less.

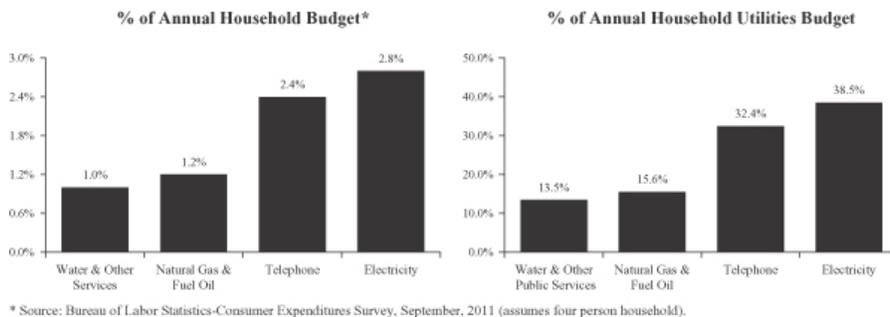
This large number of relatively small, fragmented water systems as well as fragmented wastewater facilities may result in inefficiencies in the marketplace, since such utilities may not have the operating expertise, financial and technological capability or economies of scale to provide services or raise capital as efficiently as larger utilities. Larger utilities that have greater access to capital are generally more capable of making mandated and other necessary infrastructure upgrades to both water and wastewater systems. In addition, water and wastewater utilities with large customer bases, spread across broad geographic regions, may more easily absorb the impact of significant variations in precipitation and temperatures, such as droughts, excessive rain and cool temperatures in specific areas. Larger utilities generally are able to spread overhead expenses over a larger customer base, thereby reducing the costs to serve each customer. Since many administrative and support activities can be efficiently centralized to gain economies of scale, companies that participate in industry consolidation have the potential to improve operating efficiencies, lower costs per unit and improve service at the same time.

Water and Wastewater Rates

Investor-owned water and wastewater utilities generate operating revenue from customers based on rates that are generally established by state PUCs through a rate-setting process that may include public hearings, evidentiary hearings and the submission by the utility of evidence and testimony in support of the requested level of rates. In evaluating a rate case, state PUCs typically focus on six areas: (i) the amount and prudence of investment in facilities considered "used and useful" in providing public service; (ii) the operating and maintenance costs and taxes associated with providing the service (typically by making reference to a representative 12-month period of time, known as a test year); (iii) the appropriate rate of return; (iv) revenue at existing rates; (v) the tariff or rate design that allocates operating revenue requirements across the customer base; and (vi) the quality of service the utility provides, including issues raised by customers.

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Water and wastewater rates in the United States are among the lowest rates in developed countries; and for most U.S. consumers, water and wastewater bills make up a relatively small percentage of household expenditures compared to other utility services. The following chart sets forth the relative cost of water and other public services, including trash and garbage collection and sewer maintenance, in the United States as a percentage of total household utility expenditures:



Our Regulated Businesses

Our core Regulated Businesses, which consist of locally managed utility subsidiaries that generally are economically regulated by the states in which they operate, accounted for \$2,368.9 million or 88.8% of our consolidated operating revenue in 2011. Our Regulated Businesses provide a high degree of financial stability because (i) high barriers to entry provide certain protections from competitive pressures; (ii) economic regulation promotes predictability in financial planning and long-term performance through the rate-setting process; and (iii) our customer base.

As a result of our portfolio optimization initiative, we announced certain acquisitions to and dispositions from our Regulated Businesses. In May, 2011, we completed the acquisition of 11 regulated water systems and 48 wastewater systems in Missouri for a purchase price of \$3.3 million. Additionally in June 2011, we completed the sale of the assets of our Texas regulated subsidiary for proceeds of \$6.2 million. The Missouri acquisition added approximately 1,700 water customers and nearly 2,000 wastewater customers. The Texas assets served approximately 4,200 water and 1,100 wastewater customers in the greater Houston metropolitan area.

In January 2011, we announced that we had entered into an agreement with EPCOR Water (USA) Inc. ("EPCOR USA") to sell all the stock of our regulated water and wastewater operating companies located in Arizona and New Mexico. The sale of these operating companies was completed on January 31, 2012.

On July 8, 2011 we entered into an agreement to purchase seven regulated water systems in New York for approximately \$71 million, adding approximately 50,000 customers to our New York regulated operations. In a separate agreement, we will sell eight regulated water systems and one wastewater system in Ohio for approximately \$89 million, plus assumed liabilities of approximately \$31 million for an estimated enterprise value of approximately \$120 million. Ohio American Water currently serves approximately 58,000 customers. The completion of both transactions is subject to customary closing conditions including regulatory approval by the PUCs in both New York and Ohio. In February 2012, the Ohio PUC approved the sale of our Ohio subsidiary, however both approvals are required to close the transactions. The closing on these transactions is expected to occur in the first half of 2012.

As noted above, as a result of these sales or pending sales, these regulated subsidiaries are presented as discontinued operations. Therefore, the amounts, statistics and tables presented in this section refer only to on-going operations, unless otherwise noted.

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The following table sets forth operating revenue for 2011 and number of customers from continuing operations as well as an estimate of population served as of December 31, 2011 in the states where our Regulated Businesses operate:

	Operating Revenues		Number of Customers		Estimated Population Served	
	(in millions)	% of Total		% of Total	(in millions)	% of Total
New Jersey	\$ 612.1	25.8%	647,083	20.9%	2.5	21.9%
Pennsylvania	515.5	21.8%	655,291	21.1%	2.2	19.3%
Illinois(a)	242.6	10.2%	307,076	9.9%	1.2	10.5%
Missouri	243.1	10.3%	454,094	14.7%	1.5	13.2%
Indiana	193.7	8.2%	285,120	9.2%	1.2	10.5%
California	163.0	6.9%	173,529	5.6%	0.6	5.3%
West Virginia(b)	124.2	5.2%	171,898	5.5%	0.6	5.3%
Subtotal (Top Seven States)	2,094.2	88.4%	2,694,091	86.9%	9.8	86.0%
Other(c)	274.7	11.6%	407,214	13.1%	1.6	14.0%
Total Regulated Businesses	\$ 2,368.9	100.0%	3,101,305	100.0%	11.4	100.0%

- (a) Includes Illinois-American Water Company, which we refer to as ILAWC and American Lake Water Company, also a regulated subsidiary in Illinois.
 (b) West Virginia-American Water Company, which we refer to as WVAWC, and its subsidiary Bluefield Valley Water Works Company.
 (c) Includes data from our operating subsidiaries in the following states: Georgia, Hawaii, Iowa, Kentucky, Maryland, Michigan, New York, Tennessee, and Virginia.

Approximately 88.4% of operating revenue from our Regulated Businesses in 2011 was generated from approximately 2.7 million customers in our seven largest states, as measured by operating revenues. In fiscal year 2011, no single customer accounted for more than 10% of our annual operating revenue.

Overview of Networks, Facilities and Water Supply

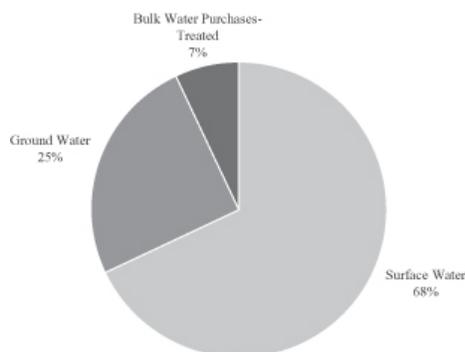
Our Regulated Businesses operate in approximately 1,100 communities in 16 states in the United States. Our primary operating assets include approximately 80 surface water treatment plants, 500 groundwater treatment plants, 1,000 groundwater wells, 100 wastewater treatment facilities, 1,100 treated water storage facilities, 1,200 pumping stations and 90 dams and 46,000 miles of mains and collection pipes. We own substantially all of the assets used by our Regulated Businesses. We generally own the land and physical assets used to store, extract and treat source water. Typically, we do not own the water itself, which is held in public trust and is allocated to us through contracts and allocation rights granted by federal and state agencies or through the ownership of water rights pursuant to local law. Maintaining the reliability of our networks is a key activity of our Regulated Businesses. We have ongoing infrastructure renewal programs in all states in which our Regulated Businesses operate. These programs consist of both rehabilitation of existing mains and replacement of mains that have reached the end of their useful service lives.

Our ability to meet the existing and future water demands of our customers depends on an adequate supply of water. Drought, governmental restrictions, overuse of sources of water, the protection of threatened species or habitats or other factors may limit the availability of ground and surface water. We employ a variety of measures to ensure that we have adequate sources of water supply, both in the short-term and over the long-term. The geographic diversity of our service areas tends to mitigate some of the economic effect of weather extremes for the Company as a whole. In any given summer, some areas are likely to experience drier than average weather while other areas will experience wetter than average weather.

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Our Regulated Businesses are dependent upon a defined source of water supply. Our Regulated Businesses obtain their water supply from surface water sources such as reservoirs, lakes, rivers and streams. In addition, we also obtain water from ground water sources, such as wells and purchase water from other water suppliers.

The following chart sets forth the sources of water supply for our Regulated Businesses for 2011 by volume:



In our long-term planning, we evaluate quality, quantity, growth needs and alternate sources of water supply as well as transmission and distribution capacity. Sources of supply are seasonal in nature and weather conditions can have a pronounced effect on supply. In order to ensure that we have adequate sources of water supply, we use comprehensive planning processes and maintain contingency plans to minimize the potential impact on service through a wide range of weather fluctuations. In connection with supply planning for most surface or groundwater sources, we employ sophisticated models to determine safe yields under different rainfall and drought conditions. Surface and groundwater levels are routinely monitored so that supply capacity deficits may be predicted and mitigated, as needed, through demand management and additional supply development.

The percentage of finished water supply by source type for our top seven states by Regulated Businesses revenues for 2011 is as follows:

	Ground Water	Surface water	Purchased water
New Jersey	21%	73%	6%
Pennsylvania	7%	92%	1%
Illinois	32%	57%	11%
Missouri(a)	12%	87%	1%
Indiana	57%	42%	1%
California(b)	67%	—	33%
West Virginia	—	100%	—

- (a) There are limitations in our Joplin service area where the projected source of water supply capacity is unable to meet projected peak demands under certain drought conditions. To manage this issue on the demand side, the water use of a large industrial customer can be restricted under an interruptible tariff. Additional wells have been and will be developed to address short-term supply deficiencies. Missouri-American Water Company is working with a consortium of agencies to determine a long-term supply solution for the Joplin, Missouri region.
- (b) In Monterey, in order to augment our sources of water supply, we have implemented conservation rates and other programs to address demand and are utilizing aquifer storage and recovery facilities to store winter water for summer use. Additionally, in other areas, we are making arrangements to extend or expand our purchase of water from neighboring water providers.

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The level of treatment we apply to the water varies significantly depending upon the quality of the water source and customer stipulations. Surface water sources, such as rivers, typically require significant treatment, while some groundwater sources, such as aquifers, require chemical treatment only. In addition, a small amount of treated water is purchased from neighboring water purveyors. Treated water is transported through an extensive transmission and distribution network, which includes underground pipes, above ground storage facilities and numerous pumping facilities with the ultimate distribution of the treated water to the customers' premises.

We also have installed production meters to measure the water that we deliver to our distribution network. We employ a variety of methods of customer meter reading to monitor consumption; ranging from meters with mechanical registers where consumption is manually recorded by meter readers to meters with electronic registers capable of transmitting consumption data to proximity devices (touch read) or via radio frequency to mobile or fixed network data collectors. The majority of new meters are able to support future advances in electronic meter reading.

Wastewater services involve the collection of wastewater from customers' premises through sewer lines. The wastewater is then transported through a sewer network to a treatment facility, where it is treated to meet required effluent standards. The treated wastewater is finally returned to the environment as effluent, and the solid waste byproduct of the treatment process is disposed of in accordance with applicable standards and regulations.

Customers

We have a large and geographically diverse customer base in our Regulated Businesses. For the purposes of our Regulated Businesses, an active customer is defined as a connection to our water and/or wastewater networks. A customer with both water and wastewater would count as two customers. Also, as in the case of apartment complexes, businesses and many homes, multiple individuals may be served by a single connection.

Residential customers make up the majority of our customer base in all of the states in which we operate. In 2011, residential customers accounted for 91.1% of the customers and 59.0% of the operating revenue of our Regulated Businesses. We also serve commercial customers, such as shops and businesses; industrial customers, such as large-scale manufacturing and production operations; and public authorities, such as government buildings and other public sector facilities, including schools. We also supply water to public fire hydrants for firefighting purposes, to private fire customers for use in fire suppression systems in office buildings and other facilities as well as providing bulk water supplies to other water utilities for distribution to their own customers.

The following table sets forth the number of water and wastewater customers (by customer class) for our Regulated Businesses as of December 31, 2011, 2010, and 2009:

	December 31,					
	2011		2010		2009	
	Water	Wastewater	Water	Wastewater	Water	Wastewater
Residential	2,730,524	95,092	2,728,205	93,156	2,721,085	92,183
Commercial	216,415	5,462	216,967	5,355	216,964	5,292
Industrial	3,885	13	4,033	13	4,241	13
Private fire	33,887	10	33,610	11	33,062	3
Public authority & other	15,818	199	15,436	197	15,430	196
Total	<u>3,000,529</u>	<u>100,776</u>	<u>2,998,251</u>	<u>98,732</u>	<u>2,990,782</u>	<u>97,687</u>

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The following table sets forth water services operating revenue by customer class and wastewater services operating revenue, excluding other revenues, for our Regulated Businesses for 2011, 2010, and 2009:

	Year Ended December 31,		
	2011	2010	2009
	(in millions)		
Water service			
Residential	\$ 1,339.4	\$ 1,300.2	\$ 1,185.9
Commercial	474.2	457.0	417.0
Industrial	116.0	110.2	97.5
Public and other	323.0	314.1	281.3
Total water services	\$ 2,252.6	\$ 2,181.5	\$ 1,981.7
Wastewater services	76.3	69.0	64.3
Total	\$ 2,328.9	\$ 2,250.5	\$ 2,046.0

Substantially all of our regulated water customers are metered, which allows us to measure and bill for our customers' water consumption, typically on a monthly basis. Our wastewater customers are billed either on a fixed charge basis or based on their water consumption.

Customer usage of water is affected by weather conditions, particularly during the summer. Our water systems generally experience higher demand in the summer due to the warmer temperatures and increased usage by customers for lawn irrigation and other outdoor uses. Summer weather that is cooler and wetter than average generally serves to suppress customer water demand and can reduce water operating revenue and operating income. Summer weather that is hotter and drier than average generally increases operating revenues and operating income. However, when weather conditions are extremely dry and even if our water supplies are sufficient to serve our customers, our systems may be affected by drought-related warnings and/or water usage restrictions imposed by governmental agencies, thereby reducing customer demand and operating revenue. These restrictions may be imposed at a regional or state level and may affect our service areas, regardless of our readiness to meet unrestricted customer demands. Other factors affecting our customers' usage of water include conservation initiatives, including the use of more efficient household fixtures and appliances among residential consumers; declining household sizes in the United States; and deterioration in the economy and credit markets which could have an adverse impact on our industrial and commercial customers' operational and financial performance.

Customer growth in our Regulated Businesses is driven by (i) organic population growth in our authorized service areas; (ii) adding new customers to our regulated customer base by acquiring water and/or wastewater utility systems; and (iii) the sale of water to other community water systems. Generally, we add customers through tuck-ins of small water and/or wastewater systems, typically serving fewer than 10,000 customers, in close geographic proximity to areas where we currently operate our Regulated Businesses. We will continue to acquire water and wastewater utilities through tuck-ins. The proximity of tuck-in opportunities to our regulated footprint allows us to integrate and manage the acquired systems and operations using our existing management and to achieve efficiencies. Historically, pursuing tuck-ins has been a fundamental part of our growth strategy. We intend to continue to expand our regulated footprint geographically by acquiring water and wastewater systems in our existing markets and, if appropriate, certain markets in the United States where we do not currently operate our Regulated Businesses. We will also selectively seek larger acquisitions that allow us to acquire multiple water and wastewater utility systems in our existing and new markets. Before entering new regulated markets, we will evaluate the regulatory environment to ensure that we will have the opportunity to achieve an appropriate rate of return on our investment while maintaining our high standards for quality, reliability and compliance with environmental, health and safety and water quality standards.

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Supplies

Our water and wastewater operations require an uninterrupted supply of chemicals, energy and fuel, as well as maintenance material and other critical inputs. Many of these inputs are subject to short-term price volatility. Short-term price volatility is partially mitigated through existing procurement contracts, current supplier continuity plans, and the regulatory rate setting process.

Because of our geographic diversity, we maintain relationships with many chemical, equipment and service suppliers in the marketplace, and we do not rely on any single entity for a material amount of our supplies. We also employ a strategic sourcing process intended to ensure reliability in supply and long-term cost effectiveness. As a result of this process and our strong relationships with suppliers, we are able to mitigate interruptions in the delivery of the products and services that are critical to our operations.

We typically have a combination of standby power generation or dual electric service feeds at key facilities, multiple water production facilities, emergency interconnections with adjacent water systems and finished water storage that keep our operations running in the event of a temporary loss of our primary energy supplies.

Regulation

Economic Regulation

Our Regulated Businesses are generally subject to extensive economic regulation by their respective PUCs. The term "economic regulation" is intended to indicate that these state PUCs regulate the economic aspects of service to the public but do not generally establish water quality standards, which are typically set by the United States Environmental Protection Agency ("EPA") and/or state environmental authorities. State PUCs have broad authority to regulate many of the economic and service aspects of the utilities. For example, state PUCs often issue certificates of public convenience and necessity (or similar authorizations) that may be required for a company to provide service in specific areas. They also approve the rates and conditions under which service is provided and have extensive authority to establish rules and regulations under which the utilities operate. Specific authority might differ from state to state, but in most states PUCs approve rates, accounting treatments, long-term financing programs, significant capital expenditures and plant additions, transactions and relationships between the regulated subsidiary and affiliated entities, reorganizations, mergers and acquisitions. In many instances, approvals are required prior to the transaction. Regulatory policies not only vary from state to state, but can change over time as well. These policies will affect the timing as well as the extent of recovery of expenses and the realized return on invested capital. Our results of operations are significantly affected by rates authorized by the PUCs in the states in which we operate, and we are subject to risks and uncertainties associated with rate case delays or inadequate rate recovery.

Economic regulation of utilities involves many competing, and occasionally conflicting, public interests and policy goals. The primary responsibility of PUCs is to promote the overall public interest by balancing the interests of customers and the utility. Although the specific approach to economic regulation varies, certain general principles are consistent across the states in which our regulated subsidiaries operate. For example, based on certain legal and regulatory principles, utilities are entitled to recover, through rates charged to customers, prudent and reasonable operating costs as well as an opportunity to earn an appropriate return on and recovery of prudent, used and useful capital investment necessary to provide service to customers. PUCs will also generally accord a utility the right to serve specific areas and will also provide investor-owned utilities with limited protection from competition because the requirement of an investor-owned utility to operate pursuant to a certificate of public convenience and necessity (or similar authorizations) typically prevents other investor-owned utilities from competing with it in the authorized area. In return, the utility undertakes the obligation to provide reliable service without unreasonable discrimination to all customers within the authorized area.

Our operating revenue is typically determined by reference to a volumetric charge based on consumption and a base fee component set by a tariff approved by the PUC. The process to obtain approval for a change in

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rates generally involves filing a petition or "rate case" by the utility with the PUC on a periodic basis as determined by the need to recover capital expenditures, reduced revenue, increased operating costs or the utility determines that its current authorized return is not sufficient, given current market conditions, to provide a reasonable return on investment. A PUC may also initiate a rate proceeding or investigation if it believes a utility may be earning in excess of its authorized rate of return or other issues exist which justify a review. PUCs may also impose other conditions on the content and timing of filings designed to affect rates. Rate cases often involve a lengthy administrative process which can be costly. The utility, the state PUC staff, consumer advocates, and other customers, who may participate in the process, generally submit testimony and supporting financial data from a twelve month period of time, known as the "test year." State statutes and PUC rules and precedent usually determine whether the test year should be based on a historical period, a historical period adjusted for certain "known and measurable" changes or forecasted data. The majority of our states require the test year to be based on a historical period adjusted for certain known and measurable changes. The evidence is presented in public hearings held in connection with the rate case, which are economic and service quality fact-finding in nature, and are typically conducted in a trial-like setting before the PUC or an administrative law judge. During the process, the utility is required to provide PUC staff and intervenors with all relevant information they may request concerning the utility's operations, costs and investments. The decision of the PUC should be based on the evidence presented at the hearing.

Some state PUCs are more restrictive than others with regard to the types of expenses and investments that may be recovered in rates as well as with regard to the transparency of their rate-making processes and how they reach their final rate determinations. However, in evaluating a rate case, state PUCs typically focus on a number of areas, including, the amount and prudence of investment in facilities; operating and maintenance expenses and taxes; the appropriate cost of capital and equity return; revenues at current and expected levels; allocation of the revenue requirements among customer classes; service quality and issues raised by customers.

Failure of the PUCs to recognize reasonable and prudent operating and capital costs can result in the inability of the utility to earn the allowed return and can have a significant impact on the operations and earnings of our Regulated Businesses. Rate cases and other rate-related proceedings can take several months to over a year to complete. Therefore, there is frequently a delay, or regulatory lag, between the time one of our regulated subsidiaries makes a capital investment or incurs an operating cost increase and when those costs are reflected in rates. For instance, an unexpected increase in chemical costs or new capital investment that is not reflected in the most recently completed rate case will generally not begin to be recovered by the regulated subsidiary until the effective date of the subsequent rate case. Our rate case management program is guided by the goals of obtaining efficient recovery of costs of capital and utility operating and maintenance costs, including costs incurred for compliance with environmental regulations. The management team at each of our regulated subsidiaries anticipates the time required for the regulatory process and files rate cases with the goal of obtaining rates that reflect as closely as possible the cost of providing service at the time the rates become effective. Even if rates are sufficient, we face the risk that we will not achieve the rates of return on and of invested capital that are permitted by the PUC.

Our regulated subsidiaries work with legislatures and PUCs to mitigate the adverse impact of regulatory lag through the adoption of positive regulatory policies. These policies include, for example, infrastructure replacement surcharges that allow rates to change rates outside the context of a general rate proceeding to reflect, on a more timely basis, investments to replace aging infrastructure necessary to sustain high quality, reliable service. Currently, Pennsylvania, Illinois, Missouri, Indiana, New York and California allow the use of infrastructure surcharges. In November 2011, the New Jersey Board of Public Utilities ("BPU") voted unanimously to publish draft rules that, if adopted, would implement a distribution system improvement charge for specified water infrastructure investments. The draft rules were published for public comment in December 2011. Allowing time for resolution of public comments and final approval, April 2012 is the earliest estimate for the rule to become final.

Forward-looking test year mechanisms allow us to earn, on a more current basis, our current or projected usage and costs and a rate of return on our current or projected invested capital. Some states have permitted use

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of a fully forecasted test year instead of historical data to set rates. Examples of these states include: Illinois, Kentucky, New York, Tennessee and California. In all states in which we operate on a regulated basis, PUCs have allowed utilities to update historical data for certain "known and measurable" changes that occur for some limited period of time subsequent to the historical test year. This allows utilities to take account of more current costs or capital investments in the rate-setting process. The extent to which historical data can be updated will generally vary from state to state.

Surcharge mechanisms are also available in a number of states to reflect, outside of general rate proceeding, changes in major operating expenses which may be beyond the utility's control. For example, New Jersey, California, Virginia and Illinois have allowed surcharges for purchased water costs. California has allowed surcharges for power and certain other costs, and New York has allowed annual reconciliations for revenues and expenses such as power, fuel, chemicals and property taxes.

Certain states have approved consolidated rates or single-tariff pricing policies. Consolidated rates or single-tariff pricing is the use of a unified rate structure for multiple water systems that are owned and operated by a single utility, but may or may not be contiguous or physically interconnected. The single-tariff pricing structure may be used fully or partially in a state, based on costs that are determined on a state-wide or intra-state regional basis, thereby moderating the impact of periodic fluctuations in local costs while lowering administrative costs for us and our customers. For states that do not employ single-tariffs, we may have multiple general rate cases filed at any given point in time. States that have adopted a full or partial single-tariff pricing policy included: Pennsylvania, New Jersey, West Virginia, Kentucky, Ohio, Indiana, Illinois and Iowa. Therefore, of our seven largest states, five have some form of single-tariff pricing.

Another mechanism to address issues of regulatory lag is the potential ability, in certain circumstances, to recover in rates a return on utility plant before it is in service, instead of capitalizing an allowance for funds used during construction. Examples of states that have allowed such recovery include Pennsylvania, Ohio, Kentucky, Virginia, Illinois and California. In addition, some states, such as Indiana, allow the utility to seek pre-approval of certain capital projects and associated costs. In this pre-approval process, the PUC assesses the prudence of such projects.

In some states, the PUC has implemented mechanisms to enhance utility revenue stability in light of conservation initiatives, decreasing per capita consumption or other factors. Sometimes referred to as "decoupling," these mechanisms, to some extent, separate recoverable revenues from volumes of water sold. For example, the state of California has decoupled revenues from water sold to help achieve the state initiative to reduce water usage by 20% by 2020. This progressive regulation enables utilities to encourage conservation, as revenues are not tied to sales. Also, as a result of this mechanism, utilities are less susceptible to consumption changes as a result of conservation, declining per capita usage or other factors affecting consumption. Likewise, New York has implemented a surcharge or credit based on the difference between actual net revenues for the preceding year and the net revenue target as estimated in the most recent rate case.

The Company pursues these positive regulatory policies as part of our rate and revenue management program to enhance our ability to provide high quality, sustainable, cost effective service to customers, to facilitate efficient recovery of our costs and investments, and to ensure positive short-term liquidity and long-term profitability. The ability of the Company to seek regulatory treatment as described above does not guarantee that the state PUCs will accept the Company's proposal in the context of a particular rate case, and these policies will reduce, but not eliminate, regulatory lag associated with traditional rate making processes. However, the Company strives to use these and other regulatory policies to address issues of regulatory lag wherever appropriate. It is also our strategy to expand their use in areas where they may not currently apply.

Environmental, Health and Safety and Water Quality Regulation

Our water and wastewater operations are subject to extensive United States federal, state and local laws and regulations, and in the case of our Canadian operations, Canadian laws and regulations governing the protection

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of the environment, health and safety, the quality of the water we deliver to our customers, water allocation rights and the manner in which we collect, treat, discharge and dispose of wastewater. We are also subject to certain regulations regarding fire protection services in the areas we serve. These regulations include the Safe Drinking Water Act, the Clean Water Act and other federal, state, local and Canadian laws and regulations governing the provision of water and wastewater services, particularly with respect to the quality of water we distribute. We also are subject to various federal, state, local and Canadian laws and regulations governing the storage of hazardous materials, the management and disposal of hazardous and solid wastes, discharges to air and water, the cleanup of contaminated sites, dam safety and other matters relating to the protection of the environment and health and safety. State PUCs also set conditions and standards for the water and wastewater services we deliver.

Environmental, health and safety and water quality regulations are complex and change frequently. The overall trend has been that they have become more stringent over time. As newer or stricter standards are introduced, our capital and operating costs could increase. We incur substantial costs associated with compliance with environmental, health and safety and water quality regulation to which our Regulated Businesses are subject. In the past, we have generally been able to recover costs associated with compliance related to environmental, health and safety standards, but this recovery is affected by regulatory lag and the corresponding uncertainties surrounding rate recovery.

We maintain a comprehensive environmental policy including responsible business practices, compliance with environmental laws and regulations, effective use of natural resources, and stewardship of biodiversity. We believe that our operations are materially in compliance with, and in many cases surpass, minimum standards required by applicable environmental laws and regulations. Water samples from across our water systems are analyzed on a regular basis for material compliance with regulatory requirements. Across the Company, we conduct over one million water quality tests each year at our laboratory facilities and plant operations, including continuous on-line instrumentations such as monitoring turbidity levels, disinfectant residuals and adjustments to chemical treatment based on changes in incoming water. For 2011, we achieved a score of greater than 99% for drinking water compliance and according to the EPA statistics, American Water's performance has been far better than the industry average over the last several years. In fact, in 2011, American Water was 28 times better than the industry average for compliance with drinking water quality standards (Maximum Contaminant Levels) and 118 times better for compliance with drinking water monitoring and reporting requirements.

We participate in the Partnership for Safe Water, the United States EPA's voluntary program to meet more stringent goals for reducing microbial contaminants. With 67 of our 86 surface water plants receiving the program's "Director" award, we account for approximately one-third of the plants receiving such awards nationwide. In addition, 62 American Water plants have received the "Five-Year Phase III" award, while 40 have been awarded the "Ten-Year Phase III" award.

Safe Drinking Water Act

The Federal Safe Drinking Water Act and regulations promulgated thereunder establish national quality standards for drinking water. The EPA has issued rules governing the levels of numerous naturally occurring and man-made chemical and microbial contaminants and radionuclides allowable in drinking water and continues to propose new rules. These rules also prescribe testing requirements for detecting contaminants, the treatment systems which may be used for removing contaminants and other requirements. Federal and state water quality requirements have become increasingly stringent, including increased water testing requirements, to reflect public health concerns.

To effect the removal or inactivation of microbial organisms, the EPA has promulgated various rules to improve the disinfection and filtration of drinking water and to reduce consumers' exposure to disinfectants and byproducts of the disinfection process. In January 2006, the EPA promulgated the Long-term 2 Enhanced Surface Water Treatment Rule and the Stage 2 Disinfectants and Disinfection Byproduct Rule. In October 2006,

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the EPA finalized the Ground Water Rule, applicable to water systems providing water from underground sources. In 2006, the EPA also proposed revisions to the monitoring and reporting requirements of the existing Lead and Copper Rule. In 2012, we anticipate that the EPA will finalize revisions to the Total Coliform Rule that were part of the mandate of a Federal Advisory Committee appointed to negotiate the changes. Most of the anticipated changes to the rule will not be effective until 2013 or later. The EPA is actively considering regulations for a number of contaminants, including hexavalent chromium, fluoride, nitrosamines, perchlorate, some pharmaceuticals and certain volatile organic compounds, but we do not anticipate that any of these regulations will be completed in 2012.

Although it is difficult to project the ultimate costs of complying with the above or other pending or future requirements, we do not expect current requirements under the Safe Drinking Water Act to have a material impact on our operations or financial condition. In addition, capital expenditures and operating costs to comply with environmental mandates traditionally have been recognized by PUCs as appropriate for inclusion in establishing rates. As a result, we expect to fully recover the operating and capital costs resulting from these pending or future requirements.

Clean Water Act

The Federal Clean Water Act regulates discharges from drinking water and wastewater treatment facilities into lakes, rivers, streams and groundwater. In addition to requirements applicable to our wastewater collection systems, our operations require discharge permits under the National Pollutant Discharge Elimination System, ("NPDES"), permit program established under the Clean Water Act. Pursuant to the NPDES program, the EPA or implementing states set maximum discharge limits for wastewater effluents and overflows from wastewater collection systems. We believe that we maintain the necessary permits and approvals for the discharges from our water and wastewater facilities. From time to time, discharge violations occur at our facilities, some of which result in fines. We do not expect any such violations or fines to have a material impact on our results of operations or financial condition.

Other Environmental, Health and Safety and Water Quality Matters

Our operations also involve the use, storage and disposal of hazardous substances and wastes. For example, our water and wastewater treatment facilities store and use chlorine and other chemicals which generate wastes that require proper handling and disposal under applicable environmental requirements. We also could incur remedial costs in connection with any contamination relating to our operations or facilities or our off-site disposal of wastes. Although we are not aware of any material cleanup or decontamination obligations, the discovery of contamination or the imposition of such obligations in the future could result in additional costs. Our facilities and operations also are subject to requirements under the United States Occupational Safety and Health Act and are subject to inspections thereunder. For further information, see "Business—Research and Development."

Certain of our subsidiaries are involved in pending legal proceedings relating to environmental matters. These proceedings are described further in the section entitled "Item 3—Legal Proceedings."

Competition

In our Regulated Businesses, we generally do not face direct competition in providing services in our existing markets because (i) we operate within those markets pursuant to certificates of public convenience and necessity (or similar authorizations) issued by state PUCs; and (ii) the high cost of constructing a new water and wastewater system in an existing market creates a barrier to market entry. Our Regulated Businesses do face competition from governmental agencies, other investor-owned utilities, large industrial customers with the ability to provide their own water supply/treatment process and strategic buyers that are entering new markets and/or making strategic acquisitions. Our largest investor-owned competitors, when pursuing acquisitions, based

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on a comparison of operating revenues and population served, are Aqua America Inc., United Water (owned by Suez Environnement), American States Water Co. and California Water Services Group.

Condemnation

The potential exists that portions of our subsidiaries' utility assets could be acquired by municipalities or other local government entities through one or more of the following methods:

- eminent domain (also known as condemnation);
- the right of purchase given or reserved by a municipality or political subdivision when the original certificate of public convenience and necessity was granted; and
- the right of purchase given or reserved under the law of the state in which the utility subsidiary was incorporated or from which it received its certificate.

The acquisition consideration related to such a transaction initiated by a local government may be determined consistent with applicable eminent domain law, or may be negotiated or fixed by appraisers as prescribed by the law of the state or in the particular franchise or charter. We believe our operating subsidiaries would be entitled to fair market value for any assets required to be sold, and we are of the opinion that fair market value would be in excess of the book value for such assets.

We are periodically subject to condemnation proceedings in the ordinary course of business, the last of which occurred in September 2008. We actively monitor condemnation activities that may affect us as soon as we become aware of them. We do not believe that condemnation poses a material threat to our ability to operate our Regulated Businesses.

Our Market-Based Operations

In addition to our Regulated Businesses, we operate the following Market-Based Operations, which generated \$327.8 million of operating revenue in 2011 representing 12.3% of total operating revenue for the same period. Of the lines of business outlined below, no single group within our Market-Based Operations generates in excess of 10% of our aggregate revenue.

Contract Operations Group

Our Contract Operations Group enters into public/private partnerships, including O&M and Design, Build and Operate ("DBO") contracts for the provision of services to water and wastewater facilities for the United States military, municipalities, the food and beverage industry and other customers. We typically make no capital investment under these contracts with municipalities and other customers; instead we perform our services for a fee. During the contract term, we may make limited capital investments under our contracts with the United States military and certain industrial customers. Our Contract Operations Group generated revenue of \$230.5 million in 2011, representing 70.3% of revenue for our Market-Based Operations.

On December 31, 2011, we completed the sale of our Applied Water Management, Inc. group ("AWM") in two separate transactions for combined proceeds of approximately \$3.0 million. AWM provided customized water and wastewater management solutions through contract operations with real estate developers, industrial clients, and small-to-mid-sized communities. Its annual revenue and net loss in 2011 were \$21.6 million and \$0.6 million, respectively. As noted above, this subsidiary is included in discontinued operations for all periods presented. Therefore, all amounts and statistics disclosed for the Contract Operations Group refers only to on-going operations of the Contract Operations Group.

We are currently party to more than 100 contracts, varying in size and scope, across the United States and Canada, with contracts ranging in term from two to 50 years. Included in these contracts are nine 50-year

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contracts with the Department of Defense for the operation and maintenance of the water and wastewater systems and one 3-year sub-contract with a municipality, acting as primary contractor with the Department of Defense, for similar services on an interim basis until construction of new connections to an existing municipal facility are completed. All of our contracts with the U.S. government may be terminated, in whole or in part, prior to the end of the 50-year term for convenience of the U.S. government or as a result of default or non-performance by the subsidiary performing the contract. In either event, pursuant to the standard terms of the U.S. government contract termination provisions, we would be entitled to recover allowable costs that we may have incurred under the contract, plus the contract profit margin on incurred costs. The contract price for each of these contracts is subject to redetermination two years after commencement of operations and every three years thereafter. Price redetermination is a contract mechanism to periodically adjust the service fee in the next period to reflect changes in contract obligations and anticipated market conditions.

Homeowner Services Group

Our Homeowner Services Group, through our Service Line Protection Program, provides services to domestic homeowners and smaller commercial establishments to protect against the cost of repairing broken or leaking water pipes and clogged or blocked sewer pipes inside and outside their accommodations.

Our LineSaver program involves partnering with municipalities to offer our protection programs to homeowners serviced by the municipalities. Our Homeowner Services Group has approximately 900,000 customer contracts in 17 states.

Terratec Environmental Ltd

Our Market-Based Operations also includes our biosolids management group, Terratec, which is located in Canada and provides environmentally sustainable management and disposal of biosolids and wastewater by-products.

Competition

We face competition in our Market-Based Operations from a number of service providers, including Veolia Environnement, American States, OMI and Southwest Water, particularly in the area of O&M contracting. Securing new O&M contracts is highly competitive, as these contracts are awarded based on a combination of customer relationships, service levels, competitive pricing, references and technical expertise. We also face competition in maintaining existing O&M contracts to which we are a party, as the municipal and industrial fixed term contracts frequently come up for renegotiation and are subject to an open bidding process.

Research and Development

We established a formal research and development program in 1981 with the goal of improving water quality and operational effectiveness in all areas of our business. Our research and development personnel are located in New Jersey. In addition, our quality control and testing laboratory in Belleville, Illinois supports research through sophisticated testing and analysis. Since its inception, our research and development program has evolved to become a leading water-related research program, achieving advancements in the science of drinking water, including sophisticated water testing procedures and desalination technologies.

Since the formation of the EPA in 1970, we have collaborated with the agency to achieve effective environmental, health and safety and water quality regulation. This relationship has developed to include sharing of our research and national water quality monitoring data in addition to our treatment and distribution system optimization research. Our engagement with the EPA has helped us to achieve a leadership position for our company within the water and wastewater industry and has provided us with early insight into emerging regulatory issues and initiatives, thereby allowing us to anticipate and to accommodate our future compliance requirements.

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In 2011, we spent \$2.6 million on research and development compared to \$2.8 million spent in 2010 and 2009. Approximately one-quarter of our research budget is comprised of competitively awarded outside research grants. Such grants reduce the cost of research and allow collaboration with leading national and international researchers.

We believe that continued research and development activities are critical in providing quality and reliable service at reasonable rates, in maintaining our leadership position in the industry and will provide us with a competitive advantage as we seek additional business with new and existing customers.

Support Services

Our American Water Works Service Company subsidiary provides shared services and corporate governance that achieve economies of scale through central administration. These services are provided predominantly to our Regulated Businesses under the terms of contracts with these companies that have been approved by state PUCs, where necessary. These services, which are provided at cost, may include accounting, administration, business development, corporate secretarial, education and training, engineering, financial, health and safety, human resources, information systems, legal, operations, procurement, rates, security, risk management, water quality and research and development. These arrangements afford our operating companies professional and technical talent on an economical and timely basis. We also operate two national customer service centers, which are located in Alton, Illinois and Pensacola, Florida.

Our security department provides oversight and governance of physical and information security throughout our operations and is responsible for designing, implementing, monitoring and supporting active and effective physical and information security controls. We have complied with EPA regulations concerning vulnerability assessments and have made filings to the EPA as required. Vulnerability assessments are conducted regularly to evaluate the effectiveness of existing security controls and serve as the basis for further capital investment in security for the facility. Information security controls are deployed or integrated to prevent unauthorized access to company information systems, assure the continuity of business processes dependent upon automation, ensure the integrity of our data and support regulatory and legislative compliance requirements. While we do not make public comments on the details of our security programs, we are in contact with federal, state and local law enforcement agencies to coordinate and improve the security of our water delivery systems and to safeguard our water supply.

Employee Matters

Currently, approximately 49% of our workforce is represented by unions. We have 83 collective bargaining agreements in place with 19 different unions representing our unionized employees. In September 2010, we declared "impasse" in negotiations of our national benefits agreement with most of the labor unions representing employees in our Regulated Businesses. The prior agreement expired on July 31, 2010; however negotiations did not produce a new agreement. We implemented our last, best and final offer on January 1, 2011 in order to maintain health care coverage for our employees in accordance with terms of the offer. The unions have challenged our right to implement our last, best, and final offer. In this regard, following the filing by the Utility Workers Union of America of an unfair labor practice charge, the National Labor Relations Board ("NLRB") issued a complaint against us in January 2012, claiming that we implemented the last, best and final offer without providing sufficient notice of the existence of a dispute with the Federal Mediation and Conciliation Service, a state mediation agency, and several state departments of labor. We have asserted that we did, in fact, provide sufficient notice. A hearing date on the matter has not been set. In addition, six local unions filed grievances or demands for arbitration under their respective local collective bargaining agreements regarding our implementation of the last, best and final offer. In response, we filed a declaratory judgment action against the local unions in United States District Court for the District of New Jersey seeking, among other things, an injunction preventing the unions from filing grievances or demanding arbitration under the local collective bargaining agreements with respect to the implementation of our last, best and final offer. Three of the unions were removed from the litigation after they agreed to a dismissal with prejudice. Two of the unions were

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removed from the New Jersey District Court action, and the Company is pursuing similar declaratory judgment actions against the unions in United States District Courts in Pennsylvania and West Virginia. We will continue to defend our position in any challenge presented by the unions. Management does not expect any work disruption by union members at this time. In addition to matters relating to the expired national benefit agreement, five local union contracts covering approximately 700 employees expired without a new agreement being reached prior to December 31, 2011. One contract relating to employees in St. Louis, Missouri was negotiated to impasse and our last, best and final offer was implemented on July 11, 2011. There have been no work stoppages with respect to these contracts. Nevertheless, management has developed contingency plans that will be implemented as necessary if a work stoppage or strike does occur. Over one-quarter of our local union contracts will expire during 2012.

Available Information

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended. We file or furnish annual, quarterly and current reports, proxy statements and other information with the United States Securities and Exchange Commission ("SEC"). You may obtain a copy of any of these reports, free of charge, from the Investor Relations section of our website, <http://www.amwater.com>, shortly after we file or furnish the information to the SEC. Information contained on our website shall not be deemed incorporated into, or to be a part of, this report.

You may also obtain a copy of any of these reports directly from the SEC. You may read and copy any material we file or furnish with the SEC at their Public Reference Room, located at 100 F Street N.E., Washington, D.C. 20549. The phone number for information about the operation of the Public Reference Room is 1-800-732-0330 (if you are calling from within the United States), or 202-551-8090. Because we electronically file our reports, you may also obtain this information from the SEC internet website at <http://www.sec.gov>. You can obtain additional contact information for the SEC on their website.

The American Water corporate governance guidelines and the charters for each of the standing committees of the board of directors, together with the American Water Code of Ethics and additional information regarding our corporate governance, are available on our website, <http://www.amwater.com>, and will be made available, without charge, in print to any shareholder who requests such documents from Investor Relations Department, American Water Works Company, Inc., 1025 Laurel Oak Road, Voorhees, NJ, 08043.

ITEM 1A. RISK FACTORS

We operate in a market and regulatory environment that involves significant risks, many of which are beyond our control. In addition to the other information included or incorporated by reference in this Form 10-K, the following factors should be considered in evaluating our business and future prospects. Any of the following risks, either alone or taken together, could materially and adversely affect our business, financial position, results of operations or cash flows and liquidity.

Risks Related to Our Industry and Business

Our utility operations are subject to extensive economic regulation. Decisions by state PUCs and other regulatory agencies can significantly affect our business and results of operations.

Our Regulated Businesses provide water and wastewater services to our customers through subsidiaries that are economically regulated by state PUCs. Economic regulation affects the rates we charge our customers and has a significant impact on our business and results of operations. Generally, the state PUCs authorize us to charge rates that they determine are sufficient to recover our prudently incurred operating expenses, to enable us to finance the addition of new, or the replacement of existing, water and wastewater infrastructure and to provide us the opportunity to earn what they determine to be an appropriate rate of return on our invested capital and a return of our invested capital.

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Our ability to successfully implement our business plan and strategy depends upon the rates authorized by the various state PUCs. We periodically file rate increase applications with state PUCs. The ensuing administrative process may be lengthy and costly. We can provide no assurances that our rate increase requests will be approved, or that any approval will be given in a timely manner. Moreover, a PUC may not approve a rate request to an extent that is sufficient to cover our expenses, including purchased water and costs of chemicals, fuel and other commodities used in our operations; enable us to recover our investment; and provide us an opportunity to earn an appropriate rate of return on our investment, in which case our business, financial condition, results of operations, cash flow and liquidity may be adversely affected. Even if rates are sufficient, we face the risk that we will not achieve the rates of return on our invested capital and a return of our invested capital to the extent permitted by state PUCs. This could occur if water usage is less than anticipated in establishing rates, as billings to customers are, to a considerable extent, based on usage in addition to a base rate, or if our investments or expenses prove to be higher than was estimated in establishing rates.

Our operations and the quality of water we supply are subject to extensive environmental, water quality and health and safety laws and regulations. Compliance with increasingly stringent laws and regulations could impact our operating costs, and violations of such laws and regulations could subject the company to substantial liabilities and costs.

Our water and wastewater operations are subject to extensive United States federal, state and local laws and regulations and, in the case of our Canadian operations, Canadian laws and regulations that govern the protection of the environment, health and safety, the quality of the water we deliver to our customers, water allocation rights, and the manner in which we collect, treat, discharge and dispose of wastewater. These requirements include the United States Clean Water Act of 1972, which we refer to as the Clean Water Act, and the United States Safe Drinking Water Act of 1974, which we refer to as the Safe Drinking Water Act, and similar state and Canadian laws and regulations. We are also required to obtain various environmental permits from regulatory agencies for our operations. In addition, state PUCs also set conditions and standards for the water and wastewater services we deliver. If we deliver water or wastewater services to our customers that do not comply with regulatory standards, or otherwise violate environmental laws, regulations or permits, or other health and safety and water quality regulations, we could incur substantial fines, penalties or other sanctions or costs, as well as damage to our reputation. In the most serious cases, regulators could force us to discontinue operations and sell our operating assets to another utility or to a municipality. Given the nature of our business which, in part, involves supplying water for human consumption, any potential non-compliance with, or violation of, environmental, water quality and health and safety laws or regulations would likely pose a more significant risk to us than to a company not similarly involved in the water and wastewater industry.

We incur substantial operating and capital costs on an ongoing basis to comply with environmental, water quality and health and safety laws and regulations. These laws and regulations, and their enforcement, generally have become more stringent over time, and new or stricter requirements could increase our costs. Although we may seek to recover ongoing compliance costs in our rates, there can be no guarantee that the various state PUCs or similar regulatory bodies that govern our Regulated Businesses would approve rate increases to recover such costs or that such costs will not materially and adversely affect our financial condition, results of operations, cash flows and liquidity.

We may also incur liabilities if, under environmental laws and regulations, we are required to investigate and clean up environmental contamination at our properties, including potential spills of hazardous chemicals, such as chlorine, which we use to treat water, or at off-site locations where we have disposed of waste or caused an adverse environmental impact. The discovery of previously unknown conditions, or the imposition of cleanup obligations in the future, could result in significant costs and could adversely affect our financial condition, results of operations, cash flows and liquidity. Such remediation costs may not be covered by insurance and may make it difficult for us to secure insurance at acceptable rates in the future.

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The current regulatory rate setting structure may result in a significant delay, or "regulatory lag," from the time that we invest in infrastructure improvements, incur increased operating expenses or experience declining water usage, to the time at which we can address these events through the rate case application process; our inability to minimize regulatory lag could adversely affect our business.

There is typically a delay, or regulatory lag, between the time one of our regulated subsidiaries makes a capital investment or incurs an operating expense increase and the time when those costs are reflected in rates. In addition, billings permitted by state PUCs typically are, to a considerable extent, based on the volume of water usage in addition to a minimum base rate. Thus, we may experience a regulatory lag between the time our revenues are affected by declining usage and the time we are able to adjust the rate per gallon of usage to address declining usage. Our inability to reduce this regulatory lag could have an adverse effect on our financial condition, results of operations, cash flow and liquidity.

Several state PUCs are permitting rates to be adjusted outside of the rate case application process through surcharges that address capital investments to replace aging infrastructure, and increases in costs beyond the utility's control, such as purchased water costs, property taxes and other expenditures. These surcharge mechanisms enable us to adjust rates closer to the time costs have been incurred than would be the case under the rate case application process. Currently, seven states permit us to use infrastructure surcharges related to our capital investments to replace aging infrastructure. These surcharges periodically are adjusted based on factors such as project completion or future budgeted expenditures, and specific surcharges are eliminated once the related capital investment is incorporated in new PUC-approved base rates. In addition to the infrastructure surcharges, three states have permitted us to add surcharges for purchased water costs, one state has permitted us to add surcharges for power and conservation costs, and one state has permitted us to add surcharges for expenses such as utility and chemical costs. While these surcharges have been a positive development, some state PUCs have not approved surcharges for infrastructure improvement, no state PUC has enabled us to add a surcharge for all of the operating expenses described above, and no state PUC has enabled us to address declining water usage through a surcharge. Although we intend to expand our efforts to obtain state PUC approval of surcharges to address infrastructure investments, increases in operating expenses and declining water usage, our efforts may not be successful, in which case our business, financial condition, results of operations, cash flow and liquidity may be adversely affected.

Availability of water supplies, restrictions on use, natural hazards, severe weather conditions, competing uses and economic conditions may adversely affect our access to sources of water, the demand for water services or our ability to supply water to customers.

Our ability to meet the existing and future demand of our customers depends on the availability of an adequate supply of water. As a general rule, sources of public water supply, including rivers, lakes, streams and groundwater aquifers, are held in the public trust and are not owned by private interests. As a result, we typically do not own the water that we use in our operations, and the availability of our water supply is established through allocation rights (determined by legislation or court decisions) and passing-flow requirements set by governmental entities. Passing-flow requirements set minimum volumes of water that must pass through specified water sources, such as rivers and streams, in order to maintain environmental habitats and meet water allocation rights of downstream users. Allocation rights are imposed to ensure sustainability of major water sources and passing-flow requirements are most often imposed on source waters from smaller rivers, lakes and streams. These requirements, which can change from time to time, may adversely impact our water supply. Drought, overuse of sources of water, the protection of threatened species or habitats, or other factors may limit the availability of ground and surface water. For example, in our Monterey County, California operations, we are seeking to augment our sources of water supply, principally to comply with an order of the California State Water Resources Control Board that our subsidiary, California-American Water Company ("CAWC"), significantly decrease its diversion from the Carmel River in accordance with a reduction schedule running through December 31, 2016. We are also required to augment our Monterey County sources of water supply to comply with the requirements of the Endangered Species Act. We have implemented conservation rates and other programs to address demand and are utilizing aquifer storage and recovery facilities to store winter water

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for summer use. We were hopeful that we could address the water supply issues in a meaningful way through a Regional Desalination Project (the "Project") that was to be implemented through a Water Purchase Agreement and ancillary agreements (the "Agreements") among the Marina Coast Water District ("MCWD"), the Monterey County Water Resources Agency ("MCWRA") and CAWC. As part of the Project, CAWC was to construct a conveyance pipeline from the desalination facility. We also planned to construct four additional pipelines and two pump stations (the "Ancillary Facilities"). However, the Project was subject to considerable delay and disputes among the parties. In July 2011, MCWRA advised MCWD and CAWC that the Agreements were void. By letter delivered to MCWD and MCWRA on September 28, 2011, CAWC terminated the Agreements based on MCWRA's repudiation of the Agreements (MCWD has continued to assert that the Agreements remain in effect). Nevertheless, the parties agreed to participate in mediation in an attempt to resolve issues relating to the Project and the Agreements. In October 2011, during the pendency of the mediation, CAWC filed a petition (the "Petition") with the California Public Utility Commission ("CPUC") seeking clarification that it may go forward with constructing the Ancillary Facilities regardless of the status of the Project. MCWD and the California Division of Ratepayer Advocates are opposing the Petition. Ultimately, the mediation was not successful and ended on January 16, 2012. On January 17, 2012, CAWC announced that it had withdrawn support of the Agreements. In a prehearing conference with respect to the Petition, CAWC advised the administrative law judge assigned to the matter that it will seek CPUC approval of an alternate proposal. The administrative law judge directed CAWC to file, jointly with the MCWD and MCWRA if possible, a status report addressing various issues relating to the Project, and to submit a compliance filing to address CAWC's plans to move forward on a new project. The filings are due by March 1, 2012. We cannot predict the ultimate effect of the events described above on CAWC's efforts to secure alternative sources of water. If CAWC is unable to secure an alternative source of water, our business, financial condition, results of operations and cash flows could be adversely affected.

Government restrictions on water use may also result in decreased use of water services, even if our water supplies are sufficient to serve our customers, which may adversely affect our financial condition and results of operations. Seasonal drought conditions that would impact our water services are possible across all of our service areas. If a regional drought were to occur, governmental restrictions may be imposed on all systems within a region independent of the supply adequacy of any individual system. There were voluntary conservation efforts or water use restrictions implemented during certain periods of 2011 in Pennsylvania and New Jersey. Following drought conditions, water demand may not return to pre-drought levels even after restrictions are lifted. Decreased use of water services resulting from any of these events may adversely affect our business, financial condition, results of operations and cash flows.

Service interruptions due to severe weather events are possible across all our service areas. These include winter storms and freezing conditions, high wind conditions, tornados, earthquakes, high water conditions in or near designated flood plains, hurricanes and severe electrical storms. These weather events may affect the condition or operability of our facilities, limiting or preventing us from delivering water or wastewater services to our customers, or requiring us to make substantial capital expenditures to repair any damage. In the third quarter of 2011, our New Jersey and Pennsylvania subsidiaries experienced service interruptions in certain of our operating areas and, in some cases, a loss in customers as a result of the extreme weather, including Hurricane Irene and other severe storms in the Northeast. In addition, the devastating tornado that struck Joplin, Missouri on May 22, 2011 caused extensive damage to our infrastructure and the water distribution system. Among other things, we lost our service center and plant storage buildings and suffered damage to the roof and windows at our water treatment plant, as well as to many of our vehicles. In addition, while our water treatment plant remained operational, the lack of electricity forced us to operate on generator power until electric power was restored within the next two days. We also had to address more than 4,000 leaking customer service lines and 25 torn fire service lines. Because it was not possible to maintain system pressure initially, the Missouri Department of Natural Resources issued a boil water order. The order was lifted after we restored full pressure to the system, flushed the entire system and completed sampling tests, all within six days after the order was issued. Any interruption in our ability to supply water or to collect, treat and properly dispose of wastewater, or any costs associated with restoring service, could adversely affect our financial condition and results of operations.

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Furthermore, losses from business interruptions or damage to our facilities might not be covered by our insurance policies and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

Adverse economic conditions can cause our customers, particularly industrial customers, to curtail operations. A curtailment of operations by an industrial customer would typically result in reduced water usage. In more severe circumstances, the decline in usage could be permanent. Any decrease in demand resulting from difficult economic conditions could adversely affect our financial condition and results of operations.

Regulatory and environmental risks associated with the collection, treatment and disposal of wastewater may impose significant costs.

The wastewater collection, treatment and disposal operations of our subsidiaries are subject to substantial regulation and involve significant environmental risks. If collection or treatment systems fail, overflow, or do not operate properly, untreated wastewater or other contaminants could spill onto nearby properties or into nearby streams and rivers, causing damage to persons or property, injury to aquatic life and economic damages, which may not be recoverable in rates. This risk is most acute during periods of substantial rainfall or flooding, which are the main causes of sewer overflow and system failure. Liabilities resulting from such damage could adversely and materially affect our business, results of operations and financial condition. Moreover, if we are deemed liable for any damage caused by overflow, our losses might not be covered by insurance, and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

Our inability to efficiently implement our business transformation project, could result in higher than expected costs or otherwise adversely impact our operations and profitability.

We have undertaken a "business transformation" project, which is intended to improve our business processes and upgrade our antiquated core information technology systems. This multi-year, enterprise-wide initiative is intended to support our broader strategic initiatives. The project is intended to optimize workflow throughout our field operations, improve our back-office operations and enhance our customer service capabilities. The scale and anticipated future costs associated with the business transformation project are significant and we could incur costs significantly in excess of budgeted costs. Any technical or other difficulties in developing or implementing this initiative may increase the costs of the project and have an adverse effect on our operations and reporting processes, including our internal control over financial reporting. When we make adjustments to our operations, we may incur incremental expenses prior to realizing the benefits of a more efficient workforce and operating structure. Further, we may not realize anticipated cost improvements and greater efficiencies from the project. We can provide no guarantee that we will be able to achieve timely or adequate rate recovery of any increased costs associated with the business transformation project. As of December 31, 2011, expenditures on the project totaled \$139.7 million. We anticipate that total expenditures of as much as \$280 million will be required to complete the project.

Currently, we operate numerous information technology systems that have varying degrees of integration, sometimes leading to inefficiencies. Therefore, delays in completion of the business transformation project will also delay cost savings and efficiencies expected to result from the project. We may also experience difficulties consolidating our current systems, moving to a common set of operational processes and implementing a successful change management process. These difficulties may impact our ability to meet customer needs efficiently. Any such delays or difficulties may have a material and adverse impact on our business, client relationships and financial results.

Our Regulated Businesses require significant capital expenditures and may suffer if we fail to secure appropriate funding to make investments, or if we experience delays in completing major capital expenditure projects.

The water and wastewater utility business is very capital intensive. We invest significant amounts of capital to add, replace and maintain property, plant and equipment. In 2011, we invested \$924.9 million in net

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Company-funded capital improvements. The level of capital expenditures necessary to maintain the integrity of our systems could increase in the future. We fund capital improvement projects using cash generated from operations, borrowings under our revolving credit facility and commercial paper programs and issuances of long-term debt and equity securities. We can provide no assurance that we will be able to access the debt and equity capital markets on favorable terms or at all.

In addition, we believe that our dividend policy could limit our ability to pursue growth. In particular, the use of cash to pay dividends could affect our ability to make large acquisitions or pursue other growth opportunities that require cash investments in amounts greater than our available cash and external financing resources. In order to fund construction expenditures, acquisitions (including tuck-in acquisitions), principal and interest payments on our indebtedness, and dividends at the level currently anticipated under our dividend policy, we expect that we will need additional financing. However, we intend to retain sufficient cash from operating activities after the distribution of dividends to fund a portion of our capital expenditures.

If we do not obtain sufficient capital, we may be unable to maintain our existing property, plant and equipment, realize our capital investment strategies, meet our growth targets and successfully expand the rate base upon which we are able to earn future returns on our investment and a return of our investment. Even if we have adequate resources to make required capital expenditures, we face the additional risk that we will not complete our major capital expenditures on time, as a result of construction delays or other obstacles. Each of these outcomes could adversely affect our financial condition and results of operations.

Weather conditions could adversely affect demand for our water service and our revenues.

Demand for our water during the warmer months is generally greater than during cooler months due primarily to additional requirements for water in connection with irrigation systems, swimming pools, cooling systems and other outside water use. Throughout the year, and particularly during typically warmer months, demand tends to vary with temperature, rainfall levels and rainfall frequency. In the event that temperatures during the typically warmer months are cooler than normal, or if there is more rainfall than normal, the demand for our water may decrease and adversely affect our revenues.

Our inability to access the capital or financial markets could affect our ability to meet our liquidity needs at reasonable cost and our ability to meet long-term commitments, which could adversely affect our financial condition and results of operations.

In addition to cash from operations, we rely on our revolving credit facility, commercial paper programs, and the capital markets to satisfy our liquidity needs. In this regard, our principal external source of liquidity is our revolving credit facility. We regularly use our commercial paper program as a principal source of short-term borrowing due to the generally more attractive rates we obtain in the commercial paper market. However, disruptions in the capital markets could limit our ability to access capital. For example, in September 2008, we were unable to access short-term liquidity through our commercial paper program, and were compelled to borrow under our credit facilities with a syndicate of banks. This resulted in an increase in our borrowing costs until the time we again were able to access the commercial paper market. Although our difficulties in accessing capital were resolved as the severity of the recent financial crisis subsided, we cannot assume that similar adverse events in the financial markets will not occur again in the future. Moreover, while our credit facility lending banks have met all of their obligations, disruptions in the credit markets, changes in our credit ratings, or deterioration of the banking industry's financial condition could discourage or prevent lenders from meeting their existing lending commitments, extending the terms of such commitments, or agreeing to new commitments. In order to meet our short-term liquidity needs, particularly if borrowings through the commercial paper market are unavailable, we maintain an \$840 million revolving credit facility. Commitments of \$685 million under this revolving credit facility mature on September 15, 2013, and the remaining \$155 million of commitments expire on September 15, 2012. Our inability to renew or replace these commitments could materially increase our cost of capital and adversely affect our financial condition, results of operations and liquidity.

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American Water Capital Corp. ("AWCC"), our financing subsidiary, had no outstanding borrowings under the credit facilities and \$32.0 million of outstanding letters of credit under this credit facility as of February 21, 2012. AWCC had \$94.7 million of outstanding commercial paper as of February 21, 2012. We cannot assure that our lenders will meet their existing commitments or that we will be able to access the commercial paper or loan markets in the future on terms acceptable to us or at all.

Longer term disruptions in the capital and credit markets as a result of uncertainty, reduced financing alternatives, or failures of significant financial institutions could adversely affect our access to the liquidity needed for our business. Any significant disruption in the capital and credit markets, or financial institution failures could require us to take measures to conserve cash until the market stabilizes or until alternative financing can be arranged. Such measures could include deferring capital expenditures, reducing or suspending dividend payments, and reducing other discretionary expenditures.

Any impediments to our access to the capital markets, failure of our lenders to meet their commitments, increased interest expense, or cash conservation measures resulting from financial market disruptions or otherwise could adversely affect our business, financial condition, results of operations, cash flow, and liquidity.

Market conditions may unfavorably impact the value of benefit plan assets and liabilities, as well as assumptions related to the benefit plans, which may require us to provide significant additional funding.

The performance of the capital markets affects the values of the assets that are held in trust to satisfy significant future obligations under our pension and postretirement benefit plans. These assets are subject to market fluctuations, which may cause investment returns to fall below our projected return rates. A decline in the market value of the pension and postretirement benefit plan assets will increase the funding requirements under our pension and postretirement benefit plans if future returns on these assets are insufficient to offset the decline in value. Additionally, the Company's pension and postretirement benefit plan liabilities are sensitive to changes in interest rates. As interest rates decrease, thereby reducing returns, our liabilities increase, potentially increasing benefit expense and funding requirements. Further, changes in demographics, including increased numbers of retirements or increases in life expectancy assumptions may also increase the funding requirements of our obligations related to the pension and other postretirement benefit plans. Future increases in pension and other postretirement costs as a result of reduced plan assets may not be fully recoverable in rates, and our results of operations and financial position could be negatively affected.

In addition, market factors can affect assumptions we use in determining funding requirements with respect to our pension and postretirement plans. For example, a relatively modest change in our assumptions regarding discount rates can materially affect our calculation of funding requirements. To the extent that market data compels us to reduce the discount rate used in our assumptions, our benefit obligations could be materially increased, which could adversely affect our financial position and results of operations.

Our indebtedness could affect our business adversely and limit our ability to plan for or respond to changes in our business, and we may be unable to generate sufficient cash flows to satisfy our liquidity needs.

As of December 31, 2011, our indebtedness (including preferred stock with mandatory redemption requirements) was \$5,905.0 million, and our working capital (defined as current assets less current liabilities) was in a deficit position. Our indebtedness could have important consequences, including:

- limiting our ability to obtain additional financing to fund future working capital requirements or capital expenditures;
- exposing us to interest rate risk with respect to the portion of our indebtedness that bears interest at a variable rate;
- limiting our ability to pay dividends on our common stock or make payments in connection with our other obligations;

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- impairing our access to the capital markets for debt and equity
- likely requiring that an increasing portion of our cash flows from operations be dedicated to the payment of the principal of and interest on our debt, thereby reducing funds available for future operations, acquisitions, dividends on our common stock or capital expenditures;
- limiting our ability to take advantage of significant business opportunities, such as acquisition opportunities, and to react to changes in market or industry conditions; and
- placing us at a competitive disadvantage compared to those of our competitors that have less debt.

In order to meet our capital expenditure needs, we may be required to make additional borrowings under our credit facilities or issue new debt securities in the capital markets. Moreover, additional borrowings may be required to refinance outstanding indebtedness. Debt maturities and sinking fund payments in 2012 and 2013 are \$28.9 million and \$112.6 million, respectively. We can provide no assurances that we will be able to access the debt capital markets on favorable terms, if at all. If new debt is added to our current debt levels, the related risks we now face could intensify, limiting our ability to refinance existing debt on favorable terms.

We will depend primarily on operations to fund our expenses and to pay the principal and interest on our outstanding debt. Therefore, our ability to pay our expenses and satisfy our debt service obligations depends on our future performance, which will be affected by financial, business, economic, competitive, legislative, regulatory and other factors beyond our control. If we do not have sufficient cash flows to pay the principal and interest on our outstanding debt, we may be required to refinance all or part of our existing debt, sell assets, borrow additional funds or sell additional equity. In addition, if our business does not generate sufficient cash flows from operations, or if we are unable to incur indebtedness sufficient to enable us to fund our liquidity needs, we may be unable to plan for or respond to changes in our business, which could cause our operating results and prospects to be affected adversely.

Work stoppages and other labor relations matters could adversely affect our results of operations.

Currently, approximately 49% of our workforce is represented by unions. We have 83 collective bargaining agreements in place with 19 different unions representing our unionized employees. We might not be able to renegotiate labor contracts on terms that are favorable to us. Any negotiations or dispute resolution processes undertaken in connection with our labor contracts could be delayed or affected by labor actions or work stoppages. Labor actions, work stoppages or the threat of work stoppages, and our failure to obtain favorable labor contract terms during renegotiations may adversely affect our financial condition, results of operations, cash flows and liquidity. In September 2010, we declared "impasse" in negotiations of our national benefits agreement with most of the labor unions representing employees in our Regulated Businesses. The prior agreement expired on July 31, 2010; however, negotiations did not produce a new agreement. We implemented our "last, best and final" offer on January 1, 2011 in order to provide health care coverage for our employees in accordance with the terms of the offer. The unions have challenged our right to implement our last, best, and final offer. In this regard, following the filing by the Utility Workers Union of America of an unfair labor practice charge, the National Labor Relations Board ("NLRB") issued a complaint against us in January 2012, claiming that we implemented the last, best and final offer without providing sufficient notice of the existence of a dispute with the Federal Mediation and Conciliation Service, a state mediation agency, and several state departments of labor. We have asserted that we did, in fact, provide sufficient notice. A hearing date on the matter has not been set. In addition, six local unions filed grievances or demands for arbitration under their respective local collective bargaining agreements regarding our implementation of the last, best and final offer. In response, we filed a declaratory judgment action against the local unions in United States District Court for the District of New Jersey seeking, among other things, an injunction preventing the unions from filing grievances or demanding arbitration under the local collective bargaining agreements with respect to the implementation of our last, best and final offer. Three of the unions were removed from the litigation after they agreed to a dismissal with prejudice. Two of the unions were removed from the New Jersey District Court action, and the Company is pursuing similar declaratory judgment actions against the unions in United States District Courts in Pennsylvania and West Virginia. We will continue to defend our position in any challenge presented by the unions. In addition to

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the expired national benefit agreement, five local union contracts covering approximately 700 employees expired without a new agreement being reached prior to December 31, 2011. One contract relating to employees in St. Louis, Missouri was negotiated to impasse and our last, best, and final offer was implemented on July 11, 2011. In addition, over one-quarter of our local union contracts will expire during 2012. Although no work stoppages have occurred with respect to the expired contracts described above, we cannot provide assurance that a work stoppage or strike will not occur. While we have developed contingency plans to be implemented as necessary if a work stoppage or strike does occur, we cannot assure that a strike or work stoppage would not have a material adverse impact on our results of operations, financial position or cash flows.

Contamination of our sources of water could result in service interruptions and human exposure to hazardous substances and subject our subsidiaries to civil or criminal enforcement actions, private litigation and cleanup obligations.

Our water supplies are subject to contamination, including contamination from naturally-occurring compounds, chemicals in groundwater systems, pollution resulting from man-made sources, such as perchlorate and methyl tertiary butyl ether ("MTBE"), and possible terrorist attacks. If one of our water supplies is contaminated, we may have to interrupt the use of that water supply and locate an adequate supply of water from another water source, including, in some cases, through the purchase of water from a third-party supplier. If we are unable to access a substitute water supply in a cost-effective manner, our financial condition, results of operations, cash flows, liquidity and reputation may be adversely affected. In addition, we may incur significant costs in order to treat the contaminated source through expansion of our current treatment facilities, or development of new treatment methods. We might not be able to recover costs associated with treating or decontaminating water supplies through rates, or recovery of these costs may not occur in a timely manner. Moreover, we could be held liable for environmental damage as well as damages arising from toxic tort or other lawsuits, criminal enforcement actions, contractual obligations or other consequences arising out of human exposure to hazardous substances in our drinking water supplies.

The failure of, or the requirement to repair, upgrade or dismantle, any of our dams may adversely affect our financial condition and results of operations.

We own approximately 100 dams. A failure of any of those dams could result in injuries and downstream property damage for which we may be liable. The failure of a dam would also adversely affect our ability to supply water in sufficient quantities to our customers and could adversely affect our financial condition and results of operations. Any losses or liabilities incurred due to a failure of one of our dams might not be covered by insurance policies or be recoverable in rates, and such losses may make it difficult for us to secure insurance at acceptable rates in the future.

We also are required from time to time to decommission, repair or upgrade the dams that we own. The cost of such repairs can be and has been material. We might not be able to recover such costs through rates. The inability to recover these higher costs or delayed recovery of the costs as a result of regulatory lag can affect our financial condition, results of operations, cash flows and liquidity. The federal and state agencies that regulate our operations may adopt rules and regulations requiring us to dismantle our dams. In Monterey County, California, CAWC filed an application with the CPUC in September, 2010 to seek approval for a project to reroute the Carmel River and remove the San Clemente Dam, which is owned by CAWC. As part of the application, CAWC is seeking recovery of certain historical costs, totaling approximately \$26.9 million, related to studies to determine whether the dam could withstand significant flooding and severe earthquakes meeting defined criteria, efforts to develop a project to address seismic issues, the identification and analysis of possible alternative project options, and activities undertaken pursuant to the directives of Federal and State government agencies, including the California Department of Water Resources, Division of Safety of Dams ("DSOD"), which is acting as the lead agency under the State and Federal environmental review laws. On November 10, 2011, a Proposed Decision ("PD") was issued by the administrative law judge assigned to the matter. In the PD, the administrative law judge recommended that recovery of virtually all of the historical costs should be denied.

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CAWC has filed comments with the CPUC contending that the PD is unreasonable, unsupported by and contrary to the evidence, and contrary to law and policy. The PD is currently under review by the CPUC, which has delayed issuing a decision on several occasions and most recently has indicated that it will not vote on a decision until April 19, 2012. While we believe there are sound reasons for the CPUC to modify the PD to permit recovery of the historical costs, in the event recovery is not permitted, our results of operations would be materially adversely affected for the period in which we incur a charge with respect to the write off of the historical costs, most of which currently are recorded as regulatory assets, and our cash flows in future years would be adversely affected.

Any failure of our network of water and wastewater pipes and water reservoirs could result in losses and damages that may affect our financial condition and reputation.

Our operating subsidiaries distribute water and collect wastewater through an extensive network of pipes and store water in reservoirs located across the United States. A failure of major pipes or reservoirs could result in injuries and property damage for which we may be liable. The failure of major pipes and reservoirs may also result in the need to shut down some facilities or parts of our network in order to conduct repairs. Such failures and shutdowns may limit our ability to supply water in sufficient quantities to our customers and to meet the water and wastewater delivery requirements prescribed by government regulators, including state PUCs with jurisdiction over our operations, and adversely affect our financial condition, results of operations, cash flows, liquidity and reputation. Any business interruption or other losses might not be covered by insurance policies or be recoverable in rates, and such losses may make it difficult for us to secure insurance at acceptable rates in the future. Moreover, to the extent such business interruptions or other losses are not covered by insurance, they may not be recovered through rate adjustments.

Risks associated with our portfolio optimization efforts may adversely affect us.

Under our portfolio optimization initiative, we will continue to seek to acquire or invest in additional water and/or wastewater systems while disposing of other systems. These transactions are designed to enable us to achieve a more rationalized portfolio, cost structure improvements and an enhanced financial profile. We will consider acquiring systems in markets in the United States where we do not currently operate our Regulated Businesses and through tuck-ins. We also will continue to seek to enter into related market-based businesses and services that complement our businesses. Acquisition transactions may result in:

- incurrence of debt and contingent liabilities;
- dilutive issuances of our equity securities;
- failure to realize anticipated benefits;
- failure of acquired entities to have or to maintain effective internal control over financial reporting;
- fluctuations in quarterly results;
- exposure to unknown risks and liabilities, such as environmental liabilities; and
- other acquisition-related expenses.

With respect to dispositions, we may be unable to sell, on acceptable terms, systems that we no longer believe are suitable for our portfolio.

We may also experience difficulty in obtaining required regulatory approvals for acquisitions or dispositions, and any regulatory approvals we obtain may require us to agree to costly and restrictive conditions imposed by regulators. We may not identify all significant risks when reviewing a potential transaction, and we could be exposed to potential liabilities for which we will not be indemnified or, in the case of dispositions, we may be required to continue to assume liabilities with respect to systems that we sell. We also may encounter difficulties in integrating new businesses, including bringing newly acquired businesses up to the necessary level of regulatory compliance, retaining and integrating key personnel, achieving strategic objectives and integrating

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acquired assets and technological systems. The demands of identifying and transitioning newly acquired businesses or pursuing investment opportunities may also divert management's attention from other business concerns and otherwise disrupt our business. Any of these risks may adversely affect our financial condition, results of operations and cash flows.

Changes in laws and regulations over which we have no control and changes in certain agreements can significantly affect our business and results of operations.

New legislation, regulations, government policies or court decisions can materially affect our operations. The individuals who serve as regulators are elected or are political appointees. Therefore, elections which result in a change of political administration or new appointments may also result in changes in the individuals who serve as regulators and the policies of the regulatory agencies that they serve. New laws or regulations, new interpretations of existing laws or regulations, changes in agency policy, including those made in response to shifts in public opinion, or conditions imposed during the regulatory hearing process may affect our business in a number of ways that could have an adverse effect on our business, financial condition, results of operations, cash flows and liquidity, including the following:

- making it more difficult for us to raise our rates and, as a consequence, to recover our costs or earn our expected rates of return;
- changing the determination of the costs, or the amount of costs, that would be considered recoverable in rate cases;
- changing water quality or delivery service standards or wastewater collection, treatment, discharge and disposal standards with which we must comply;
- restricting our ability to terminate our services to customers who owe us money for services previously provided or limiting our bill collection efforts;
- requiring us to provide water services at reduced rates to certain customers;
- restricting our ability to buy or sell assets or issue securities;
- changing regulations that affect the benefits we expected to receive when we began offering services in a particular area;
- changing or placing additional limitations on change in control requirements relating to any concentration of ownership of our common stock;
- making it easier for governmental entities to convert our assets to public ownership via eminent domain;
- placing limitations, prohibitions or other requirements on the sharing of information and transactions by or between a regulated utility and its affiliates, including us, our service company and any of our other subsidiaries;
- restricting or prohibiting our extraction of water from rivers, streams, reservoirs or aquifers; and
- revoking or altering the terms of the certificates of public convenience and necessity (or similar authorizations) issued to us by state PUCs.

We have recorded a significant amount of goodwill, and we may never realize the full value of our intangible assets, causing us to record impairments that may negatively affect our results of operations.

Our total assets include substantial goodwill. At December 31, 2011, our goodwill totaled \$1,195.1 million. The goodwill is primarily associated with the acquisition of American Water by an affiliate of our previous owner in 2003 and the acquisition of E'Town Corporation by a predecessor to our previous owner in 2001. Goodwill represents the excess of the purchase price the purchaser paid over the fair value of the net tangible and

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intangible assets acquired. Goodwill is recorded at fair value on the date of an acquisition and is reviewed annually or more frequently if changes in circumstances indicate the carrying value may not be recoverable. As required by the applicable accounting rules, we have taken significant non-cash charges to operating results for goodwill impairments in the past. In the first quarter of 2009, we recorded a non-cash charge to our financial results for a goodwill impairment in the amount of \$450.0 million, which reduced net income by \$443.0 million. In the aggregate, goodwill impairment charges including those recognized in our discontinued operations taken in each year from 2006 through 2009 totaled approximately \$1.93 billion and reduced net income by approximately \$1.91 billion.

We may be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to our performance. These market events could include a decline over a period of time of our stock price, a decline over a period of time in valuation multiples of comparable water utilities, the lack of an increase in our market price consistent with our peer companies, or decreases in control premiums. A decline in the forecasted results in our business plan, such as changes in rate case results or capital investment budgets or changes in our interest rates, could also result in an impairment charge. Recognition of impairments of a significant portion of goodwill would negatively affect our reported results of operations and total capitalization, the effect of which could be material and could make it more difficult to maintain its credit ratings, secure financing on attractive terms, maintain compliance with debt covenants and meet expectations of our regulators.

The assets of our Regulated Businesses are subject to condemnation through eminent domain.

Municipalities and other government subdivisions have historically been involved in the provision of water and wastewater services in the United States, and organized efforts may arise from time to time in one or more of the service areas in which our Regulated Businesses operate to convert our assets to public ownership and operation through exercise of the governmental power of eminent domain. Should a municipality or other government subdivision seek to acquire our assets through eminent domain, we may resist the acquisition. Contesting an exercise of condemnation through eminent domain may result in costly legal proceedings and may divert the attention of the affected Regulated Business's management from the operation of its business. Moreover, our efforts to resist the acquisition may not be successful.

If a municipality or other government subdivision succeeds in acquiring the assets of one or more of our Regulated Businesses through eminent domain, there is a risk that we will not receive adequate compensation for the business, that we will not be able to keep the compensation, or that we will not be able to divest the business without incurring significant one-time charges.

We may not be able to fully utilize our U.S. and state net operating loss carryforwards.

As of December 31, 2011, we had U.S. federal and state net operating loss ("NOL") carryforwards of approximately \$1,187.4 million and \$739.8 million, respectively. Our federal NOL carryforwards begin to expire in 2024, and our state NOL carryforwards will expire between 2012 and 2031. Our ability to utilize our NOL carryforwards is primarily dependent upon our ability to generate sufficient taxable income. Moreover, because our previous owner's divestiture of its stock was considered an "ownership change" under Section 382 of the Internal Revenue Code, the amount of NOL carryforwards that may be utilized in any year is limited. Our management believes the federal NOL carryforwards are more likely than not to be recovered and therefore currently require no valuation allowance. At December 31, 2011, \$196.1 million of the state NOL carryforwards have been offset by a valuation allowance because the Company does not believe these NOLs will more likely than not be realized in the future, and we have, in the past, been unable to utilize certain of our NOLs. The establishment or increase of a valuation allowance in the future would reduce our deferred income tax assets and our net income.

Our actual results may differ from those estimated by management in making its assessment as to our ability to use the NOL carryforwards. Moreover, changes in income tax laws, the economy and general business environment could affect the future utilization of the NOL carryforwards. If we are unable to fully utilize our NOL carryforwards to offset taxable income generated in the future, our financial position, results of operations and cash flows could be materially adversely affected.

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Our Market-Based Operations, through American Water (excluding our regulated subsidiaries) provide performance guarantees, including financial guarantees or deposits, to our public-sector and public clients, who may seek to enforce the guarantees if our Market-Based Operations do not satisfy certain obligations.

Under the terms of some of our agreements for the provision of services to water and wastewater facilities with municipalities, other governmental entities and other customers, American Water (excluding our regulated subsidiaries) provides guarantees of specified performance obligations of our Market-Based Operations, including financial guarantees or deposits. In the event our Market-Based Operations fail to perform these obligations, the entity holding the guarantees may seek to enforce the performance commitments against us or proceed against the deposit. In that event, our financial condition, results of operations, cash flows, and liquidity could be adversely affected.

At December 31, 2011, we had remaining performance commitments as measured by remaining contract revenue totaling approximately \$3,113.0 million, and this amount is likely to increase if our Market-Based Operations grow. The presence of these commitments may adversely affect our financial condition and make it more difficult for us to secure financing on attractive terms.

Our Market-Based Operations' long-term contracts with the Department of Defense may be terminated for the convenience of the U.S. Government and are subject to periodic contract price redetermination.

All of our contracts with the Department of Defense for the operation and maintenance of water and wastewater systems may be terminated, in whole or in part, prior to the end of the 50-year term for convenience of the U.S. Government or as a result of default or non-performance by the subsidiary performing the contract. In addition, the contract price for each of these military contracts is subject to redetermination two years after commencement of operations and every three years thereafter. Price redetermination is a contract mechanism to periodically adjust the service fee in the next period to reflect changes in contract obligations and anticipated market conditions. Any early contract termination or unfavorable price redetermination could adversely affect our results of operations.

We operate a number of water and wastewater systems under O&M contracts and face the risk that the owners of those systems may fail to maintain those systems, which may negatively affect us as the operators of the systems.

We operate a number of water and wastewater systems under O&M contracts. Pursuant to these contracts, we operate the system according to the standards set forth in the applicable contract, and it is generally the responsibility of the owner to undertake capital improvements. In some cases, we may not be able to convince the owner to make needed improvements in order to maintain compliance with applicable regulations. Although violations and fines incurred by water and wastewater systems may be the responsibility of the owner of the system under these contracts, those non-compliance events may reflect poorly on us as the operator of the system and damage our reputation, and in some cases, may result in liability to the same extent as if we were the owner.

Our Market-Based Operations are party to long-term contracts to operate and maintain water and wastewater systems under which we may incur costs in excess of payments received.

Some of our Market-Based Operations enter into long-term contracts pursuant to which they agree to operate and maintain a municipality's, federal government's or other party's water or wastewater treatment and delivery facilities, which includes responsibility for certain major maintenance for some of those facilities, in exchange for an annual fee. Our Market-Based Operations are generally subject to the risk that costs associated with operating and maintaining the facilities, including production costs such as purchased water, electricity, fuel and chemicals used in water treatment, may exceed the fees received from the municipality or other contracting party. In addition, directly or through our market-based subsidiaries, we often guarantee our Market-Based Operations' obligations under those contracts. Losses under these contracts or guarantees may adversely affect our financial condition, results of operations, cash flows and liquidity.

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We rely on our information technology ("IT") systems to assist with the management of our business and customer and supplier relationships, and a disruption of these systems could adversely affect our business.

Our IT systems are an integral part of our business, and a serious disruption of our IT systems could significantly limit our ability to manage and operate our business efficiently, which, in turn, could cause our business and competitive position to suffer and adversely affect our results of operations. We depend on our IT systems to bill customers, process orders, provide customer service, manage construction projects, manage our financial records, track assets, remotely monitor certain of our plants and facilities and manage human resources, inventory and accounts receivable collections. Our IT systems also enable us to purchase products from our suppliers and bill customers on a timely basis, maintain cost-effective operations and provide service to our customers. A number of our current IT systems are antiquated, and it is increasingly difficult to obtain upgrades to, and support for, these systems. While we intend to replace these systems through the business transformation process described above, for the time being we remain subject to risks that are underscored by the age of our IT systems. Specifically, our IT systems are vulnerable to damage or interruption from:

- power loss, computer systems failures, and internet, telecommunications or data network failures;
- operator negligence or improper operation by, or supervision of, employees;
- physical and electronic loss of customer data due to security breaches, misappropriation and similar events;
- computer viruses;
- intentional acts of vandalism and similar events; and
- hurricanes, fires, floods, earthquakes and other natural disasters.

These events may result in physical and electronic loss of customer or financial data, security breaches, misappropriation and other adverse consequences. In addition, the lack of redundancy for certain of our IT systems, including billing systems, could exacerbate the impact of any of these events on us.

In addition, we may not be successful in developing or acquiring technology that is competitive and responsive to the needs of our business, and we might lack sufficient resources to make the necessary upgrades or replacements of our outdated existing technology to allow us to continue to operate at our current level of efficiency.

We may be required to adopt International Financial Reporting Standards ("IFRS") or changes in generally accepted accounting principles in the United States ("GAAP") that, among other things, could limit our ability to defer recognition of costs deemed material or otherwise could negatively impact our business, financial condition or results of operations.

Currently, our accounting and financial reporting is based on GAAP. In 2008, the SEC proposed a series of milestones, sometimes referred to as the "Proposed Roadmap," that would guide the SEC in determining whether to transition from GAAP to IFRS. Among matters considered by the SEC was a staged transition into IFRS reporting for public companies, beginning for fiscal years ending on or after December 15, 2014 for the largest public companies. However, persons commenting on the Proposed Roadmap expressed differing views about the proposed approach. In response, the SEC issued a statement in February 2010 that, while expressing the SEC's continued support for a single set of high-quality global accounting standards, directed the SEC staff to execute a work plan to aid the SEC in evaluating the impact that the use of IFRS by U.S. companies would have on the securities market. The SEC staff has not yet issued a final report on the work plan. Recent statements by the SEC staff have indicated that the final report on the work plan may be expected in 2012. It is unclear whether the SEC will decide whether, and if so when, IFRS would be incorporated into financial reporting by U.S. public companies.

Another initiative that has affected financial reporting by U.S. public companies is efforts by the U.S. Financial Accounting Standards Board, or the "FASB," and the International Accounting Standards Board, or the

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"IASB," to develop compatible accounting standards for use in both domestic and cross-border financial reporting. The FASB and IASB have worked on a number of projects to achieve accounting convergence with respect to specific accounting topics, which have resulted in the adoption of some new standards and continuing efforts on other topics.

Under GAAP, we are subject to the accounting procedures to address the effects of certain types of regulation, which, among other things, allow us to defer recognition of certain costs and record them on the balance sheet as regulatory assets if we believe it is probable that we will be allowed to recover those costs through future rate increases. Currently, IFRS does not contain provisions equivalent to the current GAAP accounting procedures. The adoption of the IFRS standards or the adoption of other new accounting or financial reporting standards, either through the convergence efforts of the FASB and IASB or otherwise, could affect our reported performance, which in turn could unfavorably impact our business, financial condition or results of operations. Furthermore, the transition to and application of new accounting or financial reporting standards could result in increased administrative costs.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our properties consist of transmission and distribution mains and conduits, water and wastewater treatment plants, pumping wells, tanks, meters, supply lines, dams, reservoirs, buildings, vehicles, land, easements, software rights and other facilities and equipment used for the operation of our systems, including the collection, treatment, storage and distribution of water, and the collection and treatment of wastewater. Substantially all of our properties are owned by our subsidiaries, and a substantial portion of our property is subject to liens of our mortgage bonds. We lease our corporate offices, equipment and furniture, located in Voorhees, New Jersey from certain of our wholly-owned subsidiaries. These properties are utilized by our directors, officers and staff in the conduct of the business.

Our regulated subsidiaries own, in the states in which they operate, transmission and distribution mains, pump stations, treatment plants, storage tanks, reservoirs and related facilities. A substantial acreage of land is owned by our Regulated Businesses, the greater part of which is located in watershed areas, with the balance being principally sites of pumping and treatment plants, storage reservoirs, tanks and standpipes. Our Market-Based Operations' properties consist mainly of spreading and waste transportation equipment, office furniture and IT equipment and are primarily located in New Jersey and Canada. Approximately 50% of all our properties are located in New Jersey and Pennsylvania.

We maintain property insurance against loss or damage to our properties by fire or other perils, subject to certain exceptions. For insured losses, we are self-insured to the extent that any losses are within the policy deductible or exceed the amount of insurance maintained. Any such losses could have a material adverse effect on our consolidated financial condition or results of operations.

We believe that our properties are generally maintained in good operating condition and in accordance with current standards of good water and wastewater works industry practice, and units of property are replaced as and when necessary.

ITEM 3. LEGAL PROCEEDINGS

Alternative Water Supply in Lieu of Carmel River Diversions

In 1995, the California State Water Resources Control Board issued an administrative order (the "1995 Order") to CAWC requiring CAWC to implement an alternative water supply in lieu of diversions from the Carmel River.

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The State Water Resources Control Board held administrative hearings in the summer of 2008 to address claims that CAWC has exceeded its water diversion rights in the Carmel River and has not diligently pursued establishing an alternative water supply as required by the 1995 Order. The State Water Resources Control Board adopted a Cease and Desist Order applicable to CAWC on October 20, 2009 (the "2009 Order"). The 2009 Order finds that CAWC has not sufficiently implemented actions to terminate its unpermitted diversions from the Carmel River as required by the 1995 Order. The 2009 Order requires, among other things, that CAWC significantly decrease its yearly diversions from the Carmel River according to a set reduction schedule running from the date the 2009 Order was adopted until December 31, 2016, at which point all unpermitted diversions must end. Failure to effect the decrease in diversions mandated by the 2009 Order could result in substantial penalties. The 2009 Order also requires that CAWC plan, design and implement, within 24 months of the date the 2009 Order was adopted, a project or projects designed to reduce the need for Carmel River diversions by at least 500 acre feet per year. CAWC constructed an aquifer storage and recovery well that satisfied this requirement in advance of the 24 month deadline. CAWC has appealed the 2009 Order to the Superior Court of California challenging the findings and requirements of the 2009 Order. We can provide no assurances, however, that the appeal will be successful or that, if unsuccessful, CAWC will be able to comply with the diversion reduction requirements and other remaining requirements under the 2009 Order or that any such compliance will not result in material additional costs or obligations to us. On December 2, 2010, the CPUC approved the Project, involving the construction of a desalination facility on the California central coast, north of Monterey. The Project was to be implemented through Agreements among the MCWD, the MCWRA and CAWC. As part of the Project, a conveyance pipeline from the desalination facility, designed to facilitate CAWC's purchase of water from the facility, was to be constructed by CAWC. The CPUC also approved construction of four additional pipelines and two pump stations (the "Ancillary Facilities"). The desalination facility was to be constructed and owned by MCWD, and MCWRA was to construct the wells that were to supply water to the desalination facility. The Project was intended, among other things, to fulfill CAWC's obligations under the 1995 Order, in addition to other obligations.

The Project was subject to delay due to, among other things, funding delays and investigations and inquiries initiated by public authorities relating to an alleged conflict of interest concerning a former member of the MCWRA Board of Directors (the "Former Director"). The Former Director was paid for consulting work by a contractor to MCWD while serving on the MCWRA Board of Directors. The contractor subsequently was retained as project manager for the Project. On July 7, 2011, MCWRA advised MCWD and CAWC that the Agreements were void as a result of the conduct of the Former Director. Subsequently, on August 12, 2011, CAWC advised MCWD and MCWRA that they have defaulted in performance of certain financing obligations under the Water Purchase Agreement. By letter delivered to MCWD and MCWRA on September 28, 2011, CAWC terminated the Agreements, based on MCWRA's repudiation of the Agreements. In other communications among the parties, each of MCWD and MCWRA have stated that it complied with the financing obligations, and MCWD further responded that, among other things, CAWC did not comply on a timely basis with an obligation under the Water Purchase Agreement that CAWC provide a letter of credit. MCWD has also asserted that the Agreements remain in effect.

CAWC, MCWRA and MCWD agreed to participate in a mediation process with respect to disputes among the parties relating to the Agreements. In October 2011, during the pendency of the mediation, CAWC filed the Petition with the CPUC seeking clarification that it may go forward with constructing the Ancillary Facilities regardless of the status of the Project. MCWD and the California Division of Ratepayer Advocates are opposing the Petition.

Ultimately, the mediation was not successful, and terminated on January 16, 2012. On January 17, 2012, CAWC announced that it has withdrawn support of the Agreements. In addition, CAWC has evaluated various alternatives to the Project. At a prehearing conference with respect to the Petition held on January 24, 2012, CAWC advised the administrative law judge assigned to the matter that it will seek CPUC approval of an alternate project. The administrative law judge directed CAWC to file, jointly with MCWD and MCWRA if

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possible, a status report addressing various issues related to the Project and to submit a compliance filing to address CAWC's plans to move forward on a new project. The filings are due by March 1, 2012. We cannot predict the ultimate effect of the events described above on CAWC's efforts to secure alternative sources of water.

San Clemente Dam

The San Clemente Dam is a 106-foot high concrete arch dam located approximately 18.5 miles from the Pacific Ocean on the Carmel River. It was constructed in 1921 and has been operated by CAWC since 1966. In 1980, the DSOD directed CAWC to evaluate the structural integrity of the dam in the event of severe earthquakes or floods that could overtop the dam. In 1992, CAWC concluded that under certain conditions, the San Clemente Dam might not be stable in the event of a "Maximum Credible Earthquake" (the maximum earthquake that appears capable of occurring under the presently known geologic framework). The studies also concluded that a "Probable Maximum Flood" (the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that is reasonably possible in the drainage basin under study) could overtop the dam by fourteen feet and cause excessive erosion in the area of the downstream abutments. Based on these findings, DSOD ordered CAWC to improve the San Clemente Dam to address these issues.

Since 1992, there have been numerous engineering and environmental studies regarding the proposed solution to the San Clemente Dam's stability. Although dam buttressing was originally the favored project of CAWC and DSOD, CAWC began to explore dam removal on a parallel track in response to comments made by the National Oceanic and Atmospheric Administration's National Marine Fisheries Services ("NMFS") on DSOD's 1999 Draft Environmental Impact Report. DSOD certified the Final Environmental Impact Report/Environmental Impact Statement ("EIR/EIS") in January 2008. The Final EIR/EIS focused on two possible projects, the dam buttressing project and a project to reroute the Carmel River and remove the dam (the "Reroute and Removal Project"), but remained neutral as to which project CAWC should pursue.

Currently, the Reroute and Removal Project is CAWC's preferred project. Subject to CPUC approval and ratepayer recovery, CAWC has committed to pay an amount equivalent to the estimated cost of buttressing the dam (approximately \$49 million). The California State Coastal Conservancy has committed to secure approximately \$34 million from State, Federal, and private foundation resources to fund the difference between the approximate cost of dam buttressing and the cost of the Reroute and Removal Project. In September 2011, CAWC filed an application with the CPUC for authorization to implement the Reroute and Removal Project and to recover through rates the \$49 million prospective costs associated with the Reroute and Removal Project over a twenty-year period. In addition, CAWC sought to recover certain historical costs, totaling approximately \$26.9 million, related to studies to determine whether the dam could withstand a Probable Maximum Flood and or Maximum Credible Earthquake, efforts to develop a project to address seismic issues, the identification and analysis of possible alternative project options, and activities undertaken pursuant to the directives of Federal and State government agencies, including DSOD, which is acting as the lead agency under the State and Federal environmental review laws.

On November 10, 2011, the administrative law judge assigned to the application issued a PD denying recovery of virtually all of the historical costs, but providing recovery of the \$49 million prospective costs over a twenty-year period. The administrative law judge also recommended placing a firm cap on projected costs (i.e., additional unanticipated costs could not be recovered), and imposing additional limitations such as exclusion of any equity return from the recovery and reduction of the amount to be recovered based on the appraisal value of land to be donated by CAWC. In response, CAWC filed comments with the CPUC contending that the PD is unreasonable, unsupported by and contrary to the evidence, and contrary to law and policy. On January 4, 2012, the administrative law judge issued a revised PD, recommending that CAWC be ordered to show cause why it should not be fined or otherwise sanctioned for an alleged misrepresentation regarding descriptions of the use of the dam as a point of water diversion. We believe the administrative law judge's allegation is meritless and

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vigorously disagree with the administrative law judge's characterization. CAWC has requested the opportunity to respond to the unfounded allegation and demonstrate that it is invalid.

CAWC has met with the CPUC Commissioners to communicate the various reasons it believes the PD should be modified or an alternate decision should be issued. The PD is currently under review by the CPUC, which has delayed issuing a decision on several occasions and most recently has indicated that it will not vote on a decision until April 19, 2012. While the Company believes there are sound reasons for the CPUC to modify the PD to permit recovery of at least most historical costs and overturn other recommendations adverse to CAWC, in the event recovery of the historical costs is not permitted, the Company would, among other things, incur a charge to earnings with respect to the write-off of most of the historical costs, which currently are reflected in regulatory assets.

Endangered Species Matters

In 1998, the National Oceanic and Atmospheric Administration, (the "NOAA"), listed the South Central California Coast steelhead trout as threatened pursuant to the federal Endangered Species Act, and subsequently designated the Carmel River as critical habitat for those trout. In 2001, CAWC entered into a conservation agreement with NOAA, requiring CAWC to implement certain measures to protect the steelhead trout and its habitat in the Carmel River watershed, study the removal of the previously mentioned San Clemente Dam and explore long-term water sources other than a new reservoir in the Carmel River. Since that time, CAWC has implemented a number of measures to reduce the impact of its operations on the steelhead trout and other species, including pursuing permits to construct the previously mentioned desalination project as an alternative source of water. In early 2004, NOAA informed CAWC of its concern that CAWC's ongoing operations would cause the "take" of significant numbers of steelhead trout during the several remaining years required to implement the desalination project. In June 2006, CAWC and NOAA entered a settlement agreement whereby CAWC agreed to fund certain additional projects to improve habitat conditions for and aid in the recovery of steelhead trout in the Carmel River watershed. Under this 2006 agreement, CAWC was required, among other things, to make an initial payment of \$3.5 million plus six annual installments of \$1.1 million. The settlement agreement required that all payments made by CAWC to NOAA be used for mitigation projects in the Carmel River watershed. NOAA agreed not to assess any penalties or otherwise prosecute CAWC for any "take" of steelhead trout, so long as CAWC complied with the settlement agreement. Effective March 3, 2009, CAWC and NOAA executed an amended settlement agreement, which supersedes the 2006 agreement, to allow the required payments to be made to and managed by a California state agency under an existing mitigation program, thereby ensuring that settlement payments will be used for mitigation projects in the Carmel River watershed (the lack of such assurance caused CAWC to delay payments under the 2006 agreement). The 2009 amendment also extended the duration of the agreement for an additional year, which, among other things, resulted in CAWC's agreement to make an additional \$1.1 million payment and a one year extension of NOAA's agreement not to assess any penalties or otherwise prosecute CAWC for any "take" of steelhead trout. Consistent with the amended agreement, CAWC paid an initial \$3.5 million in April 2009, made the first \$1.1 million installment payment in July 2010, the second \$1.1 million installment payment in July 2011 and is scheduled to make the third installment payment in July 2012, and additional installment payments annually through July 2016. The settlement agreement authorizes CAWC to terminate these payments once CAWC has complied with the State Water Resources Control Board's 1995 order to reduce its diversions.

The CPUC has authorized the recovery through rates of, and CAWC is recovering, the initial \$3.5 million payment and the 2009 installment payment. CAWC's application for recovery of the 2010 installment payment is pending before the CPUC, and CAWC plans to file an application for recovery of the 2011 and 2012 payments in the second half of 2012.

The settlement agreement also requires CAWC and NOAA to meet and negotiate a resolution to NOAA's concerns regarding changes to CAWC's operations on the Carmel River to protect the fish and improve its habitat. CAWC and NOAA have deferred these additional negotiations. CAWC also undertakes activities to

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protect the threatened California red-legged frog and its habitat in the Carmel River pursuant to a prior agreement with the U.S. Fish and Wildlife Service ("USFWS"). This agreement has expired, and CAWC is in discussions with USFWS to renew the agreement.

On March 14, 2008, the Sierra Club and the Carmel River Steelhead Association notified CAWC of their intent to file a citizen suit, 60 days therefrom, for violations of the federal Endangered Species Act alleging the "take" of steelhead trout by CAWC along the Carmel River and seeking injunctive relief to reduce river water diversions and increase river flow and fish passage facilities. On June 25, 2009, the Sierra Club and the Carmel River Steelhead Association filed suit in United States District Court for the Northern District of California, seeking to enjoin CAWC's pumping on the Carmel River. The suit was dismissed on CAWC's motion on January 8, 2010. The Sierra Club and the Carmel River Steelhead Association also filed an administrative complaint with the California State Water Resources Control Board in December 2008, claiming that certain fish passage facilities do not meet existing permit requirements. The State Water Resources Control Board has not acted on this complaint pending the completion of work that CAWC is undertaking to improve fish passage at that dam.

Other Matters

In addition, in November 2010, the Ontario Ministry of Justice commenced a proceeding against Terratec Environmental Ltd., one of the Company's Canadian subsidiaries, alleging the violation of the Ontario Water Resource Act, in connection with the alleged discharge of anaerobic digestate into a creek that leads to Lake Ontario. Terratec has been engaged in negotiations with the Ontario Ministry of Justice to settle this matter and anticipates that penalties will not be material.

Periodically, the Company is involved in other proceedings or litigation arising in the ordinary course of business. We do not believe that the ultimate resolution of these matters will materially affect the Company's financial position or results of operations. However, litigation and other proceedings are subject to many uncertainties, and the outcome of individual matters is not predictable with assurance. It is possible that some litigation and other proceedings could be decided unfavorably to us, and that any such unfavorable decisions could have a material adverse effect on the Company's business, financial condition, results of operations, and cash flows.

ITEM 4. Mine Safety Disclosures

Not applicable

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PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Prior to April 23, 2008, there was no established public trading market for our common stock. Since April 23, 2008, our common stock has traded on the NYSE under the symbol "AWK." As of February 21, 2012, there were 175,717,124 shares of common stock outstanding and approximately 1,179 record holders of common stock.

The following table sets forth the per-share range of the high and low closing sales prices of our common stock as reported on the NYSE and the cash dividends paid and declared per share for the years ended December 31, 2011 and 2010.

	2011					2010				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Dividends paid per common share	\$ 0.22	\$ 0.22	\$ 0.23	\$ 0.23	\$ 0.90	\$ 0.21	\$ 0.21	\$ 0.22	\$ 0.22	\$ 0.86
Dividend declared per common share	\$ 0.22	\$ 0.45	\$ 0.23	\$ 0.23	\$ 1.13	\$ 0.21	\$ 0.21	\$ 0.22	\$ 0.22	\$ 0.86
Price range of common stock										
—High	\$ 28.33	\$ 30.70	\$ 31.03	\$ 32.78	\$ 32.78	\$ 23.23	\$ 22.15	\$ 23.49	\$ 25.73	\$ 25.73
—Low	\$ 25.17	\$ 27.87	\$ 25.39	\$ 28.34	\$ 25.17	\$ 20.75	\$ 19.92	\$ 20.00	\$ 23.47	\$ 19.92

For information on securities authorized for issuance under our equity compensation please, see Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters."

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ITEM 6. SELECTED FINANCIAL DATA

	For the Years Ended December 31,				
	2011	2010	2009	2008	2007
	(in thousands, except per share data)				
Statement of operations data(1):					
Operating revenues	\$ 2,666,236	\$ 2,555,035	\$ 2,290,446	\$ 2,193,157	\$ 2,067,124
Goodwill impairment charges	—	—	\$ 428,036	\$ 712,727	\$ 484,387
Operating income (loss)	\$ 803,136	\$ 728,122	\$ 183,835	\$ (155,221)	\$ 32,138
Income (loss) from continuing operations	\$ 304,929	\$ 255,072	\$ (219,998)	\$ (529,291)	\$ (322,654)
Income (loss) from continuing operations per basic common share(2)	\$ \$1.74	\$ \$1.46	\$ (1.31)	\$ (3.31)	\$ (2.02)
Income (loss) from continuing operations per diluted common share(2)	\$ \$1.73	\$ \$1.46	\$ (1.31)	\$ (3.31)	\$ (2.02)

	As of December 31,				
	2011	2010	2009	2008	2007
	(in thousands)				
Cash and cash equivalents	\$ 14,207	\$ 13,112	\$ 22,256	\$ 9,542	\$ 13,481
Utility plant and property, net of depreciation	\$ 10,872,042	\$ 10,241,342	\$ 9,708,885	\$ 9,218,396	\$ 8,502,333
Total assets	\$ 14,776,391	\$ 14,086,246	\$ 13,459,368	\$ 13,231,818	\$ 12,951,327
Short-term and long-term debt	\$ 5,882,956	\$ 5,658,473	\$ 5,434,463	\$ 5,251,979	\$ 4,949,359
Redeemable preferred stock	\$ 22,036	\$ 22,794	\$ 23,011	\$ 23,208	\$ 23,347
Total debt and redeemable preferred stock	\$ 5,904,992	\$ 5,681,267	\$ 5,457,474	\$ 5,275,187	\$ 4,972,706
Common stockholders' equity	\$ 4,235,837	\$ 4,127,725	\$ 4,000,859	\$ 4,102,001	\$ 4,542,046
Preferred stock without mandatory redemption requirements	\$ 4,547	\$ 4,547	\$ 4,557	\$ 4,557	\$ 4,568
Total stockholders' equity	\$ 4,240,384	\$ 4,132,272	\$ 4,005,416	\$ 4,106,558	\$ 4,546,614

	For the Years Ended December 31,				
	2011	2010	2009	2008	2007
	(in thousands, except per share data)				
Other data:					
Cash flows provided by (used in):					
Operating activities	\$ 808,357	\$ 774,933	\$ 596,156	\$ 552,169	\$ 473,712
Investing activities	\$ (912,397)	\$ (746,743)	\$ (703,611)	\$ (1,033,667)	\$ (746,578)
Financing activities	\$ 105,135	\$ (37,334)	\$ 120,169	\$ 477,559	\$ 256,593
Construction expenditures, included in investing activities	\$ (924,858)	\$ (765,636)	\$ (785,265)	\$ (1,008,806)	\$ (750,810)
Dividends paid per common share	\$ 0.90	\$ 0.86	\$ 0.82	\$ 0.40	—
Dividends declared per common share	\$ 1.13	\$ 0.86	\$ 0.82	\$ 0.40	—

- (1) On September 28, 2007, Thames US Holdings, at the time an indirect wholly-owned subsidiary of RWE, was merged with and into American Water, with American Water as the surviving entity. American Water was an indirect wholly-owned subsidiary of RWE until its initial public offering in April 2008. The historical consolidated financial statements of American Water represent the consolidated results of the Company, formerly issued under the name Thames Water Aqua US Holdings, Inc. and Subsidiary Companies.
- (2) The number of shares used to compute income (loss) from continuing operations per basic common share and income (loss) from continuing operations per diluted common share for the fiscal years ended December 31, 2007 is 160.0 million after giving effect to the 160,000-for-1 stock split on November 7, 2007. For the years ended December 31, 2009 and 2008, there are no dilutive incremental common shares included in diluted earnings per share as all potentially dilutive instruments would be anti-dilutive.

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ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion together with the financial statements and the notes thereto included elsewhere in this Form 10-K. This discussion contains forward-looking statements that are based on management's current expectations, estimates and projections about our business, operations and financial performance. The cautionary statements made in this Form 10-K should be read as applying to all related forward-looking statements whenever they appear in this Form 10-K. Our actual results may differ materially from those currently anticipated and expressed in such forward-looking statements as a result of a number of factors, including those we discuss under "Risk Factors" and elsewhere in this Form 10-K. You should read "Risk Factors" and "Forward-Looking Statements." Certain 2010 and 2009 amounts have been reclassified to conform to the 2011 presentation.

Executive Overview

General

American Water Works Company, Inc. (herein referred to as "American Water" or the "Company") is the largest investor-owned United States water and wastewater utility company, as measured both by operating revenue and population served. Our approximately 7,000 employees provide drinking water, wastewater and other water related services to an estimated 15 million people in more than 30 states and in two Canadian provinces. Our primary business involves the ownership of water and wastewater utilities that provide water and wastewater services to residential, commercial and industrial customers. Our Regulated Businesses that provide these services are generally subject to economic regulation by state regulatory agencies in the states in which they operate. The federal government and the states also regulate environmental, health and safety and water quality matters. Our on-going Regulated Businesses currently provide services in 16 states and serves approximately 3.1 million customers based on the number of connections to our water and wastewater networks. We report the results of these businesses in our Regulated Businesses segment. We also provide services that are not subject to economic regulation by state regulatory agencies. We report the results of these businesses in our Market-Based Operations. As noted under "Business Section," our financial condition and results of operations are influenced by a variety of industry-wide factors, including but not limited to (i) economic utility regulation; (ii) economic environment; (iii) the need for infrastructure investment; (iv) an overall trend of declining water usage per customer; (iv) weather and seasonality; and (vi) access to and quality of water supply.

In 2011, we continued the execution of our strategic goals. Our commitment to operational excellence led to success in portfolio optimization, increased regulated operating efficiency and improved performance of our Market-Based Operations, and enabled us to provide increased value to our customers and investors. In 2011, our goals were to implement the execution of the portfolio optimization, resolve rate cases outstanding at the beginning of 2011, initiate state specific efforts to address the decline in water usage, continue improvement in our O&M efficiency ratio, increase our earned rate of return to more closely align with that which is authorized by the PUCs, selectively expand our Market-Based Operations' business, as well as, optimize our municipal contract operations' business model.

2011 Financial Results

All financial information in this Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A), reflects only continuing operations. As previously disclosed in our Form 10-K for the year ended December 31, 2010, as part of our portfolio optimization initiative, we entered into agreements to sell our regulated subsidiaries in Arizona, New Mexico and our regulated water and wastewater systems in Texas. The sale of the Texas subsidiary assets was completed in June 2011. In addition, on July 8, 2011, the Company entered into an agreement to sell our Ohio subsidiary. Additionally, on December 13, 2011, we entered in to an agreement to sell Applied Water Management, Inc. which was part of our Contract Operations line of business within our Market-Based segment. Therefore, the financial results of these entities have been presented as discontinued operations for all periods, unless otherwise noted. See Note 3 to Consolidated Financial Statements for further details on our discontinued operations.

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Our results for the year ended December 31, 2011 demonstrated significant progress in difficult and challenging economic and regulatory environments. We continued to increase our net income, while making significant capital investment in our infrastructure and implementing operational efficiency improvements necessary to offset increases in production and employee benefit costs.

Despite challenging weather events in the northeast region of the United States in the third quarter of 2011, for the year ended December 31, 2011, we generated \$2,666.2 million in total operating revenue, and \$803.1 million in operating income compared to total operating revenue of \$2,555.0 million, and \$728.1 million in operating income in 2010. Our Regulated Businesses, our largest operating segment, generated \$2,368.9 million in operating revenue, representing 88.8% of our consolidated operating revenue compared to \$2,285.7 in operating revenues representing 89.5% of our consolidated operating revenue in 2010. This increase of 3.6% in operating revenues, when compared to 2010, was primarily driven by rate increases offset by decrease in sales volume in all customer classes in 2011. Additionally, for the year ended December 31, 2011, our Market-Based Operations generated \$327.8 million in operating revenue, compared to \$294.7 million in operating revenues in 2010, an increase of 11.2%.

For the year ended December 31, 2011, we reported net income of \$309.6 million, or diluted earnings per share of \$1.75 compared to net income of \$267.8 million, or diluted EPS of \$1.53 for the comparable period in 2010. Net income for 2011 includes a benefit of \$15.1 million, or \$0.09 diluted earnings per share, as a result of the benefit from the cessation of depreciation on property, plant and equipment and a charge of \$25.1 million or \$0.14 diluted earnings, per share, to reduce the net asset values, of certain of our discontinued operations, which include associated parent company goodwill, to their net realizable values. Net income from continuing operations was \$304.9 million for the year ended December 31, 2011 compared to net income from continuing operations of \$255.1 million for the year ended December 31, 2010. Diluted earnings from continuing operations per average common share was \$1.73 for the year ended December 31, 2011 as compared to \$1.46 for year ended December 31, 2010. In addition, we generated increased cash flow from operations during 2011 of \$808.4 million, compared to \$774.9 million in 2010.

The primary drivers contributing to the increase in net income from continuing operations for the year ended December 31, 2011 were increased revenues resulting from rate increases as well as slightly higher revenues in our Market-Based Operations segment partially offset by higher operation and maintenance expense, depreciation and amortization expense and general taxes. See "Consolidated Results of Operations and Variances" and "Segment Results" below for further detailed discussion of the consolidated results of operations, as well as our business segments.

Implementation of Portfolio Optimization Initiative

In 2011, we continued to execute our plan for optimizing our portfolio. As part of a strategic review of our business activities, the company completed its acquisition of 11 water and 48 wastewater systems in Missouri in May 2011 for a purchase price of \$3.3 million, leveraging the strength of our large-scale operations in that state. The acquisition adds an additional 1,700 water customers and nearly 2,000 wastewater customers to our regulated operations. Under a separate agreement, the sale of the Texas subsidiary assets was completed in June 2011.

In January 2011, we announced that we had entered into an agreement with EPCOR Water (USA) Inc. to sell 100 percent of the stock of our regulated water and wastewater operating companies located in Arizona and New Mexico. On January 31, 2012, we received approximately \$461.0 million of sales proceeds as a result completing the divestiture of these regulated operating companies. We plan to use the proceeds from the sale to reduce equity financing requirements and to pay down commercial paper.

On July 8, 2011, we entered into an agreement to purchase seven regulated water systems in New York for approximately \$71 million, adding approximately 50,000 customers to New York regulated operations. In a separate agreement, American Water will sell its eight regulated water systems and one wastewater system in

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Ohio for approximately \$89 million, plus assumed liabilities of approximately \$31 million for an enterprise value of approximately \$120 million. Ohio American Water serves approximately 58,000 customers. The completion of both transactions is subject to customary closing conditions, including regulatory approval by public utility commissions in both New York and Ohio. We expect the closing on these transactions to occur in the first half of 2012.

On December 31, 2011, we completed the sale of AWM which was part of our Contract Operations line of business within our Market-Based segment, in two separate transactions for combined proceeds of approximately \$3.0 million. Also in 2011, we continued to bring new water solutions to challenged water and wastewater systems by acquiring several smaller systems in Pennsylvania, Missouri and New Jersey.

Capital Investments

We invested approximately \$925 million and \$766 million in Company-funded capital improvements in 2011 and 2010, respectively. These capital investments are needed on an ongoing basis to comply with existing and new regulations, renew aging treatment and network assets, provide capacity for new growth and ensure system reliability, security and quality of service. The need for continuous investment presents a challenge due to the potential for regulatory lag, or the delay in recovering our operating expenses and earning an appropriate rate of return on our invested capital and a return of our invested capital. In conjunction with our capital program, management continued its focus on reducing regulatory lag during 2011. For 2012 we anticipate spending approximately \$900 million on Company—funded capital investments, including expenditures associated with our business transformation project.

During 2011, we continued to move forward with our business transformation project to enhance processes and upgrade antiquated legacy systems in order to generate efficiencies and to better meet our customer needs in a more cost effective manner. Also, during 2011, we decided to accelerate the timeline of this project due to its criticality to the business. Since the inception of the project, we completed our evaluation of appropriate software solutions and selected our software vendor as well as our system integrator. We worked with the system integrator to analyze our current processes and to design a blueprint for business processes and new systems that will enable business transformation. During 2011, we completed the detailed design and build of the Enterprise Resource Planning ("ERP") application. Also, in 2011, we began the design of the customer information and enterprise asset management systems.

We expect the ERP application to go-live in August 2012 and the new customer information system and enterprise asset management system—implemented by the end of 2013. Total expenditures spent for our business transformation project through December 31, 2011 approximates \$139.7 million with \$105.3 million of that amount spent in 2011.

Rate Cases and Regulatory Matters

In 2011, we received authorizations for additional annualized revenues from general rate cases, totaling \$78.8 million. In April 2011, we received final orders in our Tennessee and West Virginia rate cases, both of which were filed in 2010. On August 1, 2011, our Virginia rate case, which was filed in 2010 and for which interim rates had been in effect under bond subject to refund since the third quarter of 2010, was approved. In November 2011, we received final authorizations in our Pennsylvania rate case and our Hawaii rate case, both of which were filed in 2011.

Additionally settlements have been reached, in our general rate cases in Missouri and New York, which could provide approximately \$30 million in additional annualized revenues if approved in accordance with the settlement agreement. There is no assurance that the settlement amounts, or any portion thereof, will be approved as they are pending regulatory approvals and are all subject to change. Details of this case will be released upon final approval.

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On February 23, 2012, the Iowa Utilities Board approved an additional \$2.8 million of annualized revenues for our Iowa subsidiary. The increase approximates what we had been collecting since July 29, 2011 under interim rates and the partial settlement that was reached in October 2011.

On February 6, 2012, we filed a general rate case in Virginia requesting additional annualized revenues for jurisdictional and non-jurisdictional customers of \$6.0 million. As of February 23, 2012, we are awaiting final orders in seven states where we have continuing operations, including Missouri and New York, where settlement agreements are pending, requesting additional annualized revenues of \$245.5 million. Of the outstanding cases, only one was filed in 2010, five cases were filed in 2011 and the Virginia case was filed in 2012. There is no assurance that all, or any portion thereof, of any requested increases will be granted.

Also, in 2011, we were granted \$26.2 million in additional annualized revenues, assuming constant sales volumes from infrastructure charges in several of our states. In January 2012, additional annualized revenue of \$1.7 million resulting from infrastructure charges in our Illinois subsidiary became effective.

In addition to our general rate case filings and infrastructure charge filings, during 2011 we made other filings including cost of capital, pre-construction cost, and interim rates true-ups. We do not expect these filings to have a material impact on our results of operations, financial condition or cash flows.

As disclosed in more detail under Item 3, "Legal Proceedings" in this report, our subsidiary, California- American Water Company ("CAWC") filed an application with the California Public Utilities Commission ("CPUC") in September, 2010 to seek approval for a project to reroute the Carmel River and remove the San Clemente Dam in Monterey, California. The dam is owned by CAWC. As part of the application, CAWC is seeking recovery of certain historical costs, totaling approximately \$26.9 million, related to studies to determine whether the dam could withstand significant flooding and severe earthquakes meeting defined criteria, efforts to develop a project to address seismic issues, the identification and analysis of possible alternative project options, and activities undertaken pursuant to the directives of Federal and State government agencies, including the California Department of Water Resources, Division of Safety of Dams ("DSOD"), the lead agency under the State and Federal environmental review laws. On November 10, 2011, a Proposed Decision ("PD") was issued by the administrative law judge assigned to the matter. In the PD, the administrative law judge recommended that recovery of virtually all of the historical costs should be denied. CAWC has filed comments with the CPUC contending that the PD is unreasonable, unsupported by and contrary to the evidence, and contrary to law and policy. The PD is currently under review by the CPUC, which has delayed issuing a decision on several occasions and most recently has indicated that it will not vote on a decision until April 19, 2012. At December 31, 2011, most of the historical charges related to the dam are recorded as regulatory assets on our consolidated balance sheet. While we believe there are sound reasons for the CPUC to modify the PD to permit recovery of the historical costs, in the event recovery is not permitted, we would incur a charge equal to the carrying value of the historical costs included in regulated assets. If partial recovery is allowed, the effect on regulated assets would be reduced.

Continue Improvement in O&M Efficiency Ratio for our Regulated Businesses

Our O&M efficiency ratio (a non-GAAP measure) is defined as our regulated operation and maintenance expense divided by regulated operating revenues where both operation and maintenance expense and operating revenues are adjusted to eliminate purchased water expense. Our O&M efficiency ratio was 43.8% for the year ended December 31, 2011 compared to 45.5% and 47.7% for the years ended December 31, 2010 and 2009, respectively. We evaluate our operating performance using this measure as it is the primary measure of the efficiency of our regulated operations. This information is intended to enhance an investor's overall understanding of our operating performance. O&M efficiency ratio is not a measure defined under GAAP and may not be comparable to other companies' operating measures or deemed more useful than the GAAP information provided elsewhere in this report. The following table provides reconciliation between operation and maintenance expense and operating revenues, as determined in accordance with GAAP, and to those amounts utilized in the calculation of our O&M efficiency ratio for the years ended December 31, 2011, 2010 and 2009.

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Regulated O&M Efficiency Ratio (a Non-GAAP Measure)

	For the Years Ended December 31,		
	2011	2010	2009
	(in thousands)		
Total regulated O&M expense	\$ 1,092,611	\$ 1,095,446	\$ 1,036,565
Less: Regulated purchased water expense	99,008	99,834	89,502
Adjusted regulated O&M expense(a)	\$ 993,603	\$ 995,612	\$ 947,063
Total regulated operating revenues	\$ 2,368,891	\$ 2,285,656	\$ 2,076,563
Less: Regulated purchased water expense*	99,008	99,834	89,502
Adjusted regulated operating revenues(b)	\$ 2,269,883	\$ 2,185,822	\$ 1,987,061
Regulated O&M efficiency ratio(a)/(b)	43.8%	45.5%	47.7%

* Note calculation assumes purchased water revenues approximate purchased water expenses.

Other initiatives:

In 2011, we began addressing regulatory lag in a number of our states. In all of the rate cases that we filed in 2011, we addressed declining usage trends. Additionally, in November 2011, the New Jersey Board of Public Utilities (BPU) voted unanimously to publish draft rules that if adopted would implement a distribution system improvement charge ("DSIC") for specified water infrastructure investments for our New Jersey subsidiary. The draft rules were published for public comment in December 2011. Allowing time for resolution of public comments and final approval, April 2012 is the earliest estimate for the rule to become final. Assuming the rule becomes final, New Jersey American Water Company intends to file a foundational filing to support planned investments and, under the draft rules, the BPU will have 90 days to act on this filing. After approval of the foundational filing, recovery filings for eligible investments will be semi-annual with rates taking effect two months after the filing.

Also, in 2011, we issued our first full corporate responsibility report, securing our position as the first U.S. water and wastewater company to report on environmental, social and governance performance against Global Reporting Index guidelines. This biennial report includes the company's priorities, policies and approaches to corporate responsibility, and covers performance for the 2010 fiscal year. As a trusted steward of our most precious resource—water—the company believes having a corporate management approach oriented toward corporate responsibility is key to our long-term success and the ability to provide high-quality services to our customers and maintain trust with them and all our stakeholders. The report can be found on the company's Web site.

2012 and Beyond

Our strategy for the future will continue to focus on earning an appropriate rate of return on our investments, promoting constructive regulatory frameworks, expanding the Regulated Businesses segment through focused acquisitions and pursuing "regulated-like" opportunities in our Market-Based Operations. We will also continue to modernize our infrastructure and focus on operational efficiencies.

In particular for 2012, we will focus on continuing our portfolio optimization initiative. We finalized our sale of regulated operations in Arizona and New Mexico on January 31, 2012 and expect to finalize the divestiture of our Ohio operating company in the first quarter of 2012. Also, in the first quarter of 2012, we expect to complete the acquisition of the seven regulated water utilities in New York. We will continue to identify additional value-added opportunities.

Also, in 2012, we will continue to actively address regulatory lag that impacts returns on investments. We expect to file four general rates cases as well as file for infrastructure surcharges in four to six states. Additionally, we expect to continue to address declining usage trends via rate case or other filings. The demand

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for water has been lower than expected in 2011, even though usage volumes for water increased in 2010 compared to 2009. In addition, increased water conservation, including the use of more efficient household fixtures and appliances among residential consumers, combined with declining household sizes in the United States, have contributed to a trend of declining water usage per residential customer. All of the states served by our Regulated Businesses have experienced a declining trend in water usage per residential customer, with the rate decline in the various states averaging 2.1% and ranging between 1.3% and 3.42% annually over the last 5 years, some of which may have been attributable to variations in weather conditions. Because the characteristics of residential water use are driven by many factors, including socio-economic and other demographic characteristics of our service areas, climate, seasonal weather patterns and water rates, these declining trends vary by state and service area and change over time. Our Regulated Businesses are heavily dependent upon operating revenues generated from rates we charge to our customers for the volume of water they use. Declining usage due to conservation or the economic environment contribute to regulatory lag and will have a negative impact on our long-term operating revenues if we are unable to secure appropriate regulatory treatment to offset the usage decline.

Additionally in 2012, we will continue to make efficient use of our capital. We expect to invest approximately \$900 million to upgrade infrastructure, enhance infrastructure surcharge like mechanisms and optimize our supply chain process. We also expect to continue to improve our regulated O&M efficiency ratio, of which our 5 year goal, which began in 2011, is to be below 40%; increase our earned regulated return; and expand our Market-Based Operations with a focus on the Homeowners Services Group and Military Contract Operations; and optimize our municipal contract operations business model to provide for value creation for both American Water and the municipality.

We are committed to operating our business responsibly and managing our operating and capital costs in a manner that serves our customers and produces value for our shareholders. We are committed to an ongoing strategy to make ourselves more effective, efficient and innovative.

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Results of Operations

The following table sets forth our consolidated statement of operations data for the years ended December 31, 2011, 2010 and 2009:

	<u>Years Ended December 31,</u>		
	<u>2011</u>	<u>2010</u>	<u>2009</u>
Operating revenues	\$ 2,666,236	\$ 2,555,035	\$ 2,290,446
Operating expenses			
Operation and maintenance	1,301,794	1,290,941	1,182,376
Depreciation and amortization	351,821	330,264	309,874
General taxes	210,478	205,597	186,620
(Gain) loss on asset dispositions and purchases	(993)	111	(295)
Impairment charge	0	0	428,036
Total operating expenses, net	<u>1,863,100</u>	<u>1,826,913</u>	<u>2,106,611</u>
Operating income	<u>803,136</u>	<u>728,122</u>	<u>183,835</u>
Other income (expenses)			
Interest, net	(312,415)	(313,765)	(296,623)
Allowance for other funds used during construction	13,131	9,644	8,342
Allowance for borrowed funds used during construction	5,923	5,225	5,529
Amortization of debt expense	(5,055)	(4,516)	(6,609)
Other, net	(1,040)	4,714	(680)
Total other income (expenses)	<u>(299,456)</u>	<u>(298,698)</u>	<u>(290,041)</u>
Income (loss) from continuing operations before income taxes	503,680	429,424	(106,206)
Provision for income taxes	198,751	174,352	113,792
Income (loss) from continuing operations	304,929	255,072	(219,998)
Income (loss) from discontinued operations, net of tax	4,684	12,755	(13,085)
Net income (loss)	<u>\$ 309,613</u>	<u>\$ 267,827</u>	<u>\$ (233,083)</u>
Basic earnings per common share:(a)			
Income (loss) from continuing operations	<u>\$ 1.74</u>	<u>\$ 1.46</u>	<u>\$ (1.31)</u>
Income (loss) from discontinued operations, net of tax	<u>\$ 0.03</u>	<u>\$ 0.07</u>	<u>\$ (0.08)</u>
Net income (loss)	<u>\$ 1.76</u>	<u>\$ 1.53</u>	<u>\$ (1.39)</u>
Diluted earnings per common share:(a)			
Income (loss) from continuing operations	<u>\$ 1.73</u>	<u>\$ 1.46</u>	<u>\$ (1.31)</u>
Income (loss) from discontinued operations, net of tax	<u>\$ 0.03</u>	<u>\$ 0.07</u>	<u>\$ (0.08)</u>
Net income (loss)	<u>\$ 1.75</u>	<u>\$ 1.53</u>	<u>\$ (1.39)</u>
Average common shares outstanding during the period:			
Basic	<u>175,484</u>	<u>174,833</u>	<u>168,164</u>
Diluted	<u>176,531</u>	<u>175,124</u>	<u>168,164</u>

(a) Amounts may not sum due to rounding.

Comparison of consolidated Results of Operations for the Years Ended December 31, 2011 and 2010

Operating revenues. Consolidated operating revenues for the year ended December 31, 2011 increased \$111.2 million, or 4.4%, compared to the same period in 2010. Contributing to this increase was higher revenues

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in our Regulated Businesses of \$83.2 million which was mainly the result of rate increases and higher revenues in our Market-Based Operations segment of \$33.1 million, which was primarily due to a \$22.3 million increase in the Contract Operations Group revenues attributable to incremental capital project activity associated with our military services contracts. For further information see the respective "Operating Revenues" discussions within the "Segment Results."

Operation and maintenance. Consolidated operation and maintenance expense for the year ended December 31, 2011 increased \$10.9 million, or 0.8%, compared to 2010. This change was driven by a \$21.8 million increase in our Market-Based Operations segment primarily related to the increased capital activity associated with our military contracts partially offset by a \$2.8 million decrease in our Regulated Businesses segment. The remaining \$8.1 million decrease was mainly due to additional expenses in 2010 attributable to a \$5.0 million contribution to the American Water Charitable Foundation, a 501c(3) organization that was established in December 2010 to encourage and support employees volunteerism and community giving and severance costs of \$2.7 million associated with changes in certain senior management positions. For further information see the respective "Operation and Maintenance" discussions within the "Segment Results."

Depreciation and amortization. Depreciation and amortization expense increased by \$21.6 million, or 6.5%, for the year ended December 31, 2011 compared to the same period in the prior year as a result of additional utility plant placed in service.

General taxes. General taxes expense, which includes taxes for property, payroll, gross receipts, and other miscellaneous items, increased by \$4.9 million, or 2.4%, for the year ended December 31, 2011 compared to the year ended December 31, 2010. This increase was principally due to higher gross receipts taxes of \$4.6 million, primarily in our New Jersey regulated subsidiary.

Impairment charge. No impairment charge was recorded for our continuing operations in 2011 or 2010.

Other income (expenses). Other income and (expenses) increased \$0.8 million or 0.3% for the year ended December 31, 2011 compared to the same period in the prior year. This increase is attributable to an increase in allowance for funds used during construction ("AFUDC") of \$4.2 million resulting from increased construction activity and a decrease in interest expense, net of interest income, of \$1.4 million partially offset by a decrease in Other, net. The decrease in Other, net of \$5.8 million is mainly due to the inclusion in 2010, the release of the remaining balance of a loss reserve amounting to \$1.3 million, resulting from the resolution of the outstanding issues and uncertainties, incremental rental revenues of \$2.6 million and the recognition of funds received related to the methyl tertiary butyl ether ("MTBE") legal settlement for \$1.9 million resulting from the outcome of a subsidiary's rate order.

Provision for income taxes. Our consolidated provision for income taxes increased \$24.4 million, or 14.0%, to \$198.8 million for the year ended December 31, 2011. The effective tax rates for the years ended December 31, 2011 and 2010 were 39.5% and 40.6%, respectively. The rate for the twelve months ended December 31, 2011 includes a \$4.5 million tax benefit related to one of our operating companies contributing non-utility property to a county authority within its operating area.

Income from discontinued operations, net of tax. As noted above, the financial results of our regulated water and wastewater systems in Arizona, New Mexico, Texas and Ohio and our Applied Water Management, Inc subsidiary within the Market-Based Operations segment have been classified as discontinued operations for all periods presented. The decrease in income from discontinued operations, net of tax is primarily related to a \$25.1 million charge record to reduce the net asset values of those businesses classified as discontinued operation, which included associated parent company goodwill, to their net realizable values. This charge was offset by a benefit of \$15.1 related to the cessation of depreciation for our Arizona, New Mexico, Texas and Ohio subsidiaries in accordance with GAAP for the year ended December 31, 2011 of \$15.1 million.

Net income (loss). Net income for 2011 was \$309.6 million compared to net income of \$267.8 million for 2010. The variation between the periods is the result of the aforementioned changes.

[Table of Contents](#)**Comparison of Consolidated Results of Operations for the Years Ended December 31, 2010 and 2009**

Operating revenues. Our operating revenues increased by \$264.6 million, or 11.6%, to \$2,555.0 million for 2010 from \$2,290.4 million for 2009. Regulated Businesses' revenues increased by \$209.1 million, or 10.1%, for 2010 compared to 2009 primarily attributable to rate increases and increased consumption. The Market-Based Operations' revenues for 2010 increased by \$56.5 million, or 23.7%, from 2009 and was mainly attributable to higher revenues in the Contract Operations and Homeowner Services Groups. For further information see the respective "Operating Revenues" discussions within the "Segment Results."

Operation and maintenance. Operation and maintenance expense increased \$108.6 million, or 9.2%, for 2010 compared to 2009. This increase was due to higher operation and maintenance expense in our Regulated Businesses of \$58.9 million and in our Market-Based Operations business of \$47.6 million. Additionally, 2010 included a \$5.0 million contribution to the American Water Charitable Foundation, a 501-c(3) organization that was established in December 2010 to encourage and support employees volunteerism and community giving and severance costs of \$2.7 million associated with changes in certain senior management positions. For further information on the Regulated Businesses and Market-Based Operations variances see the respective "Operation & Maintenance" discussions within the "Segment Results."

Depreciation and amortization. Depreciation and amortization expense increased by \$20.4 million, or 6.6%, for 2010 compared to 2009. This increase was due to our continued investment in our infrastructure and capital expenditures, many of which were placed into service in 2010 by our Regulated Businesses. This increase was partially offset by the \$2.4 million write-off of certain software costs in 2009.

General taxes. General taxes expense, which includes taxes for property, payroll, gross receipts, and other miscellaneous items, increased by \$19.0 million, or 10.2% in 2010 compared to the same period in 2009. This increase was due to higher gross receipts taxes of \$6.7 million, primarily in our New Jersey regulated subsidiary, higher property taxes of \$5.6 million throughout our regulated operations, higher payroll taxes of \$3.3 million as a result of our increased wages and salaries for the year December 31, 2010 and higher capital stock taxes of \$1.7 million.

Impairment charge. No impairment charge was recorded in 2010. For the twelve months ended December 31, 2009, we recorded an impairment charge to goodwill for our continuing operations totaling \$428.0 million. Our Regulated Businesses recorded a charge to goodwill in the amount of \$426.2 million and our Market-Based Operations recorded a charge to goodwill of \$1.8 million. The 2009 impairment charge, which was recorded in the first quarter of 2009, was primarily related to the high degree of stock market volatility experienced and as of March 31, 2009, the sustained period for which the Company's market price was below its carrying value.

Other income (expenses). Interest expense, net of interest income, which is the primary component of our other income (expenses), increased by \$17.1 million, or 5.8%, for 2010 compared to 2009. The increase is primarily due to the refinancing of short-term debt with long-term debt during 2009 as well as increased borrowing associated with capital expenditures. As a result of the volatile market conditions in 2008, the Company utilized its short-term debt credit facilities to fund our capital projects and other operating needs which resulted in higher short-term borrowings in the first half of 2009. Our short term borrowings were steadily reduced during 2009 through a significant number of long-term debt refinancing with fixed interest rates. The increase in fixed rate long-term debt resulted in higher interest expense for the year ended December 31, 2010. Allowance for funds used during construction ("AFUDC") increased by \$1.0 million for 2010 compared to the same period in 2009 as a result of increased construction activity. Furthermore, other income increased due to higher joint venture income and changes in market value of Company-held deferred compensation. Other items affecting other income (expense) include the release of the remaining balance of a loss reserve of \$1.3 million as a result of the resolution of outstanding issues and uncertainties that occurred during 2010 as well as the recognition of funds received related to the MTBE legal settlement for \$1.9 million resulting from the outcome of a subsidiary's rate order.

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Provision for income taxes. Our consolidated provision for income taxes increased \$60.6 million, or 53.2%, to \$174.4 million for 2010 from \$113.8 million in 2009. The effective tax rates in 2010 and 2009 were 40.6% and (107.1%) respectively. The 2009 effective tax rate reflects the tax effects of the 2009 goodwill impairment charge, as the Company considers this charge as infrequently occurring or unusual. In addition to the tax benefits associated with the goodwill impairment charge, 2009 also included tax benefits attributable to the impact of tax law changes as well as other discrete items. The Company's annual effective tax rate was 40.83% and 36.63% for 2010 and 2009, respectively, excluding the impact of the goodwill impairment charge and various other discrete items.

Income from discontinued operations, net of tax. The change is primarily attributable to the inclusion in 2009 operating expenses of an impairment charge, net of tax of \$21.6 million.

Net income (loss). Net income for 2010 was \$267.8 million compared to a net loss of \$233.1 million for 2009. The variation between the periods is the result of the aforementioned changes.

Segment Results

We have two operating segments, which are also our reportable segments: the Regulated Businesses and the Market-Based Operations. These segments are determined based on how we assess performance and allocate resources. We evaluate the performance of our segments and allocated resources based on several factors, with the primary measure being income from continuing operations before income taxes.

Regulated Segment

The following table summarizes certain financial information for our Regulated Businesses for the periods indicated:

	For the years ended		
	December 31,		
	2011	2010	2009
	(in thousands)		
Operating revenues	\$ 2,368,891	\$ 2,285,656	\$ 2,076,563
Operation and maintenance expense	1,092,611	1,095,446	1,036,565
Operating expenses, net	1,609,276	1,587,963	1,497,453
Income from continuing operations before income taxes	535,445	478,629	371,919

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Operating Revenues. Our primary business involves the ownership of water and wastewater utilities that provide services to residential, commercial, industrial and other customers. This business is subject to state regulation and our results of operations are impacted significantly by rates authorized by the state regulatory commissions in the states in which we operate. The table below details additional annualized revenues awarded, including step increases and assuming a constant volume, resulting from rate authorizations granted in 2011, 2010 and 2009.

	Years Ended December 31,		
	2011	2010	2009
	(in millions)		
State			
<i>General Rate Cases:</i>			
Pennsylvania(1)	\$ 62.1	\$ 8.4	\$ 56.0
New Jersey(2)	—	39.9	1.6
Kentucky	—	18.8	10.3
Missouri	—	28.0	—
Illinois	—	41.4	—
Indiana	—	31.5	—
California(3)	—	14.6	16.0
West Virginia	5.1	—	5.2
Virginia(4)	4.8	—	—
Tennessee	5.6	—	—
Iowa	—	—	6.1
Other	1.2	0.8	0.9
<i>Total—General Rate Cases</i>	<u>\$ 78.8</u>	<u>\$ 183.4</u>	<u>\$ 96.1</u>

(1) 2010 amount includes additional increases of \$3.2 million in 2011 and \$2.6 million in 2012.

(2) 2009 amount includes additional increases of \$0.5 million effective in 2010 and \$0.4 million effective in 2011.

(3) 2009 amount includes additional increases of \$1.3 million effective in 2010 and \$1.8 million in 2011;

(4) The new rates in 2011 provided for additional annualized revenue of \$4.3 million for jurisdictional customers and a \$0.5 million increase for non-jurisdictional customers which are not subject to commission filing.

The effective date for the 2011 Pennsylvania rate increase was November 11, 2011. The Virginia, Tennessee and West Virginia increases were effective March 6, 2011, April 5, 2011 and April 19, 2011 respectively. The effective dates for the larger rate increases granted in 2010 were October 1, 2010, July 1, 2010, April 23, 2010 and May 3, 2010, in Kentucky, Missouri, Illinois and Indiana, respectively. Rate increases granted in 2010 for Pennsylvania and New Jersey were not effective until January 1, 2011. The effective date for the 2009 Pennsylvania rate increase was November 7, 2009.

As previously noted, an increasing number of states are permitting rates to be adjusted outside of a general rate case for certain costs, such as a return on capital investments to replace aging infrastructure. The following table details additional annualized revenue authorized through infrastructure surcharge mechanisms which were

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granted in 2011, 2010 and 2009. As these surcharges are typically rolled into the new base rates and therefore are reset to zero when new base rates are effective, certain of these charges may also be reflected in the total general rate case amounts awarded in the table above if the order date was following the infrastructure surcharge filing date.

	Years Ended December 31,		
	2011	2010	2009
	(in millions)		
<i>Infrastructure Charges:</i>			
Pennsylvania	\$ 16.4	\$ 8.5	\$ 15.2
Missouri	5.8	3.2	2.7
Indiana	—	5.4	3.8
Illinois	3.7	0.7	0.9
Other	0.3	0.4	1.4
<i>Total—Infrastructure Charges</i>	<u>\$ 26.2</u>	<u>\$ 18.2</u>	<u>\$ 24.0</u>

Comparison of Results of Operations for the Years Ended December 31, 2011 and 2010

Operating revenues increased by \$83.2 million, or 3.6%, for the year ended December 31, 2011 compared to the same period in 2010. The increase in revenues was primarily due to rate increases obtained through rate authorizations for a number of our operating companies of which the impact was approximately \$133.8 million partially offset by decreased revenues of \$57.0 million attributable to decreased consumption in 2011 compared 2010. The majority of this decrease occurred in our New Jersey and Pennsylvania subsidiaries mainly as a result of the extreme weather conditions, including the impacts associated with Hurricane Irene and other severe storms in the Northeast region of the United States during the third quarter of 2011. The following table sets forth the amounts and percentages of Regulated Businesses' revenues and water sales volume by customer class:

Customer Class	For the Years Ended December 31,							
	2011				2010*			
	Operating Revenues (dollars in thousands)				Water Sales Volume (gallons in millions)			
Water service:								
Residential	\$ 1,339,429	56.5%	\$ 1,300,167	56.9%	180,916	51.2%	187,062	51.3%
Commercial	474,191	20.0%	456,994	20.0%	81,455	23.0%	84,086	23.0%
Industrial	115,981	4.9%	110,175	4.8%	39,295	11.1%	39,860	10.9%
Public and other	302,276	12.8%	291,393	12.7%	52,069	14.7%	54,059	14.8%
Other water revenues	20,712	0.9%	22,672	1.0%	—	—	—	—
Total water revenues	2,252,589	95.1%	2,181,401	95.4%	<u>353,735</u>	<u>100.0%</u>	<u>365,067</u>	<u>100.0%</u>
Wastewater service	76,301	3.2%	69,049	3.0%				
Other revenues	40,001	1.7%	35,206	1.6%				
	<u>\$ 2,368,891</u>	<u>100.0%</u>	<u>\$ 2,285,656</u>	<u>100.0%</u>				

* Certain reclassifications have been made between customer classes to conform to the 2011 presentation.

The following discussion related to water services indicates the increase or decrease in the Regulated Businesses' revenues and associated billed water sales volumes in gallons by customer class.

Water Services—Water service operating revenues from residential customers for year ended December 31, 2011 totaled \$1,339.4 million, a \$39.3 million increase, or 3.0%, over the same period of 2010, mainly due to rate increases offset by decreases in sales volume. The volume of water sold to residential customers

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decreased by 3.3% for the year ended December 31, 2011 to 180.9 billion gallons, from 187.1 billion gallons for the same period in 2010. We believe that factors contributing to the decline could include the aforementioned weather conditions in the third quarter 2011, an increased customer focus on conservation, the use of more efficient appliances and the current economic climate. The extent to which these items individually contribute to the overall decline is difficult to measure.

Water service operating revenues from commercial water customers for the year ended December 31, 2011 increased by \$17.2 million, or 3.8%, to \$474.2 million for the same period in 2010. These increases were mainly due to rate increases partially offset by decreases in sales volume. The volume of water sold to commercial customers decreased by 3.1% for the year ended December 31, 2011, to 81.5 billion gallons, from 84.1 billion gallons for the year ended December 31, 2010. We believe that factors contributing to this decline include wetter weather conditions, an increased customer focus on conservation as well as the current economic environment in certain areas in which we operate. Similar to the above, the extent to which these items individually contribute to the overall decline is difficult to measure.

Water service operating revenues from industrial customers totaled \$116.0 million for the year ended December 31, 2011, an increase of \$5.8 million, or 5.3%, from those recorded for the same period of 2010, mainly due to rate increases offset by a slight decrease in sales volume. The volume of water sold to industrial customers totaled 39.3 billion gallons for the year ended December 31, 2011, a decrease of 1.5% from the 39.9 billion gallons for the year ended December 31, 2010.

Water service operating revenues from public and other customers, including municipal governments, other governmental entities and resale customers increased \$10.9 million, or 3.7% to \$302.3 million, for the year ended December 31, 2011 from \$291.4 million in the same period of 2010. Revenues from municipal governments for fire protection services and customers requiring special private fire service facilities totaled \$126.9 million for the year ended December 31, 2011, an increase of \$7.1 million compared to the same period of 2010. Revenues generated by sales to governmental entities and resale customers totaled \$175.4 million, an increase of \$3.8 from the year ended December 31, 2010.

Wastewater services—Our subsidiaries provide wastewater services in 9 states. Revenues from these services increased by \$7.3 million, or 10.5%, to \$76.3 million for the year ended December 31, 2011, from the same period of 2010. The increase was primarily attributable to rate increases in a number of our operating companies.

Other revenues—Other revenues include such items as reconnection charges, initial application service fees, certain rental revenues, revenue collection services for others and similar items. The increase in revenues for the year ended December 31, 2011 as compared to the same period in the prior year was mainly the result of increased rental revenues.

Operation and maintenance. Operation and maintenance expense decreased \$2.8 million, or 0.3%, for the year ended December 31, 2011, compared to the year ended December 31, 2010. Operation and maintenance expense for 2011 and 2010, by major expense category, were as follows:

	For the Years Ended December 31,			
	2011	2010	Increase (Decrease)	Percentage
	(in thousands)			
Production costs	\$ 262,563	\$ 268,529	\$ (5,966)	(2.2)%
Employee-related costs	489,836	486,969	2,867	0.6%
Operating supplies and services	187,709	181,968	5,741	3.2%
Maintenance materials and services	73,376	75,846	(2,470)	(3.3)%
Customer billing and accounting	43,368	44,024	(656)	(1.5)%
Other	35,759	38,110	(2,351)	(6.2)%
Total	\$ 1,092,611	\$ 1,095,446	\$ (2,835)	(0.3)%

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Production costs including fuel and power, purchased water, chemicals and waste disposal decreased by \$6.0 million, or 2.2%, for 2011 compared to 2010. Production costs by major expense type were as follows:

For the Years Ended December 31,				
	2011	2010	Increase (Decrease)	Percentage
	(in thousands)			
Fuel and power	\$ 87,879	\$ 89,203	\$ (1,324)	(1.5)%
Purchased water	99,008	99,834	(826)	(0.8)%
Chemicals	48,354	50,875	(2,521)	(5.0)%
Waste disposal	27,322	28,617	(1,295)	(4.5)%
Total	<u>\$ 262,563</u>	<u>\$ 268,529</u>	<u>\$ (5,966)</u>	(2.2)%

The decrease in our fuel and power costs was primarily due to the decreased water sales volumes. The decrease in purchased water is primarily attributable to the decreased usage, most notably in our New Jersey subsidiary due to wet weather conditions, previously discussed, as well as in our California subsidiary as customer needs were met with internally produced water. The decrease in chemical costs is also due to higher consumption in 2010 as a result of much drier and warmer weather in the Northeast region of the United States. We also experienced favorable pricing in some of our operating companies in 2011. The waste disposal cost decrease was mainly due to the recognition, in 2010, of \$1.9 million of previously deferred costs allowed by a cost recovery mechanism in one of our operating companies.

Employee-related costs including wage and salary, group insurance, and pension expense increased \$2.9 million, or 0.6%, for 2011 compared to 2010. These employee-related costs represented 44.8% and 44.5% of operation and maintenance expenses for 2011 and 2010, respectively and include the categories shown in the following table:

For the Years Ended December 31,				
	2011	2010	Increase (Decrease)	Percentage
	(in thousands)			
Salaries and wages	\$ 327,777	\$ 331,913	\$ (4,136)	(1.2)%
Pensions	68,885	58,134	10,751	18.5%
Group insurance	75,120	79,958	(4,838)	(6.1)%
Other benefits	18,054	16,964	1,090	6.4%
Total	<u>\$ 489,836</u>	<u>\$ 486,969</u>	<u>\$ 2,867</u>	0.6%

The overall increase in employee-related costs was primarily driven by increased pension expense. The increase in pension expense for the year ended December 31, 2011 was primarily due to increased contributions in certain of our regulated operating companies whose costs and revenue requirements are based on the actual cash contributions to our pension trust account. This increase was partially offset by lower salaries and wages and group insurance expenses. The decrease in salaries and wages for the year ended December 31, 2011 compared to the same period in the prior year was driven by vacant positions and lower severance expenses partially offset by increased incentive costs and annual wage increases. Group insurance decreased mainly due to lower postretirement benefits other than pension as the result of changes to the design of our medical plan and vacant positions as compared to the same period in the prior year.

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Operating supplies and services include expenses for office operation, legal and other professional services, including transportation expenses, information systems rental charges and other office equipment rental charges. Overall, these costs increased \$5.7 million, or 3.2% for the year ended December 31, 2011 compared to the same period in 2010.

	For the Years Ended December 31,			
	2011	2010	Increase (Decrease)	Percentage
	(in thousands)			
Contracted services	\$ 72,582	\$ 66,077	\$ 6,505	9.8%
Office supplies and services	27,718	28,727	(1,009)	(3.5)%
Transportation	26,323	26,330	(7)	0.0%
Rents	15,619	15,745	(126)	(0.8)%
Other	45,467	45,089	378	0.8%
Total	<u>\$ 187,709</u>	<u>\$ 181,968</u>	<u>\$ 5,741</u>	3.2%

The above increases are primarily due to higher contracted services of \$6.5 million for the year ended December 31, 2011, mainly as a result of backfilling positions, including those left open by employees transferring to our business transformation project as well as the use of contractors for other specific projects. Additionally, 2011 included the recording of an anticipated recovery of expenses related to costs incurred as a result of severe weather storms, primarily Hurricane Irene, which have been recorded in their respective expense lines. Also contributing to the increase was the fact that the same period in 2010 included a reversal of a \$3.5 million payment previously made by our California operating company to the California Department of Fish and Game ("CDFG") on behalf of the National Oceanographic and Atmospheric Administration ("NOAA"). This reversal was the result of an advice letter issued by the California Public Utility Commission which allowed for rate recovery of such payment.

Maintenance materials and services, which includes emergency repair as well as costs for preventive maintenance, decreased \$2.5 million, or 3.3%, for 2011 compared to 2010.

	For the Years Ended December 31,			
	2011	2010	Increase (Decrease)	Percentage
	(in thousands)			
Maintenance services and supplies	<u>\$ 73,376</u>	<u>\$ 75,846</u>	<u>\$ (2,470)</u>	(3.3)%

The decrease of \$2.5 million in 2011 is mainly attributable to lower preventive maintenance expenses throughout our regulated subsidiaries, including tank painting, meter testing, pump, tank and well maintenance, and paving costs.

Customer billing and accounting expenses decreased by \$0.7 million, or 1.5%, for 2011 compared to 2010.

	For the Years Ended December 31,			
	2011	2010	Increase (Decrease)	Percentage
	(in thousands)			
Uncollectible accounts expense	\$ 16,060	\$ 18,052	\$ (1,992)	(11.0)%
Postage	12,382	12,348	34	0.3%
Other	14,926	13,624	1,302	9.6%
Total	<u>\$ 43,368</u>	<u>\$ 44,024</u>	<u>\$ (656)</u>	(1.5)%

The decrease of \$2.0 million in the uncollectible accounts expense was the result of improved collection in our receivables in excess of 120 days. This decrease is partially offset by the increase in the Other category mainly due to an increase in collection agency fees.

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Other operation and maintenance expenses include casualty and liability insurance premiums and regulatory costs. These costs decreased by \$2.4 million, or 6.2%, for 2011 compared to 2010.

	For the Years Ended December 31,			
	2011	2010	Increase (Decrease)	Percentage
	(in thousands)			
Insurance	\$ 28,325	\$ 28,244	\$ 81	0.3%
Regulatory expenses	7,434	9,866	(2,432)	(24.7)%
Total	\$ 35,759	\$ 38,110	\$ (2,351)	(6.2)%

The decrease in regulatory expenses was mainly driven by rate case expenses which were deferred in one of our subsidiaries.

Operating expenses. The increase in operating expenses for the year ended December 31, 2011 is primarily due to higher depreciation expense of \$20.5 million resulting from additional utility plant placed in service and increased general taxes of \$5.0 million principally attributable to higher gross receipts taxes in our New Jersey regulated subsidiary. Offsetting these increases is lower operation and maintenance expense, as explained above.

Income from continuing operations before income taxes. The \$56.8 million increase for the year ended December 31, 2011, compared to the same period in the prior year, is the result of the aforementioned operating revenue and operating expenses variations.

Comparison of Results of Operations for the Years Ended December 31, 2010 and 2009

Operating revenues increased by \$209.1 million, or 10.1%, for the year ended December 31, 2010 compared to the same period in 2009. The increase in revenues was primarily attributable to rate increases and increased consumption. The following table sets forth the amounts and percentages of Regulated Businesses' revenues and water sales volume by customer class:

Customer Class	For the Years Ended December 31,							
	2010*		2009*		2010		2009*	
	Operating Revenues (dollars in thousands)				Water Sales Volume (gallons in millions)			
Water service:								
Residential	\$ 1,300,167	56.9%	\$ 1,185,861	57.1%	187,062	51.3%	184,680	52.0%
Commercial	456,994	20.0%	417,076	20.1%	84,086	23.0%	81,823	23.0%
Industrial	110,175	4.8%	97,475	4.7%	39,860	10.9%	35,543	10.0%
Public and other	291,393	12.7%	267,277	12.9%	54,059	14.8%	53,354	15.0%
Other water revenues	22,672	1.0%	14,007	0.6%	—	—	—	—
Total water revenues	2,181,401	95.4%	1,981,696	95.4%	365,067	100.0%	355,400	100.0%
Wastewater service	69,049	3.0%	64,260	3.1%				
Other revenues	35,206	1.6%	30,607	1.5%				
	\$ 2,285,656	100.0%	\$ 2,076,563	100.0%				

* Certain reclassifications have been made between customer classes to conform to the 2011 presentation.

The following discussion related to water services indicates the increase or decrease in the Regulated Businesses' revenues and associated billed water sales volumes in gallons by customer class.

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Water services—Water service operating revenues from residential customers for 2010 increased \$114.3 million, or 9.6%, from 2009, and is primarily due to rate increases and a slight increase in sales volume. The volume of water sold to residential customers increased by 2.4 billion gallons, or 1.3%, from 2009. We attribute this increase to warmer and drier weather in the Mid-Atlantic region of the United States, primarily in the third quarter of 2010 partially offset by wetter weather in parts of the Midwest region of the United States.

Water service operating revenues from commercial water customers for 2010 increased by \$39.9 million, or 9.6%, mainly due to rate increases in addition to an increase in sales volume compared to 2009. The volume of water sold to commercial customers increased by 2.3 billion gallons, or 2.8%, from 2009. We believe this increase is due to the combination of the aforementioned weather conditions and improved economic environment in certain states in which we operate.

Water service operating revenues from industrial customers for 2010 increased by \$12.7 million, or 13.0%, from 2009, mainly due to rate increases and an increase in sales volume. The volume of water sold to industrial customers increased 4.3 billion gallons, or 12.1%, from 2009. We believe that this increase is due to an improved economic environment in certain states in which we operate.

Water service operating revenues from public and other customers increased \$24.1 million, or 9.0%, from 2009 mainly due to rate increases. Revenues from municipal governments for fire protection services and customers requiring special private fire service facilities totaled \$119.8 million for 2010, an increase of \$7.8 million from 2009. Revenues generated by sales to governmental entities and resale customers for 2010 totaled \$171.6 million, an increase of \$16.3 million from 2009.

Wastewater services—Our subsidiaries provide wastewater services in 9 states. Revenues from these services for 2010 increased by \$4.8 million, or 7.5%, from 2009. The increase was primarily attributable to increases in rates charged to customers in a number of our operating companies.

Other revenues—Other revenues include such items as reconnection charges, initial application service fees, rental revenues, revenue collection services for others and similar items. For 2010, other revenues increased by \$4.6 million mainly due to an increase in rental revenues compared to the same period in the prior year.

Operation and maintenance. Operation and maintenance expense increased \$58.9 million, or 5.7%, for 2010 compared to 2009. The following table summarizes these expenses by major expense category as follows:

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Production costs	\$ 268,529	\$ 253,908	\$ 14,621	5.8%
Employee-related costs	486,969	451,004	35,965	8.0%
Operating supplies and services	181,968	180,328	1,640	0.9%
Maintenance materials and services	75,846	60,818	15,028	24.7%
Customer billing and accounting	44,024	45,004	(980)	(2.2)%
Other	38,110	45,503	(7,393)	(16.2)%
Total	<u>\$ 1,095,446</u>	<u>\$ 1,036,565</u>	<u>\$ 58,881</u>	5.7%

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Production costs including fuel and power, purchased water, chemicals and waste disposal increased by \$14.6 million, or 5.8%, for 2010 compared to 2009. Production costs by major expense type were as follows:

For the Years Ended December 31,				
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Fuel and power	\$ 89,203	\$ 84,649	\$ 4,554	5.4%
Purchased water	99,834	89,502	10,332	11.5%
Chemicals	50,875	54,564	(3,689)	(6.8)%
Waste disposal	28,617	25,193	3,424	13.6%
Total	<u>\$ 268,529</u>	<u>\$ 253,908</u>	<u>\$ 14,621</u>	5.8%

The increase in regulated fuel and power costs was driven by higher costs primarily due to increased production volumes. The increase in purchased water is primarily attributable to higher costs incurred by our suppliers that are passed on to us. The majority of this purchased water increase is in states that permit us to pass-through this increase to our customers without the need for a full rate proceeding. The decrease in chemical costs is primarily the result of favorable contract pricing in addition to favorable water quality due to reduced rainfall in several of our operating subsidiaries. Waste disposal costs increased primarily due to \$1.9 million related to the recognition of previously deferred costs allowed by a cost recovery mechanism in one of our operating companies as well as increases in sludge removal costs in one of our regulated operating companies.

Employee-related costs including wage and salary, group insurance, and pension expense increased \$36.0 million, or 8.0%, for 2010 compared to 2009. These employee-related costs represented 44.5% and 43.5% of operation and maintenance expenses for 2010 and 2009, respectively and include the categories shown in the following table.

For the Years Ended December 31,				
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Salaries and wages	\$ 331,913	\$ 307,120	\$ 24,793	8.1%
Pensions	58,134	51,984	6,150	11.8%
Group insurance	79,958	75,081	4,877	6.5%
Other benefits	16,964	16,819	145	0.9%
Total	<u>\$ 486,969</u>	<u>\$ 451,004</u>	<u>\$ 35,965</u>	8.0%

A driver of the increase in salaries and wages was due to wage increases, higher incentive compensation and severance expenses as well as increased overtime costs of \$5.1 million in certain of our regulated operating companies. Pension expense increased for the year ended December 31, 2010 due to increased pension contributions by certain of our regulated operating companies whose costs are recovered based on the actual cash contributions to our pension trust account. This increase was partially offset by a decrease in the amortization of actuarial losses attributable to higher than expected returns on plan assets in 2009. Group insurance increased due to the deferral of \$2.7 million of costs in 2009 as part of our Pennsylvania subsidiary's rate order. The remainder of the cost increase is attributable to the rising cost of health care.

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Operating supplies and services include the day-to-day expenses of office operation, legal and other professional services, as well as information systems and other office equipment rental charges. For 2010 these costs increased by \$1.6 million, or 0.9%, compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Contracted services	\$ 66,077	\$ 63,483	\$ 2,594	4.1%
Office supplies and services	28,727	28,147	580	2.1%
Transportation	26,330	24,533	1,797	7.3%
Rents	15,745	15,339	406	2.6%
Other	45,089	48,826	(3,737)	(7.7)%
Total	<u>\$ 181,968</u>	<u>\$ 180,328</u>	<u>\$ 1,640</u>	0.9%

The increase in operating supplies and services is attributable to higher consulting expenses and increased transportation costs due to higher gasoline prices during 2010 compared to 2009. Offsetting these increases is the reversal of the \$3.5 million payment previously expensed by our California operating company to the CDFG on behalf of NOAA in 2010.

Maintenance materials and services, which includes emergency repairs, as well as costs for preventive maintenance, increased \$15.0 million, or 24.7%, for 2010 compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Maintenance services and supplies	<u>\$ 75,846</u>	<u>\$ 60,818</u>	<u>\$ 15,028</u>	24.7%

The increased costs above were mainly attributable to higher levels of tank painting, meter testing, pump, tank and well maintenance, and paving costs throughout our regulated subsidiaries.

Customer billing and accounting expenses decreased by \$1.0 million, or 2.2%, for 2010 compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Uncollectible accounts expense	\$ 18,052	\$ 20,700	\$ (2,648)	(12.8)%
Postage	12,348	11,777	571	4.8%
Other	13,624	12,527	1,097	8.8%
Total	<u>\$ 44,024</u>	<u>\$ 45,004</u>	<u>\$ (980)</u>	(2.2)%

The decrease in the uncollectible accounts expense was the result of improved collection in our receivables in excess of 120 days which had a favorable impact of \$2.7 million on our uncollectible account expense partially offset by increased reserves due to higher accounts receivable balances as a result of increased revenues. This decrease is partially offset by the increase in the other category mainly due to an increase in collection agency fees.

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Other operation and maintenance expenses include casualty and liability insurance premiums and regulatory costs. These costs decreased by \$7.4 million, or 16.2%, for 2010 compared to 2009.

	For the Years Ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(in thousands)			
Insurance	\$ 28,244	\$ 31,596	\$ (3,352)	(10.6)%
Regulatory expenses	9,866	13,907	(4,041)	(29.1)%
Total	\$ 38,110	\$ 45,503	\$ (7,393)	(16.2)%

The decrease in insurance expense is primarily due to the positive resolution of prior years' claims in 2010 compared to 2009. Regulatory expenses were higher in 2009 as compared to 2010 due to the write-off of rate case expenses of \$3.5 million in our California subsidiary in 2009.

Operating expenses. The increase in operating expenses for the year ended December 31, 2010 compared to the same period in the prior year is primarily due to the increase in operation and maintenance expense, as explained above, higher depreciation expense of \$14.7 million and increased general taxes of \$16.3 million. The increase in depreciation expense is attributable to our continued investment in our infrastructure and capital expenditures, partially offset by a \$2.4 million write-off of certain software costs in 2009. The general taxes increase was due to higher gross receipts taxes of \$6.5 million, primarily in our New Jersey regulated subsidiary, higher property taxes of \$5.7 million throughout our regulated operating companies, higher capital stock taxes of \$1.7 million mainly in our Pennsylvania subsidiary, and higher payroll taxes of \$1.9 million as a result of our increased wages and salaries for the year December 31, 2010.

Income from continuing operations before income taxes. The \$106.7 million increase for the year ended December 31, 2010, compared to December 31, 2009, is the result of the aforementioned changes in operating revenue and operating expenses.

Market-Based Operations

The following table provides certain financial information for our Market-Based Operations segment for the periods indicated:

	For the years ended December 31,		
	2011	2010	2009
	(in thousands)		
Operating revenues	\$ 327,815	\$ 294,723	\$ 238,180
Operation and maintenance expense	278,459	256,634	209,084
Operating expenses, net	290,854	269,060	217,643
Income from continuing operations before income taxes	39,250	30,443	25,168

Comparison of Results of Operations for the Years Ended December 31, 2011 and 2010

Operating revenues. The increase in revenues for the year ended December 31, 2011, compared to the same period in 2010, is primarily attributable to an increase in the Contract Operations Group revenues of \$22.3 million. This increase is mainly the result of incremental revenues associated with military construction and operations & maintenance projects related to our water and wastewater contracts of \$43.7 million, offset by lower revenues associated with other expired and terminated contracts.

Operation and maintenance. Operation and maintenance expense increased \$21.8 million, or 8.5%, for the year ended December 31, 2011, compared to the year ended December 31, 2010.

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The following table provides information regarding operation and maintenance expense for the years ended December 31, 2011, and 2010, by major expense category:

	For the years ended December 31,			
	2011	2010	Increase (Decrease)	Percentage
	(Dollars in thousands)			
Production costs	\$ 47,897	\$ 54,203	\$ (6,306)	(11.6%)
Employee-related costs	75,012	80,596	(5,584)	(6.9%)
Operating supplies and services	108,657	83,951	24,706	29.4%
Maintenance materials and services	38,568	34,484	4,084	11.8%
Other	8,325	3,400	4,925	144.9%
Total	<u>\$ 278,459</u>	<u>\$ 256,634</u>	<u>\$ 21,825</u>	8.5%

Production costs are comprised of fuel and power, purchased water, chemicals and waste disposal costs. The overall decrease in production costs is mainly attributable to decreased fuel and purchased power as well as chemical costs for the year ended December 31, 2011, as compared to the same period in the prior year, as a result of the cessation of costs related to contracts that terminated and expired during 2010.

Employee-related costs, including wage and salary, group insurance and other employee benefits, decreased \$5.6 million for the year ended December 31, 2011, compared to the same period in 2010. The decrease in these costs for the year ended December 31, 2011 is primarily due to lower expenses related to expired and terminated contracts partially offset by increased costs associated with our military contracts. Additionally, costs were also lower due to reduced headcount attributable to both eliminated as well as vacant positions compared to the same period in 2010.

Operating supplies and services consist primarily of contracted services and expenses of office operation, legal and other professional services, transportation expenses, as well as information systems rental charges and other office equipment rental charges. The increase in these expenses in 2011 compared to the same period in the prior year was primarily attributable to the higher expenses associated with our Contract Operations Group, which is related to the increased activity with our military construction projects corresponding with the increase in revenues, partially offset by lower expenses due to expired and terminated contracts.

The increase in maintenance materials and supplies of \$4.1 million is primarily due to higher maintenance expenses due to increased contract work, corresponding with the increase in revenues.

Other operation and maintenance expenses include casualty and liability insurance premiums and uncollectible accounts expense. Uncollectible accounts expense increased \$3.7 million in 2011 and was mainly due to an increase in accounts written-off and deferred revenue advanced billing adjustments in Homeowners Services.

Operating expense. The increase in operating expenses for the year ended December 31, 2011 is primarily driven by the increase in operation and maintenance expense, which is explained above.

Income from continuing operations before income taxes. The \$8.8 million increase for the year ended December 31, 2011, is the result of the aforementioned changes in operating revenues and operating and maintenance expense.

[Table of Contents](#)**Comparison of Results of Operations for the Years Ended December 31, 2010 and 2009**

Operating revenues. The Market-Based Operations' revenues for 2010 increased by \$56.5 million, or 23.7%, from 2009. The increase in these revenues was primarily attributable to higher revenues in our Contract Operations Group revenues of \$52.1 million associated with our entry into the industrial operations and maintenance market through an acquisition in December 2009, hereafter referred to as the "Contract Operations' Acquisition," increased military contract revenues mainly attributable to incremental contract work awarded to us in 2010, the full year effect in 2010 of two new military contracts announced in 2009 and increased revenues in Homeowner Services, mainly, as a result of increased product penetration within its existing customer base. These increases were partially offset by lower O&M and design and build contract revenues.

Operation and maintenance. Operation and maintenance expense increased \$47.6 million, or 22.7%, for the year ended December 31, 2010, compared to the year ended December 31, 2009. Operation and maintenance expenses for 2010 and 2009, by major expense category, were as follows:

	For the years ended December 31,			
	2010	2009	Increase (Decrease)	Percentage
	(Dollars in thousands)			
Production costs	\$ 54,203	\$ 46,848	\$ 7,355	15.7%
Employee-related costs	80,596	55,491	25,105	45.2%
Operating supplies and services	83,951	77,498	6,453	8.3%
Maintenance materials and services	34,484	24,840	9,644	38.8%
Other	3,400	4,407	(1,007)	(22.9%)
Total	<u>\$ 256,634</u>	<u>\$ 209,084</u>	<u>\$ 47,550</u>	22.7%

The primary driver of the increase is attributable to our Contract Operations' Acquisition which accounted for \$37.5 million of the increase. The remainder of the increase is mainly due to higher costs related to military contracts resulting from incremental construction projects and growth mainly related to the Fort Meade and Fort Belvoir locations. In addition, Homeowner Services experienced higher contractor repair costs of \$3.6 million due to prior claim true-ups coupled with continued growth.

Operating expenses. The increase in operating expenses for the year ended December 31, 2010, from the same period in the prior year, is primarily due to the increase in operation and maintenance expense, as explained above, higher depreciation expense of \$1.7 million and increased general taxes of \$2.2 million.

Income from continuing operations before income taxes. The \$5.3 million increase for the year ended December 31, 2010, compared to December 31, 2009, is the result of the aforementioned changes in operating revenue and operating expenses.

Liquidity and Capital Resources

We regularly evaluate cash requirements for current operations, commitments, development activities and capital expenditures. Our business is very capital intensive and requires significant capital resources. A portion of these capital resources is provided by internally generated cash flows from operations. When necessary, we obtain additional funds from external sources in the debt and equity capital markets and through bank borrowings. Our access to external financing on reasonable terms depends on our credit ratings and current business conditions, including that of the water utility industry in general as well as conditions in the debt or equity capital markets. If these business and market conditions deteriorate to the extent that we no longer have access to the capital markets at reasonable terms, we have access to revolving credit facility with aggregate bank commitments of \$840.0 million. We rely on this revolving credit facility and the capital markets to fulfill our short-term liquidity needs, to issue letters of credit and to back our commercial paper program. Disruptions in the

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credit markets may discourage lenders from extending the terms of such commitments or agreeing to new commitments. Market disruptions may also limit our ability to issue debt and equity securities in the capital markets. See "—Credit Facilities and Short-Term Debt."

In order to meet our short-term liquidity needs, we primarily issue commercial paper which is backed by AWCC's revolving credit facility. AWCC had no outstanding borrowings and \$36.5 million of outstanding letters of credit under its credit facilities as of December 31, 2011. As of December 31, 2011, AWCC had \$813.5 million available under our credit facilities that we can use to fulfill our short-term liquidity needs, to issue letters of credit and back our \$481.0 million outstanding commercial paper. We can provide no assurances that our lenders will meet their existing commitments or that we will be able to access the commercial paper or loan markets in the future on terms acceptable to us or at all.

In addition, our regulated operating companies receive advances and contributions from customers, home builders and real estate developers to fund construction necessary to extend service to new areas. Advances for construction are refundable for limited periods, which vary according to state regulations, as new customers begin to receive service or other contractual obligations are fulfilled. Amounts which are no longer refundable are reclassified to contributions in aid of construction. Utility plant funded by advances and contributions is excluded from the rate base. Generally, we depreciate contributed property and amortize contributions in aid of construction at the composite rate of the related property. Some of our subsidiaries do not depreciate contributed property, based on regulatory guidelines. A reduction in advances and contributions in aid of construction could reduce our liquidity.

We use our capital resources, including cash, to (i) fund capital requirements, including construction expenditures, (ii) pay off maturing debt, (iii) pay dividends, (iv) fund pension and postretirement welfare obligations and (v) invest in new and existing ventures. We spend a significant amount of cash on construction projects that we expect to have a long-term return on investment. Additionally, we operate in rate-regulated environments in which the amount of new investment recovery may be limited, and where such recovery takes place over an extended period of time, as our recovery is subject to regulatory lag. See "Business—Regulation—Economic Regulation." We expect to fund future maturities of long-term debt through a combination of external debt and cash flows from operations. Since we continue to make investments equal to or greater than our cash flows from operating activities, we have no plans to reduce debt significantly.

The Company believes it has sufficient liquidity and ability to manage its expenditures should there be a substantial disruption of the capital and credit markets.

The Company expects to have access to liquidity in the capital markets on favorable terms before the maturity dates of its current credit facilities. In addition, the Company can delay major capital investments or other funding requirement or pursue financing from other sources to preserve liquidity, if necessary. The Company believes it can rely upon cash flows from operations to meet its obligations and fund its minimum required capital investments for an extended period of time.

Cash Flows from Operating Activities

Cash flows from operating activities primarily result from the sale of water and wastewater services and, due to the seasonality of demand, are weighted toward the third quarter of each fiscal year. Our future cash flows from operating activities will be affected by economic utility regulation; infrastructure investment; inflation; compliance with environmental, health and safety standards; production costs; customer growth; declining per customer usage of water; weather and seasonality; and overall economic conditions.

Cash flows from operating activities have been a reliable, steady source of funding, sufficient to meet operating requirements, make our dividend payments and fund a portion of our capital expenditures requirements. We will seek access to debt and equity capital markets to meet the balance of our capital

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expenditure requirements as needed. There can be no assurance that we will be able to access such markets successfully on favorable terms or at all. Operating cash flows can be negatively affected by changes in our rate regulated environments or changes in our customers' economic outlook and ability to pay for service in a timely manner. We can provide no assurance that our customers' historical payment pattern will continue in the future.

The following table provides a summary of the major items affecting our cash flows from operating activities for the periods indicated:

	<u>2011</u>	<u>2010</u>	<u>2009</u>
	(in thousands)		
Net income (loss)	\$ 309,613	\$ 267,827	\$ (233,083)
Add (subtract):			
Non-cash operating activities(1)	673,795	598,612	1,016,826
Changes in working capital(2)	11,679	45,751	(60,141)
Pension and postretirement healthcare contributions	(186,730)	(137,257)	(127,446)
Net cash flows provided by operations	<u>\$ 808,357</u>	<u>\$ 774,933</u>	<u>\$ 596,156</u>

- (1) Includes, depreciation and amortization, provision for deferred income taxes, amortization of deferred investment tax credits, provision for losses on utility accounts receivable, allowance for other funds used during construction, (gain) loss on sale of assets, and pension and non-pension post retirement benefits expense and other non-cash items. Details of each component can be found in the Consolidated Statements of Cash Flows.
- (2) Changes in working capital include changes to accounts receivable and unbilled utility revenue, income taxes receivable, other current assets, accounts payable, taxes accrued (including income taxes), interest accrued and other current liabilities.

The increase in cash flows from operations for the year ended December 31, 2011 compared to the same period in 2010 is primarily driven by additional revenues in 2011 offset by additional pension contributions and the receipt of a tax refund in the first half of 2010 that did not occur in 2011.

The increase in cash flows from operations during 2010 compared to 2009 is primarily due to an increase in revenues and the change in working capital.

The Company currently expects to make pension and postretirement benefit contributions to the plan trusts of \$156.7 million in 2012, of which \$40.4 million was already made in 2012. In addition, we currently estimate that contributions will amount to \$132.1 million in 2013, \$155.1 million in 2014, \$148.8 million in 2015 and \$132.0 million in 2016. Actual amounts contributed could change materially from these estimates as a result of changes in assumptions and investment returns.

Cash Flows from Investing Activities

Cash flows used in investing activities were as follows for the periods indicated:

	<u>For the Years Ended December 31,</u>		
	<u>2011</u>	<u>2010</u>	<u>2009</u>
	(in thousands)		
Net capital expenditures	\$ (924,858)	\$ (765,636)	\$ (785,265)
Other investing activities, net(1)	12,461	18,893	81,654
Net cash flows used in investing activities	<u>\$ (912,397)</u>	<u>\$ (746,743)</u>	<u>\$ (703,611)</u>

- (1) Includes acquisitions, proceeds from the sale of assets and securities, removal costs from property, plant and equipment retirements, net funds released and other.

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The increase in our capital expenditures for the year ended December 31, 2011 is attributable to the construction of and replacement of certain treatment facilities, and infrastructure in our Pennsylvania subsidiary as well as increased capital spending associated with our business transformation project ("BT") as we moved into its design and build phase.

Current estimates indicate that BT expenditures could total as much as \$280 million prior to any AFUDC allowed. Through December 31, 2011, we have spent \$139.7 million on the project with \$105.3 million spent in 2011. Expenditures associated with BT are included in the estimated capital investment spending of \$900 million for 2012 and \$800 million to \$1 billion in the foreseeable future as outlined above. As with any other initiative of this magnitude, there are risks that could result in increased costs. Any technical difficulties in developing or implementing this initiative, such as implementing a successful change management process, may result in delays, which in turn, may increase the costs of the project and also delay and, perhaps, reduce any cost savings and efficiencies expected to result from the initiative. When we make adjustments to our operations, we may incur incremental expenses prior to realizing the benefits of a more efficient workforce and operating structure. While we believe such expenditures can be recovered through regulated rates, we can provide no guarantee that we will be able to achieve timely rate recovery of these increased costs associated with this transformation project. Any such delays or difficulties encountered with such recovery may have a material and adverse impact on our business, customer relationships and financial results. We believe that the goals of BT—increasing our operating efficiency and effectiveness and controlling the costs associated with the operation of our business—are important to providing the quality service to our customers and communities we serve.

Cash flows used in investing activities increased in 2010 compared to 2009 mainly due to the change in "Other investing activities" in 2010 which resulted from the change in the net restricted funds released attributable primarily to the drawdown of the restricted funds by our Kentucky and Pennsylvania regulated operating companies. This increase was partially offset by a decrease in capital expenditures as a result of delayed construction in the first quarter of 2010 due to the severe weather conditions in certain states in which we operate as well as a higher spending in 2009 on water treatment plant expenditures as a number of facilities were under construction in 2009.

As previously noted, in 2012, we estimate that Company-funded capital investment will total approximately \$900 million and for years in the foreseeable future beyond 2012 we estimate that such investment will be between \$800 million and \$1 billion annually. We intend to invest capital prudently to provide essential services to our regulated customer base, while working with regulators in the various states in which we operate to have the opportunity to earn an appropriate rate of return on our investment and a return of our investment.

Our infrastructure investment plan consists of both infrastructure renewal programs, where we replace infrastructure as needed and major capital investment projects, where we construct new water and wastewater treatment and delivery facilities to meet new customer growth and water quality regulations. Our projected capital expenditures and other investments are subject to periodic review and revision to reflect changes in economic conditions and other factors.

The following table provides a summary of our historical capital expenditures:

	For the Years Ended December 31,		
	2011	2010	2009
	(in thousands)		
Transmission and distribution	\$ 298,564	\$ 299,303	\$ 309,851
Treatment and pumping	191,771	133,473	125,031
Services, meter and fire hydrants	175,635	157,982	153,455
General structures and equipment	84,059	88,932	94,141
Business transformation project	99,891	22,462	5,139
Sources of supply	58,066	31,452	44,127
Wastewater	16,872	32,032	53,521
Total capital expenditures	<u>\$ 924,858</u>	<u>\$ 765,636</u>	<u>\$ 785,265</u>

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Capital expenditures for the year ended December 31, 2011 increased by \$159.2 million or 20.8% compared to the same period in 2010, mainly as a result of the increased BT expenditures of \$77.4 million and increased treatment and pumping expenditures of \$58.3 million as a result of certain water treatment plants projects in our Pennsylvania, New Jersey and Indiana subsidiaries.

Capital expenditures for 2010 decreased by \$19.6 million or 2.5% from \$785.3 million in 2009 as a result of delayed construction due to severe weather conditions in the first quarter of 2010 in certain states in which we operate, and increased water treatment facility expenditures in 2009.

One avenue to seek growth is through tuck-ins, by helping commissions with troubled water systems as well as other acquisitions that are complementary to our existing business and support the continued geographical diversification and growth of our operations. Generally, acquisitions are funded initially with short-term debt and later refinanced with the proceeds from long-term debt or equity offerings.

The following provides a summary of the acquisitions and dispositions affecting our cash flows from investing activities in the years indicated:

2011:

- We paid approximately \$7.2 million for numerous regulated water and wastewater systems in Missouri, New Jersey, and Pennsylvania, with the largest associated with the acquisition of 11 regulated water systems and 48 wastewater systems in Missouri in May 2011 for a purchase price of \$3.3 million.
- We received approximately \$10.0 million for the sale of assets and securities, including \$6.2 million associated with the sale of our Texas subsidiary's assets and \$2.9 million from the sale of the Applied Water Management subsidiary.

2010:

- We paid approximately \$1.6 million for five regulated water systems and one wastewater system.

2009:

- We paid approximately \$18.1 million for seven acquisitions which consisted of six regulated water and wastewater systems and the Contract Operations' Acquisition.

In January 2012, we received \$461.0 million in sales proceeds associated with the divestiture of our Arizona and New Mexico subsidiaries. The proceeds will be used to reduce our outstanding commercial paper and fund company operations.

Our investing activities could require considerable capital resources which we have generated through operations and attained through financing activities. We can provide no assurances that these resources will be sufficient to meet our expected investment needs and may be required to delay or reevaluate our investment plans.

Cash Flows from Financing Activities

Our financing activities, primarily focused on funding construction expenditures, include the issuance of long-term and short-term debt, mainly through AWCC. We access capital markets on a regular basis, subject to market conditions. As a result of the anticipated proceeds from the divestiture of our Arizona and New Mexico regulated businesses, we funded the majority of our 2011 cash requirements with commercial paper which will be reduced upon receipt of the proceeds from the transaction.

Additionally, because of this transaction and our overall cash flows from operations, we do not anticipate the need for an equity offering in 2012. In addition, new infrastructure may be funded with customer advances and contributions for construction (net of refunds). This amounted to \$22.3 million, \$7.0 million and \$21.2 million for the years ended December 31, 2011, 2010 and 2009, respectively.

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On May 1, 2009, we and AWCC filed a universal shelf registration statement that enabled us to offer and sell from time to time various types of securities, including common stock, preferred stock and debt securities, all subject to market demand and ratings status. During 2011 and 2010, no common stock or preferred stock offerings were made pursuant to this filing.

Pursuant to a public offering in June 2009, the Company completed the sale of 14.5 million shares of common stock at \$17.25 per share. The proceeds from the offering, net of underwriters' discounts and expenses payable by the Company, were \$242.3 million. The proceeds from the offering were used to repay short-term debt. At the same time, RWE continued to divest of its investment in the Company. During the remainder of 2009, RWE continued to divest of its remaining investment in the Company through the sale of additional shares and as a result in November 2009, RWE became fully divested of our common stock. The Company did not receive any proceeds from the RWE sales of the Company's shares.

In regards to debt financings, the following long-term debt was issued in 2011:

<u>Company</u>	<u>Type</u>	<u>Interest Rate</u>	<u>Maturity</u>	<u>Amount</u> <u>(in thousands)</u>
Other subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-1.56%	2031	\$ 12,510
Total issuances				<u>\$ 12,510</u>

The following long-term debt was retired through optional redemption or payment at maturity during 2011:

<u>Company</u>	<u>Type</u>	<u>Interest Rate</u>	<u>Maturity</u>	<u>Amount</u> <u>(in thousands)</u>
American Water Capital Corp.	Senior notes-fixed rate	6.00%-8.25%	2011-2039	\$ 28,287
Other subsidiaries	Private activity bonds and government funded debt-fixed rate	0.00%-5.90%	2011-2034	7,976
Other subsidiaries	Mortgage bonds—fixed rate	8.21%-9.71%	2011-2022	33,191
Other subsidiaries	Mandatory redeemable preferred stock	4.60%-9.18%	2013-2019	1,888
Other	Capital leases & other			4,078
Total retirements & redemptions				<u>\$ 75,420</u>

The following long-term debt was issued in 2010:

<u>Company</u>	<u>Type</u>	<u>Interest Rate</u>	<u>Maturity</u>	<u>Amount</u> <u>(in thousands)</u>
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.38%	2040 a	\$ 26,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.25%	2040 b	25,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.25%	2040 c	35,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	4.85%	2040 d	25,000
American Water Capital Corp.	Private activity bonds and government funded debt—fixed rate	5.25%	2028 e	10,635
American Water Capital Corp.	Senior notes—fixed rate	6.00%	2040 f	30,000
Other subsidiaries	Private activity—fixed rate	4.45%-5.60%	2023-2034 g	150,000
Other subsidiaries	Private activity—fixed rate	4.70%-4.88%	2025-2029 h	75,000
Other subsidiaries	Private activity—fixed rate	0.00%-2.56%	2021-2030 i	14,699
Total issuances				<u>\$ 391,334</u>

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Note: Private activity type defined as private activity bonds and government funded debt.

- (a) On June 24, 2010, AWCC closed an offering of \$26.0 million in tax-exempt water facility revenue bonds issued by Owen County, Kentucky. The bonds have a coupon of 5.38% with a maturity of 2040 and a 10-year call option. The proceeds from the bond offering will be used to repay short-term debt related to the construction of the water treatment and transmission facility located in Owen County, Kentucky, as well as to pay remaining costs of acquisition, construction, installation and equipping of the water treatment and transmission facility.
- (b) On May 27, 2010, AWCC closed an offering of \$25.0 million in tax-exempt water facility revenue bonds issued by the Illinois Finance Authority. The bonds have a coupon of 5.25% with a maturity of 2040 and a 10-year call option. The proceeds from the bond offering will be used to fund water facility projects in Champaign, Livingston, Logan, Madison, Peoria and St. Clair counties in Illinois.
- (c) On August 18, 2010, AWCC closed an offering of \$35.0 million in tax-exempt bonds issued through the State of California Pollution Control Financing Authority. The bonds have a coupon of 5.25% with a 30-year maturity and a 10-year call option. The proceeds from bond offering will be used to fund specific CAWC projects.
- (d) On September 16, 2010, AWCC closed an offering of \$25.0 million in tax-exempt water facility revenue bonds issued through the Indiana Finance Authority. The bonds have a coupon rate 4.85% with a 30-year maturity and a 10-year call option. The proceeds from the bonds will be used to fund water facility projects in Indiana-American Water Company, Inc.'s service territory.
- (e) Represents \$10.6 million of variable rate debt that was held in the Company's treasury at December 31, 2009 because no investors were willing to purchase the bonds. On July 27, 2010, this variable rate debt was remarketed as fixed rate bonds with a coupon rate of 5.25% and a maturity date of 2028.
- (f) On December 1, 2010 AWCC closed on a 6.00% senior fixed rate note. Proceeds used to paydown short-term debt.
- (g) On July 9, 2010, our operating subsidiary, NJAWC, closed on a refunding of four outstanding bonds issuances. To accomplish this refunding, the New Jersey Economic Development Authority issued three new series of bonds on behalf of NJAWC. The new bonds have coupon rates of 5.60%, 5.10% and 4.45% and maturities of 2034, 2023 and 2023, respectively.
- (h) On November 1, 2010, NJAWC closed on refinancings of two outstanding bond issues and the New Jersey Economic Development Authority issued two new series of bonds on behalf of NJAWC.
- (i) Proceeds received from various financing/development authorities. The proceeds will be used to fund certain projects.

The following long-term debt was retired through optional redemption or payment at maturity during 2010:

Company	Type	Interest Rate	Maturity	Amount (in thousands)
American Water Capital Corp.	Senior notes-fixed rate	6.00%-6.87%	2011-2039	\$ 28,157
Other subsidiaries	Private activity-fixed rate and government funded debt	0.00%-6.88%	2010-2036	233,476
Other subsidiaries	Mortgage bonds-fixed rate	7.86%-8.98%	2010-2011	10,275
Other subsidiaries	Mandatory redeemable preferred stock	4.60%-6.00%	2013-2019	218
Other	Capital leases and other			792
Total retirements & redemptions				<u>\$ 272,918</u>

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The following long-term debt was issued in 2009:

Company	Type	Interest Rate	Maturity		Amount (in thousands)
American Water Capital Corp.	Private activity-fixed rate	6.25%	2039	a	\$ 45,390
American Water Capital Corp.	Private activity-fixed rate	6.00%	2018	b	18,250
American Water Capital Corp.	Private activity-fixed rate	6.10%	2019	b	17,950
American Water Capital Corp.	Private activity-fixed rate	6.75%	2031	b	16,700
American Water Capital Corp.	Private activity-fixed rate	6.25%	2032	c	24,860
American Water Capital Corp.	Private activity-fixed rate	5.63%	2039	a	26,000
American Water Capital Corp.	Private activity-fixed rate	6.25%	2032	d	23,325
American Water Capital Corp.	Private activity-fixed rate	5.25%	2039	e	28,500
American Water Capital Corp.	Senior notes-fixed rate	8.27%	2039	f	25,500
American Water Capital Corp.	Senior notes-fixed rate	7.21%	2019	f	24,500
American Water Capital Corp.	Senior notes-fixed rate	8.25%	2038	f	75,000
American Water Capital Corp.	Senior notes-fixed rate	6.00%	2039	f	60,000
Other subsidiaries	Private activity-fixed rate	6.20%	2039	g	80,000
Other subsidiaries	Private activity-fixed rate	1.27%	2029	h	2,242
Other subsidiaries	Private activity-fixed rate	4.14%	2029	i	1,315
Other subsidiaries	Private activity-fixed rate	5.00%	2039	j	10,500
Other subsidiaries	Private activity-fixed rate	5.70%	2039	j	134,224
Other subsidiaries	Private activity-floating rate	1.00%	2015	d	8,560
Other subsidiaries	Mortgage bonds-fixed rate	5.48%	2019	f	25,000
Other subsidiaries	Mortgage bonds-fixed rate	6.35%	2039	f	75,000
Other	Capital lease	8.82%	2011		41
Total issuances					<u>\$ 722,857</u>

- (a) The proceeds from the bond offering were used to repay short-term debt related to the construction of a water treatment and transmission facility located in Owen County, Kentucky, as well as to pay the remaining costs of acquisition, construction, installation and equipping of the water treatment and transmission facility as the construction proceeds to completion.
- (b) On May 21, 2009, AWCC remarketed \$52.9 million of variable rate demand notes as fixed rate Tax Exempt Water Facility Revenue bonds. The net proceeds from this offering was used to repay short-term debt.
- (c) On August 27, 2009, AWCC successfully remarketed \$24.9 million of variable rate demand notes previously held in the Company's treasury. The net proceeds from this offering were used to repay short-term debt.
- (d) On May 21, 2009, AWCC successfully remarketed \$31.9 million of variable rate demand notes previously held in the Company's treasury. The new notes had an interest rate of 1.00%. The net proceeds from this offering were used to repay commercial paper. Subsequently, on August 27, 2009, AWCC remarketed the \$23.3 million of the variable rate demand notes as fixed rate Tax Exempt Water Facility Revenue bonds with an interest rate of 6.25% and the remaining \$8.6 million was remarketed at variable rates.
- (e) On October 1, 2009 AWCC closed an offering of \$28.5 million in tax-exempt water facility revenue bonds with a 10-year call option issued by the Illinois Finance Authority. The proceeds from this offering will be used to fund certain capital improvements.
- (f) The proceeds were used to pay down short-term debt.
- (g) On April 8, 2009, Pennsylvania-American Water Company ("PAWC") closed an offering to issue \$80.0 million in tax-exempt water facility revenue bonds through the Pennsylvania Economic Development Financing Authority ("PEDFA"). The proceeds from the offering will be used to fund certain capital improvement projects. As of December 31, 2009, we have drawn down \$40.7 million of these funds.
- (h) On August 26, 2009, PAWC received \$2.2 million through the Pennsylvania Infrastructure Investment Authority for the installation of mains in the Hanover and Colliers Water System.

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- (i) Ohio-American Water Company received proceeds from the Ohio Water Development Authority. The proceeds were used to fund line replacements in the Ashtabula service area.
- (j) On October 20, 2009, NJAWC closed an offering of tax-exempt water facility revenue bonds. The proceeds were use to pay down short-term debt.

In connection with the Contract Operations' Acquisition, we assumed \$4.0 million of capital lease obligations. Also, in December 2009, we refunded and reissued \$93.1 million of Pennsylvania-American Water Company private activity general mortgage bonds scheduled to mature in 2032 and 2033. The bond's 3.60% fixed interest rate expired in December 2009, and the new bonds have a fixed interest rate of 5.50% with a maturity of 2039.

The following long-term debt was retired through optional redemption or payment at maturity during 2009:

<u>Company</u>	<u>Type</u>	<u>Interest Rate</u>	<u>Maturity</u>	<u>Amount (in thousands)</u>
American Water Capital Corp.	Floating rate	1.55%-2.20%	2018-2032	\$ 86,860
American Water Capital Corp.	Senior notes-fixed rate	6.87%-8.25%	2011-2038	28,147
Other subsidiaries	Floating rate	1.50%-10.00%	2015-2032	33,420
Other subsidiaries	Notes payable and other	5.76%-9.87%	2009-2013	171
Other subsidiaries	Mortgage bonds-fixed rate	6.90%-9.22%	2009-2011	20,847
Other subsidiaries	Private activity-fixed rate	0.00%-5.90%	2009-2034	8,505
Mandatory redeemable preferred stock		4.60%-6.00%	2013-2019	218
Other	Capital lease			181
Total retirements & redemptions				\$ 178,349

From time to time and as market conditions warrant, we may engage in long-term debt retirements via tender offers, open market repurchases or other viable alternatives to strengthen our balance sheets.

Credit Facilities and Short-Term Debt

The components of short-term debt were as follows:

	<u>December 31, 2011</u>	<u>December 31, 2010</u>
	(in thousands)	
Revolving credit lines	\$ —	\$ 2,734
Commercial paper, net of discount	481,048	175,290
Book-overdraft	34,002	50,881
Total short-term debt	\$ 515,050	\$ 228,905

On December 22, 2010, AWCC, our finance subsidiary, extended for an additional year a \$10.0 million committed revolving line of credit with PNC Bank, N.A which was scheduled to terminate on December 31, 2010. AWCC chose not to extend this credit line and therefore it terminated on December 31, 2011. As such, there were no outstanding borrowings under this revolving line of credit at December 31, 2011. As of December 31, 2010, the outstanding borrowing against this credit line was \$2.7 million. This line was used primarily for short-term working capital needs. Interest rates on advances under this line of credit were based on the one month LIBOR on the outstanding debt plus 175 basis points for 2010 and 2011. In addition, there was a fee of 25 basis points charged quarterly on the portion of the commitment that is undrawn.

AWCC has entered into an \$840.0 million senior unsecured credit facility syndicated among a group of 10 banks. This revolving credit facility, which is scheduled to expire on September 15, 2012, is principally used to

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support the commercial paper program at AWCC and to provide up to \$150.0 million in letters of credit. A majority of the banks agreed to further extend \$685.0 million of commitments under this revolving credit facility to September 15, 2013. We closely monitor events in the financial markets and the financial institutions associated with this credit facility. No financial institution has more than 14% of the aggregate commitment through September 15, 2012 and from September 15, 2012 through the current expiration date of September 15, 2013 no institution will have more than 17% of the aggregate commitment. If any lender defaults in its obligation to fund advances, the Company may request the other lenders to assume the defaulting lender's commitment or replace such defaulting lender by designating an assignee willing to assume the commitment. However, the remaining lenders have no obligation to assume a defaulting lender's commitment and we can provide no assurances that we will be able to replace a defaulting lender. Prior to the credit facility expiration, we expect to renegotiate or replace it in order to provide sufficient liquidity to finance operations and capital expenditure. The availability of such facility, including the amounts for borrowing thereunder, and its terms and conditions, will depend on the credit markets at the time as well as the Company's credit ratings and operating requirements.

On December 31, 2011 and 2010, AWCC had the following sub-limits and available capacity under the revolving credit facility and indicated amounts of outstanding commercial paper:

	<u>Credit Facility Commitment</u>	<u>Available Credit Facility Capacity</u>	<u>Letter of Credit Sublimit</u>	<u>Available Letter of Credit Capacity</u>	<u>Outstanding Commercial Paper (Net of Discount)</u>	<u>Credit Line Borrowings</u>
	(in thousands)					
December 31, 2011	\$ 850,000	\$ 813,548	\$ 150,000	\$ 113,548	\$ 481,048	\$ —
December 31, 2010	\$ 850,000	\$ 810,469	\$ 150,000	\$ 113,203	\$ 175,290	\$ 2,734

AWCC had no outstanding borrowings under the credit facilities and \$32.0 million of outstanding letters of credit under this credit facility as of February 21, 2012. Also, as of February 21, 2012, AWCC had \$94.7 million of commercial paper outstanding.

Interest rates on advances under the revolving credit facility are based on either prime or LIBOR plus an applicable margin based upon our credit ratings, as well as total outstanding amounts under the agreement at the time of the borrowing. The maximum LIBOR margin is 55 basis points.

The weighted average interest rate on short-term borrowings for the years ended December 31, 2011 and 2010 was approximately 0.41% and 0.42%, respectively.

Capital Structure

The following table indicates the percentage of our capitalization represented by the components of our capital structure as of December 31, 2011, 2010 and 2009:

	<u>At December 31, 2011</u>	<u>At December 31, 2010</u>	<u>At December 31, 2009</u>
Common stockholder equity and preferred stock without mandatory redemption rights	42%	42%	42%
Long-term debt and redeemable preferred stock at redemption value	53%	55%	56%
Short-term debt and current portion of long-term debt	5%	3%	2%
	<u>100%</u>	<u>100%</u>	<u>100%</u>

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The change in the 2011 capital structure compared to 2010 is mainly attributable to the increase in outstanding commercial paper in 2011 compared to 2010. We used the net proceeds from the sale of our Arizona and New Mexico subsidiaries to pay down commercial paper.

Debt Covenants

Our debt agreements contain financial and non-financial covenants. To the extent that we are not in compliance, we or our subsidiaries may be restricted in our ability to pay dividends, issue debt or access our revolving credit lines. We were in compliance with our covenants as of December 31, 2011. Long-term debt indentures contain a number of covenants that, among other things, limit the Company from issuing debt secured by the Company's assets, subject to certain exceptions.

Certain long-term notes and the revolving credit facility requires us to maintain a ratio of consolidated total indebtedness to consolidated total capitalization of not more than 0.70 to 1.00. On December 31, 2011, our ratio was 0.58 to 1.00 and therefore we were in compliance with the ratio.

Security Ratings

Our access to the capital markets, including the commercial paper market, and respective financing costs in those markets, is directly affected by securities ratings of the entity that is accessing the capital markets. We primarily access the capital markets, including the commercial paper market, through AWCC. However, we also issue debt at our regulated subsidiaries, primarily in the form of tax exempt securities, to lower our overall cost of debt. On November 30, 2011, Moody's Investors Service, which we refer to as Moody's, reaffirmed its "Baa2" corporate credit rating on AWCC and American Water and AWCC's "P2" short-term rating. The rating outlook for both American Water and AWCC is stable. On January 30, 2012, Standard & Poor's Ratings Services, which we refer to as S&P, reaffirmed its "BBB+" corporate credit rating on AWCC and American Water and AWCC's "A2" short-term rating. S&P's rating outlook for both American Water and AWCC is stable

The following table shows the Company's securities ratings as of December 31, 2011:

<u>Securities</u>	<u>Moody's Investors Service</u>	<u>Standard & Poor's Ratings Service</u>
Senior unsecured debt	Baa2	BBB+
Commercial paper	P2	A2

A security rating is not a recommendation to buy, sell or hold securities and may be subject to revision or withdrawal at any time by the assigning rating agency, and each rating should be evaluated independently of any other rating. Security ratings are highly dependent upon our ability to generate cash flows in an amount sufficient to service our debt and meet our investment plans. We can provide no assurances that our ability to generate cash flow is sufficient to maintain our existing ratings. None of our borrowings are subject to default or prepayment as a result of the downgrading of these security ratings, although such a downgrading could increase fees and interest charges under our credit facilities.

As part of the normal course of business, we routinely enter into contracts for the purchase and sale of water, energy, chemicals and other services. These contracts either contain express provisions or otherwise permit us and our counterparties to demand adequate assurance of future performance when there are reasonable grounds for doing so. In accordance with the contracts and applicable contract law, if we are downgraded by a credit rating agency, especially if such downgrade is to a level below investment grade, it is possible that a counterparty would attempt to rely on such a downgrade as a basis for making a demand for adequate assurance

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of future performance. Depending on the Company's net position with a counterparty, the demand could be for the posting of collateral. In the absence of expressly agreed provisions that specify the collateral that must be provided, the obligation to supply the collateral requested will be a function of the facts and circumstances of the Company's situation at the time of the demand. If we can reasonably claim that we are willing and financially able to perform our obligations, it may be possible to argue successfully that no collateral should be posted or that only an amount equal to two or three months of future payments should be sufficient. We do not expect to post any collateral which will have a material adverse impact on the Company's results of operations, financial position or cash flows.

Dividends

Our board of directors has adopted a dividend policy to distribute to our stockholders a portion of our net cash provided by operating activities as regular quarterly dividends, rather than retaining that cash for other purposes. We expect that dividends will be paid quarterly to holders of record approximately 15 days prior to the distribution date. Since the dividends on our common stock will not be cumulative, only declared dividends will be paid.

During 2011, 2010 and 2009, we paid \$157.9 million, \$150.3 million and \$137.3 million in dividends, respectively. For 2011, we paid a dividend of \$0.23 per share on December 1 and September 1 and \$0.22 per share on June 1 and March 1. For 2010, we paid a dividend of \$0.22 per share on December 1 and September 1 and \$0.21 per share on June 1 and March 1. For 2009, we paid a dividend of \$0.21 per share on December 1 and September 1 and \$0.20 per share on June 1 and March 2.

Subject to applicable law and the discretion of our board of directors, we will pay cash dividends of approximately \$0.23 per share per quarter in 2012, to be paid approximately 60 days after the end of each fiscal quarter. The quarterly and annual average aggregate dividend amounts for the four quarters would be \$40.4 million, and \$161.6 million annually. The aggregate dividend amounts are based upon 175.7 million shares outstanding as of December 31, 2011. Under Delaware law, our board of directors may declare dividends only to the extent of our "surplus" (which is defined as total assets at fair market value *minus* total liabilities, *minus* statutory capital) or, if there is no surplus, out of our net profits for the then current and/or immediately preceding fiscal year. Although we believe we will have sufficient net profits or surplus to pay dividends at the anticipated levels during the next four quarters, our board of directors will seek periodically to assure itself of this before actually declaring any dividends. In future periods, our board of directors may seek opinions from outside valuation firms to the effect that our solvency or assets are sufficient to allow payment of dividends, and such opinions may not be forthcoming. If we sought and were not able to obtain such an opinion, we likely would not be able to pay dividends.

On December 9, 2011, our board of directors declared a quarterly cash dividend payment of \$0.23 per share payable on March 1, 2012 to all shareholders of record as of February 3, 2012. Additionally, on February 24, 2012, our board of directors declared a quarterly cash dividend payment of \$0.23 per share payable on June 1, 2012 to all shareholders of record as of April 20, 2012.

Regulatory Restrictions

The issuance by the Company or AWCC of long-term debt or equity securities does not require authorization of any state PUC if no guarantee or pledge of the regulated subsidiaries is utilized. However, state PUC authorization is required to issue long-term debt or equity securities at most of our regulated subsidiaries. Our regulated subsidiaries normally obtain the required approvals on a periodic basis to cover their anticipated financing needs for a period of time or in connection with a specific financing.

Under applicable law, our subsidiaries can pay dividends only from retained, undistributed or current earnings. A significant loss recorded at a subsidiary may limit the dividends that the subsidiary can distribute to us.

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Insurance Coverage

We carry various property, casualty and financial insurance policies with limits, deductibles and exclusions that we believe are consistent with industry standards. However, insurance coverage may not be adequate or available to cover unanticipated losses or claims. We are self-insured to the extent that losses are within the policy deductible or exceed the amount of insurance maintained. Such losses could have a material adverse effect on our short-term and long-term financial condition and our results of operations and cash flows.

Contractual Obligations and Commitments

We enter into obligations with third parties in the ordinary course of business. These financial obligations, as of December 31, 2011, are set forth in the table below:

Contractual obligation	Total	Less Than			
		1 Year	1-3 Years (in thousands)	3-5 Years	More Than 5 Years
Long-term debt obligations(a)	\$ 5,316,578	\$ 27,719	\$ 118,275	\$ 93,100	\$ 5,077,484
Interest on long-term debt(b)	5,313,845	325,398	641,553	632,397	3,714,497
Capital lease obligations(c)	1,264	237	157	78	792
Interest on capital lease obligations(d)	1,208	141	226	212	629
Operating lease obligations(e)	175,869	21,528	32,820	20,049	101,472
Purchase water obligations(f)	683,707	48,916	95,028	90,843	448,920
Other purchase obligations(g)	72,824	72,824	—	—	—
Postretirement benefit plans' obligations(h)	165,883	29,983	56,400	53,400	26,100
Pension Plan's obligations(h)	671,100	126,700	230,800	227,400	86,200
Preferred stocks with mandatory redemption requirements	22,101	899	3,578	3,562	14,062
Interest on preferred stocks with mandatory redemption requirements	17,786	1,849	3,297	2,700	9,940
Other obligations(i)	814,790	205,919	103,834	61,259	443,778
Total	\$ 13,256,955	\$ 862,113	\$ 1,285,968	\$ 1,185,000	\$ 9,923,874

Note: The above table reflects only financial obligations and commitments. Therefore, performance obligations associated with our Market-Based Operations are not included in the above amounts.

- (a) Represents sinking fund obligations and debt maturities.
- (b) Represents expected interest payments on outstanding long-term debt. Amounts reported may differ from actual due to future refinancing of debt.
- (c) Represents future minimum payments under noncancelable capital leases.
- (d) Represents expected interest payments on noncancelable capital leases.
- (e) Represents future minimum payments under noncancelable operating leases, primarily for the lease of motor vehicles, buildings, land and other equipment including water facilities and systems constructed by partners under the Public-Private Partnerships described below.
- (f) Represents future payments under water purchase agreements for minimum quantities of water.
- (g) Represents the open purchase orders as of December 31, 2011, for goods and services purchased in the ordinary course of business.
- (h) Represents contributions expected to be made to pension and post retirement benefit plans for the years 2012 through 2017.
- (i) Includes an estimate of advances for construction to be refunded, capital expenditures estimated to be required under legal and binding contractual obligations, contracts entered into for energy purchases, a liability associated with a conservation agreement and service agreements.

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Public-Private Partnerships

West Virginia-American Water Company, which we refer to as WVAWC, has entered into a series of agreements with various public entities, which we refer to as the Partners, to establish certain joint ventures, commonly referred to as "public-private partnerships." Under the public-private partnerships, WVAWC constructed utility plant, financed by WVAWC, and the Partners constructed utility plant (connected to WVAWC's property), financed by the Partners. WVAWC agreed to transfer and convey some of its real and personal property to the Partners in exchange for an equal principal amount of Industrial Development Bonds, commonly referred to as IDBs, issued by the Partners under a state Industrial Development Bond and Commercial Development Act. WVAWC leased back the total facilities, including portions funded by both WVAWC and the Partners, under leases for a period of 40 years.

WVAWC leased back the transferred facilities under capital leases for a period of 40 years. The leases have payments that approximate the payments required by the terms of the IDBs. We have presented the transaction on a net basis in the consolidated financial statements. The carrying value of the transferred facilities was approximately \$159.2 million at December 31, 2011.

Performance Obligations

We have entered into agreements for the provision of services to water and wastewater facilities for the United States military, municipalities and other customers. These military services agreements expire between 2051 and 2060 and have remaining performance commitments as measured by estimated remaining contract revenues of \$2,037.0 million at December 31, 2011. The Operations and Maintenance agreements with municipalities and other customers expire between 2012 and 2048 and have remaining performance commitments as measured by estimated remaining contract revenue of \$1,076.0 million at December 31, 2011. Some of the Company's long-term contracts to operate and maintain a municipality's, federal government's or other party's water or wastewater treatment and delivery facilities include responsibility for certain major maintenance for some of the facilities, in exchange for an annual fee.

Critical Accounting Policies and Estimates

The application of critical accounting policies is particularly important to our financial condition and results of operations and provides a framework for management to make significant estimates, assumptions and other judgments. Although our management believes that these estimates, assumptions and other judgments are appropriate, they relate to matters that are inherently uncertain. Accordingly, changes in the estimates, assumptions and other judgments applied to these accounting policies could have a significant impact on our financial condition and results of operations as reflected in our consolidated financial statements.

Our financial condition, results of operations and cash flows are impacted by the methods, assumptions and estimates used in the application of critical accounting policies. Management believes that the areas described below require significant judgment in the application of accounting policy or in making estimates and assumptions in matters that are inherently uncertain and that may change in subsequent periods. Our management has reviewed these critical accounting policies, and the estimates and assumptions regarding them, with our audit committee. In addition, our management has also reviewed the following disclosures regarding the application of these critical accounting policies with the audit committee.

Regulatory Accounting

Our regulated utility subsidiaries are subject to regulation by state PUCs and the local governments of the states in which they operate. As such, we account for these regulated operations in accordance with authoritative guidance that requires us to reflect the effects of rate regulation in our financial statements. Use of the authoritative guidance is applicable to utility operations that meet the following criteria (1) third-party regulation of rates; (2) cost-based rates; and (3) a reasonable assumption that all costs will be recoverable from customers

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through rates. As of December 31, 2011, we had concluded that the operations of our regulated subsidiaries meet the criteria. If it is concluded in a future period that a separable portion of the business no longer meets the criteria, we are required to eliminate the financial statement effects of regulation for that part of the business, which would include the elimination of any or all regulatory assets and liabilities that had been recorded in the consolidated financial statements. Failure to meet the criteria of the authoritative guidance could materially impact our consolidated financial statements as a one-time extraordinary item and continued impacts on our operating activities.

Regulatory assets represent costs that have been deferred to future periods when it is probable that the regulator will allow for recovery through rates charged to customers. Regulatory liabilities represent revenues received from customers to fund expected costs that have not yet been incurred. As of December 31, 2011, we have recorded \$1,079.7 million of net regulatory assets within our Consolidated Financial Statements. Also, at December 31, 2011, we had recorded \$325.8 million of regulatory liabilities within our consolidated financial statements. See Note 7 of the Notes to Consolidated Financial Statements for further information regarding the significant regulatory assets and liabilities.

For each regulatory jurisdiction where we conduct business, we continually assess whether the regulatory assets and liabilities continue to meet the criteria for probable future recovery or settlement. This assessment includes consideration of factors such as changes in applicable regulatory environments, recent rate orders to other regulated entities in the same jurisdiction, the status of any pending or potential deregulation legislation and the ability to recover costs through regulated rates. If subsequent events indicate that the regulatory assets or liabilities no longer meet the criteria for probable future recovery or settlement, our statement of operations and financial position could be materially affected.

Goodwill

The Company's annual impairment reviews are performed as of November 30 of each year, in conjunction with the timing of the completion of the Company's annual strategic business plan. At December 31, 2011, the Company's goodwill was \$1,195.1 million. The Company also undertakes interim reviews when the Company determines that a triggering event that would more likely than not reduce the fair value of a reporting unit below its carrying value has occurred.

The Company uses a two-step impairment test to identify potential goodwill impairment and measures the amount of a goodwill impairment loss to be recognized (if any). The step 1 calculation used to identify potential impairment compares the calculated fair value for each of the Company's reporting units to their respective net carrying values (book values), including goodwill, on the measurement date. If the fair value of any reporting unit is less than such reporting unit's carrying value, then step 2 is performed to measure the amount of the impairment loss (if any) for such reporting unit.

The step 2 calculation of the impairment test compares, by reporting unit, the implied fair value of the goodwill to the carrying value of goodwill. The implied fair value of goodwill is equal to the excess of the fair value of each reporting unit above the fair value of such reporting unit's identified assets and liabilities. If the carrying value of goodwill exceeds the implied fair value of goodwill for any reporting unit, an impairment loss is recognized in an amount equal to the excess (not to exceed the carrying value of goodwill) for that reporting unit.

The determination of the fair value of each reporting unit and the fair value of each reporting unit's assets and liabilities is performed as of the measurement date using observable market data before and after the measurement date (if that subsequent information is relevant to the fair value on the measurement date).

For the November 30, 2011 impairment test, the estimated fair value of the each reporting unit for step 1 was based on a combination of the following valuation techniques:

- observable trading prices of comparable equity securities of publicly-traded water utilities considered by us to be the Company's peers; and

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- discounted cash flow models developed from the Company's internal forecasts.

The first valuation technique applies average peer multiples to each reporting unit's historic and forecasted cash flows. The peer multiples are calculated using the average trading prices of comparable equity securities, their published cash flows and forecasts of market price and cash flows for those peers.

The second valuation technique forecasts each reporting unit's five-year cash flows using an estimated long-term growth rate and discounts these cash flows at their respective estimated weighted average cost of capital.

The Company has completed its November 30, 2011 annual impairment review and based on this review the Company's goodwill balance was not impaired. The Company's fair value calculated in its 2011 impairment test period was greater than the aggregate carrying value of its reporting units.

However, there can be no assurances that the Company will not be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to the Company's performance. These market events could include a decline over a period of time of the Company's stock price, a decline over a period of time in valuation multiples of comparable water utilities, the lack of an increase in the Company's market price consistent with its peer companies, or decreases in control premiums. A decline in the forecasted results in our business plan, such as changes in rate case results or capital investment budgets or changes in our interest rates, could also result in an impairment charge.

We also made certain assumptions, which we believe to be appropriate, that support the fair value of our reporting units. We considered, in addition to the listed trading price of the Company's shares, the applicability of a control premium to our shares and certain other factors we deemed appropriate. As a result, we concluded that the Company's fair value exceeds what we might otherwise have concluded had we relied on market price alone.

The difference between our calculated market capitalization (which approximates carrying value) and the aggregate fair value of our reporting units resulted from an estimated control premium. The estimated control premium represents the incremental premium a buyer is willing to pay to acquire a controlling, majority interest in the Company. In estimating the control premium, management principally considered the current market conditions and historical premiums paid in utility acquisitions observed in the marketplace.

For the year ended December 31, 2011, no impairment charge was recorded for our continuing operations. In 2011, we recorded a charge to goodwill of \$25.5 million relating to parent company goodwill associated with businesses classified as discontinued operations. For the year ended December 31, 2010, no impairment charge was recorded. For the year ended December 31, 2009 we recorded impairment charges for goodwill in the amounts of \$428.0 million and \$22.0 million, for our continuing and discontinued operations, respectively.

Impairment of Long-Lived Assets

Long-lived assets include land, buildings, equipment and long-term investments. Long-lived assets, other than investments and land are depreciated over their estimated useful lives, and are reviewed for impairment whenever changes in circumstances indicate the carrying value of the asset may not be recoverable. Such circumstances would include items such as a significant decrease in the market value of a long-lived asset, a significant adverse change in the manner in which the asset is being used or planned to be used or in its physical condition, or a history of operating or cash flow losses associated with the use of the asset. In addition, changes in the expected useful life of these long-lived assets may also be an impairment indicator. When such events or changes occur, we estimate the fair value of the asset from future cash flows expected to result from the use and, if applicable, the eventual disposition of the assets, and compare that to the carrying value of the asset. If the carrying value is greater than the fair value, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value. The key variables that must be estimated include assumptions

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regarding sales volume, rates, operating costs, labor and other benefit costs, capital additions, assumed discount rates and other economic factors. These variables require significant management judgment and include inherent uncertainties since they are forecasting future events. A variation in the assumptions used could lead to a different conclusion regarding the realizability of an asset and, thus, could have a significant effect on the consolidated financial statements.

The long-lived assets of the regulated utility subsidiaries are grouped on a separate entity basis for impairment testing as they are integrated state-wide operations that do not have the option to curtail service and generally have uniform tariffs. A regulatory asset is charged to earnings if and when future recovery in rates of that asset is no longer probable.

The fair values of long-term investments are dependent on the financial performance and solvency of the entities in which we invest, as well as volatility inherent in the external markets. In assessing potential impairment for these investments, we consider these factors. If such assets are considered impaired, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value.

Revenue Recognition

Revenues of the regulated utility subsidiaries are recognized as water and wastewater services are delivered to customers and include amounts billed to customers on a cycle basis and unbilled amounts based on estimated usage from the date of the latest meter reading to the end of the accounting period. Unbilled utility revenues as of December 31, 2011 and 2010 were \$134.9 million and \$132.9 million, respectively. Increases in volumes delivered to the utilities' customers and favorable rate mix due to changes in usage patterns in customer classes in the period could be significant to the calculation of unbilled revenue. Changes in the timing of meter reading schedules and the number and type of customers scheduled for each meter reading date would also have an effect on the estimated unbilled revenue; however, since the majority of our customers are billed on a monthly basis, total operating revenues would remain materially unchanged.

Revenue from Market-Based Operations is recognized as services are rendered. Revenues from certain construction projects are recognized over the contract term based on the estimated percentage of completion during the period compared to the total estimated services to be provided over the entire contract. Losses on contracts are recognized during the period in which the loss first becomes probable and estimable. Revenues recognized during the period in excess of billings on construction contracts are recorded as unbilled revenue. Billings in excess of revenues recognized on construction contracts are recorded as other current liabilities on the balance sheet until the recognition criteria are met. Changes in contract performance and related estimated contract profitability may result in revisions to costs and revenues and are recognized in the period in which revisions are determined.

Accounting for Income Taxes

The parent company and its subsidiaries participate in a consolidated federal income tax return for United States tax purposes. Members of the consolidated group are charged with the amount of federal income tax expense determined as if they filed separate returns.

Certain income and expense items are accounted for in different time periods for financial reporting than for income tax reporting purposes. The Company provides deferred income taxes on the difference between the tax basis of assets and liabilities and the amounts at which they are carried in the financial statements. These deferred income taxes are based on the enacted tax rates expected to be in effect when these temporary differences are projected to reverse. In addition, the regulated utility subsidiaries recognize regulatory assets and liabilities for the effect on revenues expected to be realized as the tax effects of temporary differences, previously flowed through to customers, reverse.

[Table of Contents](#)*Accounting for Pension and Postretirement Benefits*

We maintain noncontributory defined benefit pension plans covering eligible employees of our regulated utility and shared service operations. The pension plans have been closed for most employees hired on or after January 1, 2006. Union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006 will be provided with a 5.25% of base pay defined contribution plan. We also maintain postretirement benefit plans for eligible retirees. The retiree welfare plans are closed for union employees hired on or after January 1, 2006. The plans had previously closed for non-union employees hired on or after January 1, 2002. See Note 15 of the Notes to Consolidated Financial Statements for further information regarding the accounting for the defined benefit pension plans and postretirement benefit plans.

The Company's pension and postretirement benefit costs are developed from actuarial valuations. Inherent in these valuations are key assumptions provided by the Company to its actuaries, including the discount rate and expected long-term rate of return on plan assets. Material changes in the Company's pension and postretirement benefit costs may occur in the future due to changes in these assumptions as well as fluctuations in plan assets. The assumptions are selected to represent the average expected experience over time and may differ in any one year from actual experience due to changes in capital markets and the overall economy. These differences will impact the amount of pension and other postretirement benefit expense that the Company recognizes. The primary assumptions are:

- **Discount Rate**—The discount rate is used in calculating the present value of benefits, which are based on projections of benefit payments to be made in the future. The objective in selecting the discount rate is to measure the single amount that, if invested at the measurement date in a portfolio of high-quality debt instruments, would provide the necessary future cash flows to pay the accumulated benefits when due;
- **Expected Return on Plan Assets ("EROA")**—Management projects the future return on plan assets considering prior performance, but primarily based upon the plans' mix of assets and expectations for the long-term returns on those asset classes. These projected returns reduce the net benefit costs we record currently;
- **Rate of Compensation Increase**—Management projects employees' pay increases, which are used to project employees' pension benefits at retirement; and
- **Health Care Cost Trend Rate**—Management projects the expected increases in the cost of health care.

The discount rate assumption, which is determined for the pension and postretirement benefit plans independently, is subject to change each year, consistent with changes in applicable high-quality, long-term corporate bond indices. At year end 2011, we began using an approach that approximate the process of settlement obligations tailored to the plans' expected cash flows to the coupons and expected maturity values of individually selected bonds. The yield curve was developed for a portfolio containing the majority of United States-issued Aa-graded non-callable (or callable with make-whole provisions) corporate bonds. For each plan, the discount rate was developed as the level equivalent rate that would yield the same present value as using spot rates aligned with the projected benefit payments. The discount rate for determining pension benefit obligations was 5.02%, 5.32% and 5.93% at December 31, 2011, 2010 and 2009, respectively. The discount rate for determining other post-retirement benefit obligations was 5.05%, 5.27% and 5.82% at December 31, 2011, 2010 and 2009, respectively.

In selecting an expected return on plan assets, we considered tax implications, past performance and economic forecasts for the types of investments held by the plans. The long-term EROA assumption used in calculating pension cost was 7.90% for 2011, 2010, and 2009. The weighted average EROA assumption used in calculating other postretirement benefit costs was 7.60% for 2011, 2010 and 2009.

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The asset allocations for the Company's U.S. pension plan at December 31, 2011 and 2010, by asset category, are as follows:

Asset category	Target Allocation 2011	Percentage of Plan Assets At December 31,	
		2011	2010
Equity securities	70%	70%	70%
Fixed income	30%	30%	30%
Total	100%	100%	100%

The investment policy guidelines of the pension plan require that the fixed income portfolio has an overall weighted average credit rating of AA or better by Standard & Poor's and the minimum credit quality for fixed income securities must be BBB- or better. Up to 20% of the portfolio may be invested in collateralized mortgage obligations backed by the United States Government.

The Company's other postretirement benefit plans are partially funded. The asset allocations for the Company's other postretirement benefit plans at December 31, 2011 and 2010, by asset category, are as follows:

Asset category	Target Allocation 2011	Percentage of Plan Assets At December 31,	
		2011	2010
Equity securities	70%	70%	70%
Fixed income	30%	30%	30%
Total	100%	100%	100%

The Company's investment policy, and related target asset allocation, is evaluated periodically through asset liability studies. The studies consider projected cash flows of maturity liabilities, projected asset class return risk, and correlation and risk tolerance.

The pension and postretirement welfare plan trusts investments include debt and equity securities held directly and through commingled funds. The trustee for the Company's defined benefit pension and post retirement welfare plans uses independent valuation firms to calculate the fair value of plan assets. Additionally, the company independently verifies the assets values. Approximately 59.0% of the assets are valued using the quoted market price for the assets in an active market at the measurement date, while 41.0% of the assets are valued using other inputs.

In selecting a rate of compensation increase, we consider past experience in light of movements in inflation rates. Our rate of compensation increase was 3.25% for 2011, 3.50% for 2010 and 4.00% for 2009.

In selecting health care cost trend rates, we consider past performance and forecasts of increases in health care costs. Our health care cost trend rate used to calculate the periodic cost was 8.00% in 2011 gradually declining to 5.00% in 2017 and thereafter.

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Assumed health care cost trend rates have a significant effect on the amounts reported for the other postretirement benefit plans. The health care cost trend rate is based on historical rates and expected market conditions. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

Change in Actuarial Assumption	Impact on Other Postretirement Benefit Obligation at December 31, 2011	Impact on 2011 Total Service and Interest Cost Components
	(in thousands)	
Increase assumed health care cost trend by 1%	\$ 83,456	\$ 7,145
Decrease assumed health care cost trend by 1%	\$ 69,318	\$ 5,838

We will use a discount rate and EROA of 5.02% and 7.75%, respectively, for estimating our 2012 pension costs. Additionally, we will use a discount rate and EROA of 5.05% and 7.41%, respectively, for estimating our 2012 other postretirement benefit costs. A decrease in the discount rate or the EROA would increase our pension expense. Our 2011 and 2010 pension and postretirement costs, including such expenses charged to our discontinued operations, were \$87.3 million and \$80.0 million, respectively. The Company currently expects to make pension and postretirement benefit contributions to the plan trusts of \$156.7 million, \$132.1 million, \$155.1 million, \$148.8 million and \$132.0 million in 2012, 2013, 2014, 2015 and 2016 respectively. Actual amounts contributed could change significantly from these estimates.

The assumptions are reviewed annually and at any interim re-measurement of the plan obligations. The impact of assumption changes is reflected in the recorded pension and postretirement benefit amounts as they occur, or over a period of time if allowed under applicable accounting standards. As these assumptions change from period to period, recorded pension and postretirement benefit amounts and funding requirements could also change.

New Accounting Standards

Fair Value Measurements

In May 2011, the FASB issued updated accounting guidance related to fair value measurements and disclosures that result in common fair value measurements and disclosures between U.S. GAAP and International Financial Reporting Standards. This new guidance amends current fair value measurement and disclosure guidance to increase transparency around valuation inputs and investment categorization. This guidance is effective for interim and annual periods beginning after December 15, 2011. The new guidance is to be adopted prospectively and early adoption is not permitted. The Company does not expect the adoption of this guidance to have a significant impact on the Company's results of operations, financial position or cash flows.

Comprehensive Income

In June 2011, the FASB issued new guidance on the presentation of comprehensive income. The new guidance allows an entity to present components of net income and other comprehensive income in one continuous statement or in two separate, but consecutive statements. The new guidance eliminates the current option to report other comprehensive income and its components in the statement of changes in equity. While the new guidance changes the presentation of comprehensive income, there are no changes to the components that are recognized in net income or other comprehensive income under current accounting guidance. On October 21, 2011, the FASB tentatively decided to propose delaying the effective date of the presentation requirements for reclassification adjustments in the new guidance. This new guidance on the presentation of comprehensive income is effective for fiscal years and interim periods beginning after December 15, 2011. As the Company already presents the components of net income and other comprehensive income in one continuous statement, the adoption of the new guidance will not have an impact on its results of operations, financial position or cash flows.

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Testing Goodwill for Impairment

In September 2011, the FASB updated the accounting guidance related to testing goodwill for impairment. This update permits an entity to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test that is currently in place. Under the new guidance, an entity will not be required to calculate the fair value of a reporting unit unless the entity determines, based on the qualitative assessment, that it is more likely than not that its fair value is less than its carrying amount. This update is effective for annual and interim goodwill impairment tests performed in fiscal years beginning after December 15, 2011; however, early adoption is permitted. The Company is evaluating the specific provisions of the updated guidance, but does not expect the adoption of this guidance to have a significant impact on the Company's results of operations, financial position or cash flows.

Revenue Arrangements with Multiple Deliverables

In October 2009, the Financial Accounting Standards Board ("FASB") issued authoritative guidance that amends existing guidance for identifying separate deliverables in a revenue-generating transaction where multiple deliverables exist, and provides guidance for allocating and recognizing revenue based on those separate deliverables. The guidance is expected to result in more multiple-deliverable arrangements being separable than under current guidance. This guidance was effective for the Company beginning on January 1, 2011 and is required to be applied prospectively to new or significantly modified revenue arrangements. The adoption of this guidance did not have a significant impact on the Company's results of operations, financial position or cash flows.

Business Combinations

In December 2010, the FASB clarified the requirements for reporting of pro forma revenue and earnings disclosures for business combinations. The accounting update specified that if a public entity presents comparative financial statements, the entity should disclose revenue and earnings of the combined entity as though the business combination(s) that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period only. The amendments also expanded the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro forma revenue and earnings. The amendments are effective prospectively for business combinations finalized after January 1, 2011. As this guidance clarifies and provides for additional disclosure requirements only, the adoption of this guidance has not had a material impact on the Company's results of operations, financial position or cash flows.

Intangibles—Goodwill

In December 2010, the FASB issued authoritative guidance that modifies step 1 of the goodwill impairment test for reporting units with zero or negative carrying amounts. The update requires that for those reporting units, an entity is required to perform step 2 of the goodwill impairment test if it is more likely than not that a goodwill impairment exists. In determining whether it is more likely than not that a goodwill impairment exists, an entity should consider whether there are any adverse qualitative factors indicating that an impairment may exist. The qualitative factors are consistent with existing authoritative guidance, which requires that goodwill of a reporting unit be tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. This guidance was effective for the Company beginning on January 1, 2011. The adoption of this update did not have a significant impact on the Company's results of operations, financial position or cash flows.

See Note 2—Significant Accounting Policies in the notes to the audited consolidated financial statements for a discussion of new accounting standards recently adopted or pending adoption.

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ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk associated with changes in commodity prices, equity prices and interest rates. We are exposed to risks from changes in interest rates as a result of our issuance of variable and fixed rate debt and commercial paper. We manage our interest rate exposure by limiting our variable rate exposure and by monitoring the effects of market changes in interest rates. We also have the ability to enter into financial derivative instruments, which could include instruments such as, but not limited to, interest rate swaps, swaptions and U.S. Treasury lock agreements to manage and mitigate interest rate risk exposure. As of December 31, 2011, a hypothetical increase of interest rates by 1% associated with our short-term borrowings would result in a \$4.8 million decrease in our pre-tax earnings.

In July 2010, we entered into an interest rate swap agreement with a notional amount of \$100.0 million. This agreement effectively converted the interest on \$100.0 million of outstanding 6.085% fixed rate debt maturing 2017 to a variable rate of six-month LIBOR plus 3.422%. We entered into this interest rate swap to mitigate interest cost at the parent company relating to debt that was incurred by our prior owners and was not used in any manner to finance the cash needs of our subsidiaries. For the year ended December 31, 2011 and 2010, the interest rate swap reduced interest expense by \$2.4 million and \$0.4 million, respectively. As the swap interest rates are fixed through April 2012, a hypothetical 1% increase in the interest rates associated with the interest rate swap agreement would result in a \$0.3 million decrease on our pre-tax earnings for the year ended December 31, 2012. This calculation holds all other variables constant and assumes only the discussed changes in interest rates.

Our risks associated with price increases for chemicals, electricity and other commodities are reduced through contractual arrangements and the ability to recover price increases through rates. Non-performance by these commodity suppliers could have a material adverse impact on our results of operations, financial position and cash flows.

The market price of our common stock may experience fluctuations, many of which are unrelated to our operating performance. In particular, our stock price may be affected by general market movements as well as developments specifically related to the water and wastewater industry. These could include, among other things, interest rate movements, quarterly variations or changes in financial estimates by securities analysts and governmental or regulatory actions. This volatility may make it difficult for us to access the capital markets in the future through additional offerings of our common stock, regardless of our financial performance, and such difficulty may preclude us from being able to take advantage of certain business opportunities or meet business obligations.

We are exposed to credit risk through our water, wastewater and other water-related activities for both our Regulated Businesses and Market-Based Operations. Our Regulated Businesses serve residential, commercial, industrial and municipal customers while our Market-Based Operations engage in business activities with developers, government entities and other customers. Our primary credit risk is exposure to customer default on contractual obligations and the associated loss that may be incurred due to the non-payment of customer accounts receivable balances. Our credit risk is managed through established credit and collection policies which are in compliance with applicable regulatory requirements and involve monitoring of customer exposure and the use of credit risk mitigation measures such as letters of credit or prepayment arrangements. Our credit portfolio is diversified with no significant customer or industry concentrations. In addition, our Regulated Businesses are generally able to recover all prudently incurred costs including uncollectible customer accounts receivable expenses and collection costs through rates.

The Company's retirement trust assets are exposed to the market prices of debt and equity securities. Changes to the retirement trust asset value can impact the Company's pension and other benefits expense, funded status and future minimum funding requirements. Our risk is reduced through our ability to recover pension and other benefit costs through rates. In addition, pension and other benefits liabilities decrease as fixed income asset values decrease (fixed income yields rise) since the rate at which we discount pension and other retirement trust asset future obligations is highly correlated to fixed income yields.

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We are also exposed to a potential national economic recession or further deterioration in local economic conditions in the markets in which we operate. The credit quality of our customer accounts receivable is dependent on the economy and the ability of our customers to manage through unfavorable economic cycles and other market changes. In addition, as a result of the downturn in the economy and heightened sensitivity of the impact of additional rate increases on certain customers, there can be no assurances that regulators will grant sufficient rate authorizations. Therefore our ability to fully recover operating expense, recover our investment and provide an appropriate return on invested capital made in our Regulated Businesses may be adversely impacted.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of
American Water Works Company, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and comprehensive income (loss), of cash flows, and of changes in common stockholders' equity, present fairly, in all material respects, the financial position of American Water Works Company, Inc. and Subsidiary Companies at December 31, 2011 and December 31, 2010, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2011 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2011, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP
Philadelphia, Pennsylvania
February 28, 2012

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American Water Works Company, Inc. and Subsidiary Companies

Consolidated Balance Sheets

(In thousands, except per share data)

	December 31,	
	2011	2010
ASSETS		
Property, plant and equipment		
Utility plant—at original cost, net of accumulated depreciation of \$3,360,005 in 2011 and \$3,134,094 in 2010	\$ 10,872,042	\$ 10,241,342
Nonutility property, net of accumulated depreciation of \$164,417 in 2011 and \$137,483 in 2010	149,056	140,298
Total property, plant and equipment	<u>11,021,098</u>	<u>10,381,640</u>
Current assets		
Cash and cash equivalents	14,207	13,112
Restricted funds	32,438	94,066
Utility customer accounts receivable	150,720	145,747
Allowance for uncollectible accounts	(15,319)	(17,474)
Unbilled utility revenues	134,938	132,876
Other receivables, net	60,413	71,589
Income taxes receivable	7,672	6,473
Materials and supplies	28,598	27,743
Assets of discontinued operations	929,858	937,705
Other	54,134	45,938
Total current assets	<u>1,397,659</u>	<u>1,457,775</u>
Regulatory and other long-term assets		
Regulatory assets	1,079,661	976,174
Restricted funds	25,503	26,718
Goodwill	1,195,069	1,195,585
Other	57,401	48,354
Total regulatory and other long-term assets	<u>2,357,634</u>	<u>2,246,831</u>
TOTAL ASSETS	<u>\$ 14,776,391</u>	<u>\$ 14,086,246</u>

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies
Consolidated Balance Sheets—(Continued)
(In thousands, except per share data)

	December 31,	
	2011	2010
CAPITALIZATION AND LIABILITIES		
Capitalization		
Common stock (\$.01 par value, 500,000 shares authorized, 175,664 shares outstanding in 2011 and 174,996 in 2010)	\$ 1,757	\$ 1,750
Paid-in capital	6,180,558	6,156,675
Accumulated deficit	(1,848,801)	(1,959,235)
Accumulated other comprehensive loss	(97,677)	(71,446)
Treasury stock	0	(19)
Common stockholders' equity	4,235,837	4,127,725
Preferred stock without mandatory redemption requirements	4,547	4,547
Total stockholders' equity	4,240,384	4,132,272
Long-term debt		
Long-term debt	5,339,947	5,394,135
Redeemable preferred stock at redemption value	21,137	22,135
Total capitalization	9,601,468	9,548,542
Current liabilities		
Short-term debt	515,050	228,905
Current portion of long-term debt	28,858	36,092
Accounts payable	243,709	188,343
Taxes accrued	36,606	36,939
Interest accrued	59,067	60,465
Liabilities of discontinued operations	382,218	373,960
Other	223,597	182,060
Total current liabilities	1,489,105	1,106,764
Regulatory and other long-term liabilities		
Advances for construction	386,970	397,164
Deferred income taxes	1,288,797	1,110,250
Deferred investment tax credits	29,427	30,969
Regulatory liabilities	325,829	296,121
Accrued pension expense	411,998	413,513
Accrued postretirement benefit expense	237,086	215,217
Other	38,963	42,150
Total regulatory and other long-term liabilities	2,719,070	2,505,384
Contributions in aid of construction	966,748	925,556
Commitments and contingencies (See Note 16)	—	—
TOTAL CAPITALIZATION AND LIABILITIES	\$ 14,776,391	\$ 14,086,246

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies
Consolidated Statements of Operations and Comprehensive Income (Loss)
(In thousands, except per share data)

	<u>Years Ended December 31,</u>		
	<u>2011</u>	<u>2010</u>	<u>2009</u>
Operating revenues	\$ 2,666,236	\$ 2,555,035	\$ 2,290,446
Operating expenses			
Operation and maintenance	1,301,794	1,290,941	1,182,376
Depreciation and amortization	351,821	330,264	309,874
General taxes	210,478	205,597	186,620
(Gain) loss on asset dispositions and purchases	(993)	111	(295)
Impairment charge	0	0	428,036
Total operating expenses, net	<u>1,863,100</u>	<u>1,826,913</u>	<u>2,106,611</u>
Operating income	<u>803,136</u>	<u>728,122</u>	<u>183,835</u>
Other income (expenses)			
Interest, net	(312,415)	(313,765)	(296,623)
Allowance for other funds used during construction	13,131	9,644	8,342
Allowance for borrowed funds used during construction	5,923	5,225	5,529
Amortization of debt expense	(5,055)	(4,516)	(6,609)
Other, net	(1,040)	4,714	(680)
Total other income (expenses)	<u>(299,456)</u>	<u>(298,698)</u>	<u>(290,041)</u>
Income (loss) from continuing operations before income taxes	503,680	429,424	(106,206)
Provision for income taxes	198,751	174,352	113,792
Income (loss) from continuing operations	304,929	255,072	(219,998)
Income (loss) from discontinued operations, net of tax	4,684	12,755	(13,085)
Net income (loss)	<u>\$ 309,613</u>	<u>\$ 267,827</u>	<u>\$ (233,083)</u>
Other comprehensive income, net of tax:			
Change in employee benefit plan funded status, net of tax of \$(19,498), \$(7,567) and \$6,381, respectively	(30,497)	(11,836)	9,981
Pension plan amortized to periodic benefit cost:			
Prior service cost, net of tax of \$112, \$50 and \$29, respectively	175	79	46
Actuarial loss, net of tax of \$2,879, \$2,793 and \$3,832, respectively	4,504	4,368	5,994
Foreign currency translation adjustment	(413)	620	1,553
Other comprehensive income	<u>(26,231)</u>	<u>(6,769)</u>	<u>17,574</u>
Comprehensive income (loss)	<u>\$ 283,382</u>	<u>\$ 261,058</u>	<u>\$ (215,509)</u>
Basic earnings per common share: (a)			
Income (loss) from continuing operations	\$ 1.74	\$ 1.46	\$ (1.31)
Income (loss) from discontinued operations, net of tax	\$ 0.03	\$ 0.07	\$ (0.08)
Net income (loss)	<u>\$ 1.76</u>	<u>\$ 1.53</u>	<u>\$ (1.39)</u>
Diluted earnings per common share: (a)			
Income (loss) from continuing operations	\$ 1.73	\$ 1.46	\$ (1.31)
Income (loss) from discontinued operations, net of tax	\$ 0.03	\$ 0.07	\$ (0.08)
Net income (loss)	<u>\$ 1.75</u>	<u>\$ 1.53</u>	<u>\$ (1.39)</u>
Average common shares outstanding during the period:			
Basic	<u>175,484</u>	<u>174,833</u>	<u>168,164</u>
Diluted	<u>176,531</u>	<u>175,124</u>	<u>168,164</u>
Dividends per common share	<u>\$ 1.13</u>	<u>\$ 0.86</u>	<u>\$ 0.82</u>

(a) Amounts may not sum due to rounding.

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies

Consolidated Statements of Cash Flows

(In thousands, except per share data)

	Years Ended December 31,		
	2011	2010	2009
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income (loss)	\$ 309,613	\$ 267,827	\$ (233,083)
Adjustments			
Depreciation and amortization	351,821	330,264	309,874
Impairment charge	0	0	428,036
Provision for deferred income taxes	195,494	152,760	134,232
Amortization of deferred investment tax credits	(1,542)	(1,561)	(1,413)
Provision for losses on utility accounts receivable	16,178	17,973	20,999
Allowance for other funds used during construction	(13,131)	(9,644)	(8,342)
(Gain) loss on asset dispositions and purchases	(993)	111	(295)
Pension and non-pension post retirement benefits	71,439	89,342	105,133
Stock-based compensation expense	10,008	10,334	7,602
Other, net	44,521	9,033	21,000
Changes in assets and liabilities			
Receivables and unbilled utility revenues	(17,433)	(33,044)	(18,751)
Taxes receivable, including income taxes	(1,199)	17,920	(17,920)
Other current assets	(14,917)	5,149	(6,737)
Pension and non-pension post retirement benefit contributions	(186,730)	(137,257)	(127,446)
Accounts payable	37,824	6,487	52
Taxes accrued, including income taxes	4,274	39,577	(13,321)
Interest accrued	(1,417)	746	6,499
Other current liabilities	4,547	8,916	(9,963)
Net cash provided by operating activities	<u>808,357</u>	<u>774,933</u>	<u>596,156</u>
CASH FLOWS FROM INVESTING ACTIVITIES			
Capital expenditures	(924,858)	(765,636)	(785,265)
Acquisitions	(7,220)	(1,642)	(18,144)
Proceeds from sale of assets and securities	9,972	239	1,237
Removal costs from property, plant and equipment retirements, net	(53,134)	(43,695)	(29,900)
Net funds released	62,843	63,991	129,711
Other	0	0	(1,250)
Net cash used in investing activities	<u>(912,397)</u>	<u>(746,743)</u>	<u>(703,611)</u>
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from long-term debt	12,510	268,559	542,926
Repayment of long-term debt	(70,045)	(272,700)	(178,131)
Proceeds from issuance of common stock (net of 2009 expenses of \$7,824)	0	0	242,301
Net borrowings (repayments) under short-term debt agreements	303,024	93,029	(352,005)
Proceeds from issuances of employee stock plans and DRIP	13,866	6,711	2,089
Advances and contributions for construction, net of refunds of \$21,061 in 2011, \$35,830 in 2010 and \$27,481 in 2009	22,298	7,042	21,211
Change in cash overdraft position	(16,862)	17,173	(7,508)
Debt issuance costs	(552)	(6,619)	(13,165)
Redemption of preferred stocks	(1,888)	(228)	(218)
Dividends paid	(157,855)	(150,301)	(137,331)
Other	639	0	0
Net cash provided by (used in) financing activities	<u>105,135</u>	<u>(37,334)</u>	<u>120,169</u>
Net increase (decrease) in cash and cash equivalents	1,095	(9,144)	12,714
Cash and cash equivalents at beginning of period	13,112	22,256	9,542
Cash and cash equivalents at end of period	<u>\$ 14,207</u>	<u>\$ 13,112</u>	<u>\$ 22,256</u>
Cash paid during the year for:			
Interest, net of capitalized amount	\$ 331,944	\$ 329,417	\$ 303,958
Income taxes, net of refunds of \$812 in 2011, \$37,790 in 2010 and \$2,754 in 2009	\$ 14,269	\$ (30,108)	\$ 11,205
Non-cash investing activity			
Capital expenditures acquired on account but unpaid as of year end	\$ 104,816	\$ 112,313	\$ 59,219
Non-cash financing activity			
Advances and contributions	\$ 23,504	\$ 27,566	\$ 77,094
Long-term debt	\$ 0	\$ 122,775	\$ 179,931

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies
Consolidated Statements of Changes in Stockholders' Equity
(In thousands, except per share data)

	Common Stock		Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Treasury Stock		Preferred Stock of Subsidiary Companies Without Mandatory Redemption Requirements	Total Stockholders' Equity
	Shares	Par Value				Shares	At Cost		
Balance at December 31, 2008	160,000	\$1,600	\$5,888,253	\$(1,705,594)	\$ (82,251)	0	\$ (7)	\$ 4,557	\$ 4,106,558
Net loss	—	—	—	(233,083)	—	—	—	—	(233,083)
Common stock offering, net of expenses of \$7,824	14,500	145	242,156	—	—	—	—	—	242,301
Employee stock purchase plan	128	1	2,453	—	—	1	23	—	2,477
Stock-based compensation activity	2	—	7,215	(279)	—	(1)	(16)	—	6,920
Other comprehensive income, net of tax of \$10,242	—	—	—	—	17,574	—	—	—	17,574
Dividends	—	—	—	(137,331)	—	—	—	—	(137,331)
Balance at December 31, 2009	174,630	\$1,746	\$6,140,077	\$(2,076,287)	\$ (64,677)	0	\$ 0	\$ 4,557	\$ 4,005,416
Net income	—	—	—	267,827	—	—	—	—	267,827
Direct stock reinvestment and purchase plan, net of expense of \$96	63	1	1,328	—	—	—	—	—	1,329
Employee stock purchase plan	112	1	2,502	—	—	7	127	—	2,630
Stock-based compensation activity	191	2	12,768	(474)	—	(8)	(146)	—	12,150
Subsidiary preferred stock redemption	—	—	—	—	—	—	—	(10)	(10)
Other comprehensive loss, net of tax of (\$4,724)	—	—	—	—	(6,769)	—	—	—	(6,769)
Dividends	—	—	—	(150,301)	—	—	—	—	(150,301)
Balance at December 31, 2010	174,996	\$1,750	\$6,156,675	\$(1,959,235)	\$ (71,446)	(1)	\$ (19)	\$ 4,547	\$ 4,132,272
Net income	—	—	—	309,613	—	—	—	—	309,613
Direct stock reinvestment and purchase plan, net of expense of \$19	64	1	1,807	—	—	—	—	—	1,808
Employee stock purchase plan	121	1	3,533	—	—	—	—	—	3,534
Stock-based compensation activity	483	5	18,543	(921)	—	1	19	—	17,646
Other comprehensive income (loss), net of tax of \$(16,507)	—	—	—	—	(26,231)	—	—	—	(26,231)
Dividends	—	—	—	(198,258)	—	—	—	—	(198,258)
Balance at December 31, 2011	<u>175,664</u>	<u>\$1,757</u>	<u>\$6,180,558</u>	<u>\$(1,848,801)</u>	<u>\$ (97,677)</u>	<u>0</u>	<u>\$ 0</u>	<u>\$ 4,547</u>	<u>\$ 4,240,384</u>

The accompanying notes are an integral part of these consolidated financial statements.

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American Water Works Company, Inc. and Subsidiary Companies

Notes to Consolidated Financial Statements

(In thousands, except per share data)

Note 1: Organization and Operation

American Water Works Company, Inc. ("AWW") and its subsidiaries (collectively referred to herein as the "Company") is the holding company for regulated and market-based subsidiaries throughout the United States of America and two Canadian provinces. The regulated subsidiaries included in continuing operations provide water and wastewater services as public utilities. These regulated subsidiaries are operationally segregated into 16 U.S. states in which the Company operates regulated utilities. The market-based subsidiaries include various lines of business including Homeowner Services, which provides water and sewer line protection plans for homeowners, and the Contract Operations group, which conducts operation and maintenance of water and wastewater facilities for the U.S. Military, municipalities and the food and beverage industry.

Note 2: Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of AWW and its subsidiaries. Intercompany balances and transactions between subsidiaries have been eliminated. The Company uses the equity method to report its investments in two joint venture investments in each of which the Company holds a 50% voting interest and cannot exercise control over the operations and policies of the investments. Under the equity method, the Company records its interests as an investment and its percentage share of earnings as earnings or losses of investee.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates. The Company considers benefit plan assumptions; the carrying values of goodwill and other long-lived assets, including regulatory assets; revenue recognition; and accounting for income taxes to be its critical accounting estimates. The Company's significant estimates that are particularly sensitive to change in the near term are amounts reported for pension and other postemployment benefits, contingency-related obligations and goodwill.

Regulation

The Company's regulated utilities are subject to economic regulation by the public utility commissions and the local governments of the states in which they operate (the "Regulators"). These Regulators have allowed recovery of costs and credits which the Company has recorded as regulatory assets and liabilities. Accounting for future recovery of costs and credits as regulatory assets and liabilities is in accordance with authoritative guidance applicable to those companies whose rates are established by or are subject to approval by an independent third-party regulator. Regulated utilities defer costs and credits on the balance sheet as regulatory assets and liabilities when it is probable that those costs and credits will be recognized in the rate making process in a period different from the period in which they would have been reflected in operations by a market-based company. These deferred regulatory assets and liabilities are then reflected in the statement of operations in the period in which the costs and credits are reflected in the rates charged for service. (See Note 7)

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Property, Plant and Equipment

Property, plant and equipment consist primarily of utility plant. Additions to utility plant and replacements of retirement units of property are capitalized. Costs include material, direct labor and such indirect items as engineering and supervision, payroll taxes and benefits, transportation and an allowance for funds used during construction. The costs incurred to acquire and internally develop computer software for internal use are capitalized as a unit of property. The carrying value of these costs amounted to \$49,241 and \$60,408 at December 31, 2011 and 2010, respectively. The cost of repairs; maintenance, including planned major maintenance activities; and minor replacements of property is charged to maintenance expense as incurred.

When units of property are replaced, retired or abandoned, the recorded value thereof is credited to the asset account and charged to accumulated depreciation. To the extent the Company recovers cost of removal or other retirement costs through rates after the retirement costs are incurred, a regulatory asset is recorded. In some cases, the Company recovers retirement costs through rates during the life of the associated asset and before the costs are incurred. These amounts result in a regulatory liability being reported based on the amounts previously recovered through customer rates, until the costs to retire those assets are incurred.

The cost of property, plant and equipment is depreciated using the straight-line average remaining life method.

Nonutility property consists primarily of buildings and equipment utilized by the Company for internal operations. This property is stated at cost, net of accumulated depreciation calculated using the straight-line method over the estimated useful lives of the assets, ranging from three to 50 years.

Cash and Cash Equivalents

Substantially all cash is invested in interest-bearing accounts. All highly liquid investments with a maturity of three months or less when purchased are considered to be cash equivalents.

The Company had book overdrafts for certain of its disbursement accounts of \$34,002 and \$50,881 at December 31, 2011 and 2010, respectively. A book overdraft represents transactions that have not cleared the bank accounts at the end of the period. The Company transfers cash on an as-needed basis to fund these items as they clear the bank. The balance of the book overdraft is reported as short-term debt and the change in the book overdraft balance is reported as cash flows from financing activities.

Restricted Funds

Restricted funds primarily represent proceeds from financings for the construction and capital improvement of facilities and deposits for future services under operation and maintenance projects. The proceeds of these financings are held in escrow until the designated expenditures are incurred. Restricted funds expected to be released within 12 months subsequent to year end are classified as current.

Utility Customer Accounts Receivable

Regulated utility customer accounts receivable represent amounts billed to water and wastewater customers on a cycle basis. Credit is extended based on the guidelines of the applicable Regulators and collateral is generally not required.

Allowance for Uncollectible Accounts

Allowances for uncollectible accounts are maintained for estimated probable losses resulting from the Company's inability to collect receivables from customers. Accounts that are outstanding longer than the payment terms are considered past due. A number of factors are considered in determining the allowance for uncollectible accounts, including the length of time receivables are past due and previous loss history. The Company writes off accounts when they become uncollectible. (See Note 5)

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Other Receivables, Net

Other receivables, net consists of market-based trade accounts receivable and market-based unbilled revenues, net of a reserve for doubtful accounts, and non-utility customer receivables of the regulated subsidiaries. In determining the reserve for uncollectible market-based accounts, the Company considers the length of time the trade accounts receivable are past due and the customers' current ability to pay their obligations. Unbilled receivables are accrued when service has been provided but has not been billed to customers. (See Note 6)

Materials and Supplies

Materials and supplies are stated at the lower of cost or net realizable value. Cost is determined using the average cost method.

Goodwill

Goodwill is primarily associated with the acquisitions of AWW in 2003 and E'town Corporation in 2001 (the "Acquisitions") and has been assigned to reporting units based on the fair values at the date of the Acquisitions. The Regulated Businesses segment is a single reporting unit. In the Market-Based Operations segment, the business is organized into seven reporting units for its market-based services. Goodwill is reviewed annually, or more frequently if changes in circumstances indicate the carrying value may not be recoverable. Annual impairment reviews are performed in the fourth quarter of the calendar year, in conjunction with the timing of the completion of the Company's annual strategic business plan.

The Company considers the carrying value of goodwill to be one of its critical accounting estimates. The Company believes the assumptions and other considerations used to value goodwill to be appropriate. However, if experience differs from the assumptions and considerations used in its analysis, the resulting change could have a material adverse impact on the consolidated financial statements.

No impairment charge was recorded in the Company's continuing operations for the years ended December 31, 2011 and 2010, respectively. For the year ended December 31, 2009, the Company recorded goodwill impairment charges to continuing operations of \$428,036. (See Note 8)

Long-Lived Assets

Long-lived assets include land, buildings, equipment and long-term investments. Long-lived assets, other than investments and land, are depreciated over their estimated useful lives, and are reviewed for impairment whenever changes in circumstances indicate the carrying value of the asset may not be recoverable. Such circumstances would include items such as a significant decrease in the market value of a long-lived asset, a significant adverse change in the manner the asset is being used or planned to be used or in its physical condition, or a history of operating or cash flow losses associated with the use of the asset. In addition, changes in the expected useful life of these long-lived assets may also be an impairment indicator. When such events or changes occur, the Company estimates the fair value of the asset from future cash flows expected to result from the use and, if applicable, the eventual disposition of the assets and compares that to the carrying value of the asset. If the carrying value is greater than the fair value, an impairment loss is recorded.

The Company considers the carrying value of long-lived assets to be one of its critical accounting estimates. The Company believes the assumptions and other considerations used to evaluate the carrying value of long-lived assets to be appropriate. However, if actual experience differs from the assumptions and considerations used in its estimates, the resulting change could have a material adverse impact on the consolidated financial statements.

The key variables to determine value include assumptions regarding sales volume, rates, operating costs, labor and other benefit costs, capital additions, assumed discount rates and other economic factors. These

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variables require significant management judgment and include inherent uncertainties since they are forecasting future events. If such assets are considered impaired, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value.

The long-lived assets of the regulated utility subsidiaries are grouped on a separate entity basis for impairment testing as they are integrated state-wide operations that do not have the option to curtail service and generally have uniform tariffs. A regulatory asset is charged to earnings if and when future recovery in rates of that asset is no longer probable.

The Company holds other investments including investments in privately held companies and investments in joint ventures accounted for using the equity method. The Company's investments in privately held companies and joint ventures are classified as other long-term assets.

The fair values of long-term investments are dependent on the financial performance and solvency of the entities in which the Company invests, as well as volatility inherent in the external markets. If such assets are considered impaired, an impairment loss is recognized equal to the amount by which the asset's carrying value exceeds its fair value.

Advances and Contributions in Aid of Construction

Regulated utility subsidiaries may receive advances and contributions from customers, home builders and real estate developers to fund construction necessary to extend service to new areas. Advances for construction are refundable for limited periods of time as new customers begin to receive service or other contractual obligations are fulfilled. Included in other current liabilities at December 31, 2011 and 2010 in the accompanying Consolidated Balance Sheets are estimated refunds of \$18,681 and \$22,451, respectively. Those amounts represent expected refunds during the next 12-month period. Advances that are no longer refundable are reclassified to contributions in aid of construction. Contributions in aid of construction are permanent collections of plant assets or cash for a particular construction project. For ratemaking purposes, the amount of such contributions generally serves as a rate base reduction since the contributions represent non-investor supplied funds.

Generally, the Company depreciates utility plant funded by contributions and amortizes its contributions balance as a reduction to depreciation expense, producing a result which is functionally equivalent to reducing the original cost of the utility plant for the contributions. Certain of the Company's subsidiaries do not depreciate contributed property, based on regulatory guidelines. Amortization of contributions in aid of construction was \$18,327, \$17,423 and \$16,371 for the years ended December 31, 2011, 2010 and 2009, respectively.

Recognition of Revenues

Revenues of the regulated utility subsidiaries are recognized as water and wastewater services are provided and include amounts billed to customers on a cycle basis and unbilled amounts based on estimated usage from the date of the latest meter reading to the end of the accounting period.

The Company has agreements with the United States Government to operate and maintain water and wastewater systems at various military bases pursuant to 50-year contracts ("military agreements"). These contracts also include construction components that are accounted for separately from the operations and management components. The military agreements are subject to periodic price redetermination adjustments and modifications for changes in circumstance. Additionally, the Company has agreements ranging in length from two to 40 years with various industries and municipalities to operate and maintain water and wastewater systems ("O&M agreements"). Revenue from operations and management services are recognized as services are provided. (See Note 16)

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Construction Contracts

Revenues from construction projects are recognized over the contract term based on the estimated percentage of completion during the period compared to the total estimated services to be provided over the entire contract. Losses on contracts are recognized during the period in which the loss first becomes probable and estimable. Revenues recognized during the period in excess of billings on construction contracts are recorded as unbilled revenue. Billings in excess of revenues recognized on construction contracts are recorded as other current liabilities until the recognition criteria are met. Changes in contract performance and related estimated contract profitability may result in revisions to costs and revenues and are recognized in the period in which revisions are determined.

Income Taxes

AWW and its subsidiaries participate in a consolidated federal income tax return for U.S. tax purposes. Members of the consolidated group are charged with the amount of federal income tax expense determined as if they filed separate returns.

Certain income and expense items are accounted for in different time periods for financial reporting than for income tax reporting purposes. The Company provides deferred income taxes on the difference between the tax basis of assets and liabilities and the amounts at which they are carried in the financial statements. These deferred income taxes are based on the enacted tax rates expected to be in effect when these temporary differences are projected to reverse. In addition, the regulated utility subsidiaries recognize regulatory assets and liabilities for the effect on revenues expected to be realized as the tax effects of temporary differences, previously flowed through to customers, reverse.

Investment tax credits have been deferred by the regulated utility subsidiaries and are being amortized to income over the average estimated service lives of the related assets.

The Company recognizes accrued interest and penalties related to tax positions as a component of income tax expense and accounts for sales tax collected from customers and remitted to taxing authorities on a net basis.

Allowance for Funds Used During Construction ("AFUDC")

AFUDC is a non-cash credit to income with a corresponding charge to utility plant that represents the cost of borrowed funds or a return on equity funds devoted to plant under construction. The regulated utility subsidiaries record AFUDC to the extent permitted by the Regulators.

Environmental Costs

The Company's water and wastewater operations are subject to federal, state, local and foreign requirements relating to environmental protection, and as such, the Company periodically becomes subject to environmental claims in the normal course of business. Environmental expenditures that relate to current operations or provide a future benefit are expensed or capitalized as appropriate. Remediation costs that relate to an existing condition caused by past operations are accrued, on an undiscounted basis, when it is probable that these costs will be incurred and can be reasonably estimated. Remediation costs accrued amounted to \$5,500 and \$6,630 at December 31, 2011 and 2010, respectively. At December 31, 2011, the entire accrual relates to a conservation agreement entered into by a subsidiary of the Company with the National Oceanic and Atmospheric Administration ("NOAA") requiring the Company to, among other provisions, implement certain measures to protect the steelhead trout and its habitat in the Carmel River watershed in the state of California. The Company paid and expensed \$3,500 related to this agreement during 2009, and has agreed to pay \$1,100 annually from 2010 to 2016. The Company pursues recovery of incurred costs through all appropriate means, including regulatory recovery through customer rates. The Company's regulatory assets at December 31, 2011 and 2010 include \$9,187 and \$10,642, respectively, related to the NOAA agreement, including an additional \$3,500 granted in 2010 for recovery of the 2009 payment.

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Derivative Financial Instruments

The Company uses derivative financial instruments for purposes of hedging exposures to fluctuations in interest rates. These derivative contracts are entered into for periods consistent with the related underlying exposures and do not constitute positions independent of those exposures. The Company does not enter into derivative contracts for speculative purposes and does not use leveraged instruments.

All derivatives are recognized on the balance sheet at fair value. On the date the derivative contract is entered into, the Company may designate the derivative as a hedge of the fair value of a recognized asset or liability (fair-value hedge) or a hedge of a forecasted transaction or of the variability of cash flows to be received or paid related to a recognized asset or liability (cash-flow hedge).

Changes in the fair value of a fair-value hedge, along with the gain or loss on the underlying hedged item, are recorded in current-period earnings. The effective portion of gains and losses on cash-flow hedges are recorded in other comprehensive income (loss), until earnings are affected by the variability of cash flows. Any ineffective portion of designated hedges is recognized in current-period earnings.

Cash flows from derivative contracts are included in net cash provided by operating activities.

New Accounting Standards

The following recently announced accounting standards have been adopted by the Company and have been included in the consolidated results of operations, financial position or footnotes of the accompanying Consolidated Financial Statements:

Revenue Arrangements with Multiple Deliverables

In October 2009, the Financial Accounting Standards Board ("FASB") issued authoritative guidance that amends existing guidance for identifying separate deliverables in a revenue-generating transaction where multiple deliverables exist, and provides guidance for allocating and recognizing revenue based on those separate deliverables. The guidance is expected to result in more multiple-deliverable arrangements being separable than under current guidance. This guidance is effective for the Company beginning on January 1, 2011 and is required to be applied prospectively to new or significantly modified revenue arrangements. The adoption of this guidance did not have a significant impact on the Company's results of operations, financial position or cash flows.

Business Combinations

In December 2010, the FASB clarified the requirements for reporting of pro forma revenue and earnings disclosures for business combinations. The accounting update specifies that if a public entity presents comparative financial statements, the entity should disclose revenue and earnings of the combined entity as though the business combination(s) that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period only. The amendments also expand the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro forma revenue and earnings. The amendments are effective for the Company for business combinations finalized after January 1, 2011. As this guidance clarifies and provides for additional disclosure requirements only, the adoption of this guidance has not had an impact on the Company's results of operations, financial position or cash flows.

Intangibles—Goodwill

In December 2010, the FASB issued authoritative guidance that modifies step 1 of the goodwill impairment test for reporting units with zero or negative carrying amounts. The update requires that for those reporting units, an entity is required to perform step 2 of the goodwill impairment test if it is more likely than not that a goodwill

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impairment exists. In determining whether it is more likely than not that a goodwill impairment exists, an entity should consider whether there are any adverse qualitative factors indicating that impairment may exist. Existing authoritative guidance requires that goodwill of a reporting unit be tested for impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. This guidance is effective for the Company beginning on January 1, 2011. The adoption of this update did not have a significant impact on the Company's results of operations, financial position or cash flows.

The following recently issued accounting standards are not yet required to be adopted by the Company or included in the consolidated results of operations or financial position of the Company:

Fair Value Measurements

In May 2011, the FASB issued updated accounting guidance related to fair value measurements and disclosures that result in common fair value measurements and disclosures between U.S. GAAP and International Financial Reporting Standards. This new guidance amends current fair value measurement and disclosure guidance to increase transparency around valuation inputs and investment categorization. This guidance is effective for interim and annual periods beginning after December 15, 2011. The new guidance is to be adopted prospectively and early adoption is not permitted. The Company does not expect the adoption of this guidance to have a significant impact on the Company's results of operations, financial position or cash flows.

Comprehensive Income

In June 2011, the FASB issued guidance on the presentation of comprehensive income. The new guidance allows an entity to present components of net income and other comprehensive income in one continuous statement or in two separate, but consecutive statements. The new guidance eliminates the current option to report other comprehensive income and its components in the statement of changes in equity. While the new guidance changes the presentation of comprehensive income, there are no changes to the components that are recognized in net income or other comprehensive income under current accounting guidance. In December 2011, the FASB deferred the requirement to present reclassification adjustments of other comprehensive income on the face of the income statement. The new guidance is effective for fiscal years and interim periods beginning after December 15, 2011. As the Company already presents the components of net income and other comprehensive income in one continuous statement, the adoption of the new guidance will not have an impact on its results of operations, financial position or cash flows.

Testing Goodwill for Impairment

In September 2011, the FASB updated the accounting guidance related to testing goodwill for impairment. This update permits an entity to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test that is currently in place. Under the new guidance, an entity will not be required to calculate the fair value of a reporting unit unless the entity determines, based on the qualitative assessment, that it is more likely than not that its fair value is less than its carrying amount. This update is effective for annual and interim goodwill impairment tests performed in fiscal years beginning after December 15, 2011; however, early adoption is permitted. The Company is evaluating the specific provisions of the updated guidance, but does not expect the adoption of this guidance to have a significant impact on the Company's results of operations, financial position or cash flows.

Reclassifications

Certain reclassifications for discontinued operations (see Note 3) have been made to conform previously reported data to the current presentation.

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Note 3: Acquisitions and Divestitures

Acquisitions

During 2011, the Company closed on nine acquisitions of regulated water and wastewater systems for an aggregate purchase price of \$7,220. The purchase price for each acquisition was allocated to the net tangible and intangible assets based upon their estimated fair values at the acquisition date. Assets acquired totaled \$12,919, of which \$12,814 was utility plant. Liabilities assumed totaled \$4,945, including contributions in aid of construction of \$3,847. The Company recorded gains on acquisitions during 2011 totaling \$754.

In July of 2011, the Company entered into an agreement to purchase seven regulated water systems in New York for approximately \$71,000, adding approximately fifty thousand customers to its regulated operations. This transaction is subject to customary closing conditions including regulatory approval in New York and is expected to close in the first half of 2012.

During 2010, the Company closed on six acquisitions of regulated water and wastewater systems for an aggregate purchase price of \$1,642. The purchase price for each acquisition was allocated to the net tangible and intangible assets based upon their estimated fair values at the acquisition date. Assets acquired consisted of plant and equipment of \$3,064. Liabilities assumed totaled \$1,422, including contributions in aid of construction of \$1,109 and regulatory liabilities of \$313.

During 2009, the Company closed on seven acquisitions (six regulated water and wastewater systems, and one in its Market-Based Operations segment) for an aggregate purchase price of \$18,144. The purchase price for each acquisition was allocated to the net tangible and intangible assets based upon their estimated fair values at the acquisition date. Assets acquired totaled \$29,462, including plant and equipment of \$17,843, current assets of \$5,857, goodwill of \$606, and long-lived assets of \$5,156. Liabilities assumed totaled \$11,318, including debt of \$3,990, current liabilities of \$5,732, long-term liabilities of \$970, and contributions in aid of construction of \$626.

Divestitures

As part of the Company's strategic review of its business investments, it has entered into agreements to sell assets or stock of certain subsidiaries.

In June 2011, the Company completed the sale of the assets of its Texas regulated subsidiary for proceeds of \$6,245. A gain on the sale of the assets has been recognized for \$142 (\$87 after tax). In the first quarter of 2011, the Company recognized a pretax impairment charge of \$561 for the goodwill associated with the Texas subsidiary.

In January of 2012, the Company received approximately \$461,000 in proceeds as a result of completing the sale of its Arizona and New Mexico subsidiaries. The sale is subject to certain post-closing adjustments. In the first quarter of 2011, the Company evaluated the pending sale and recorded an impairment charge totaling \$21,428 pretax and \$21,099 after tax to reduce parent company goodwill associated with these subsidiaries to their net realizable value.

The Company has also entered into an agreement to sell the stock of its Ohio subsidiary. The sale price is currently estimated at approximately \$89,000, plus assumed liabilities, for an estimated enterprise value of approximately \$120,000. The sale is subject to certain closing adjustments. In February 2012, the Ohio public utility commission approved the sale. Closing of this sale is expected during the first half of 2012. In the second quarter of 2011, the Company updated its evaluation of the pending sale and recorded an impairment charge totaling \$3,510 pretax and \$3,456 after tax to reduce parent company goodwill associated with this subsidiary to its net realizable value.

In December 2011, the Company completed the sale of its Applied Water Management subsidiary, part of its Market-Based Operations segment. Proceeds from the sale totaled \$2,923. The Company recorded a pre- and post-tax loss on sale of \$3,126 and \$2,032, respectively.

The Company plans to use the majority of the proceeds from the above sales to reduce debt financing.

Charges recorded in connection with the discontinued operations and disposals of businesses include estimates that are subject to subsequent adjustments.

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Operating results and the financial position of the five subsidiaries named above are included in the accompanying financial statements as discontinued operations.

A summary of discontinued operations presented in the Consolidated Statements of Operations and Comprehensive Income follows:

	Years Ended December 31,		
	2011	2010	2009
Operating revenues	\$ 173,447	\$ 155,642	\$ 150,257
Total operating expenses, net	147,012	135,673	160,483
Operating income (loss)	26,435	19,969	(10,226)
Other income (expense), net	(270)	43	4,767
Income (loss) from discontinued operations before income taxes	26,165	20,012	(5,459)
Provision for income taxes	21,481	7,257	7,626
Income (loss) from discontinued operations, net of tax	\$ 4,684	\$ 12,755	\$ (13,085)

Operating expenses were lower in 2011 due to the cessation of depreciation for assets held for sale totaling \$24,807 for the year ended December 31, 2011. Operating expenses in 2009 include an allocated impairment charge of \$21,964.

Assets and liabilities of discontinued operations in the accompanying Consolidated Balance Sheets include the following:

	December 31, 2011	December 31, 2010
Assets:		
Total property, plant and equipment	\$ 833,023	\$ 819,977
Current assets	21,906	20,710
Regulatory assets	43,849	39,833
Goodwill	29,608	55,107
Other	1,472	2,078
Total assets of discontinued operations	\$ 929,858	\$ 937,705
Liabilities:		
Long-term debt	\$ 11,697	\$ 17,272
Current portion of long-term debt	12,839	8,668
Other current liabilities	29,530	39,505
Advances for construction	205,034	214,045
Regulatory liabilities	4,617	7,622
Other	15,540	(4,058)
Contributions in aid of construction	102,961	90,906
Total liabilities of discontinued operations	\$ 382,218	\$ 373,960

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Note 4: Utility Plant

The components of utility plant by category at December 31 are as follows:

	Range of Remaining Useful Lives	2011	2010
Water plant			
Land and other non-depreciable assets		\$ 128,286	\$ 125,648
Sources of supply	20 to 127 Years	565,301	527,552
Treatment and pumping facilities	3 to 101 Years	2,665,525	2,524,241
Transmission and distribution facilities	9 to 127 Years	6,632,828	6,333,032
Services, meters and fire hydrants	6 to 96 Years	2,539,696	2,402,038
General structures and equipment	3 to 112 Years	693,880	643,973
Wastewater plant	4 to 86 Years	546,002	519,219
Construction work in progress		460,529	299,733
		14,232,047	13,375,436
Less accumulated depreciation		3,360,005	3,134,094
		<u>\$ 10,872,042</u>	<u>\$ 10,241,342</u>

Utility plant depreciation expense of continuing operations amounted to \$268,987 in 2011, \$250,107 in 2010 and \$237,741 in 2009. The Company's regulated utility subsidiaries record depreciation in conformity with amounts approved by state regulators after regulatory review of information the Company submits to support its estimates of the assets' remaining useful lives.

The provision for depreciation expressed as a percentage of the aggregate average depreciable asset balances was 2.68% in 2011, and 2.62% in 2010 and 2009, respectively.

Note 5: Allowance for Uncollectible Accounts

The following table summarizes the changes in the Company's allowances for uncollectible accounts:

	2011	2010	2009
Balance at January 1	\$ (17,474)	\$ (18,148)	\$ (16,859)
Amounts charged to expense	(16,178)	(17,973)	(20,999)
Amounts written off	21,855	22,124	23,104
Recoveries of amounts written off	(3,522)	(3,477)	(3,394)
Balance at December 31	<u>\$ (15,319)</u>	<u>\$ (17,474)</u>	<u>\$ (18,148)</u>

Note 6: Other Receivables, Net

Components of the Company's other receivables, net at December 31 are as follows:

	2011	2010
Market-based trade accounts receivable	\$ 26,734	\$ 36,357
Allowance for doubtful accounts—market-based trade accounts receivable	(3,067)	(3,015)
Market-based unbilled revenue	14,367	14,273
Other	22,379	23,974
	<u>\$ 60,413</u>	<u>\$ 71,589</u>

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The following table summarizes the changes in the Company's market-based allowances for uncollectible accounts:

	2011	2010	2009
Balance at January 1	\$ (3,015)	\$ (3,520)	\$ (4,622)
Amounts charged to (expense) income	(3,583)	(223)	796
Amounts written off	2,886	748	476
Recoveries of amounts written off	645	(20)	(170)
Balance at December 31	<u>\$ (3,067)</u>	<u>\$ (3,015)</u>	<u>\$ (3,520)</u>

Note 7: Regulatory Assets and Liabilities

The regulatory assets represent costs that are expected to be fully recovered from customers in future rates. Except for income taxes, regulatory assets are excluded from the Company's rate base and generally do not earn a return. The components of regulatory assets at December 31 are as follows:

	2011	2010
Income taxes recoverable through rates	\$ 252,570	\$ 247,104
Debt and preferred stock expense	73,096	76,278
Deferred pension expense	256,858	207,633
Deferred other postretirement benefit expense	149,393	126,894
Deferred security costs	4,837	7,479
Deferred business services project expense	8,776	10,670
Deferred tank painting costs	29,500	26,924
Deferred rate case expense	14,553	9,322
Purchase premium recoverable through rates	60,635	60,647
Environmental remediation recoverable through rates	9,187	10,642
Coastal water project costs	24,419	27,084
San Clemente Dam project costs	22,890	18,723
Removal costs recoverable through rates	80,402	59,317
Other	92,545	87,457
	<u>\$ 1,079,661</u>	<u>\$ 976,174</u>

The Company has recorded a regulatory asset for the additional revenues expected to be realized as the tax effects of temporary differences previously flowed through to customers reverse. These temporary differences are primarily related to the difference between book and tax depreciation on property placed in service before the adoption by the regulatory authorities of full normalization for rate making purposes. Full normalization requires no flow through of tax benefits to customers. The regulatory asset for income taxes recoverable through rates is net of the reduction expected in future revenues as deferred taxes previously provided, attributable to the difference between the state and federal income tax rates under prior law and the current statutory rates, reverse over the average remaining service lives of the related assets.

Debt expense is amortized over the lives of the respective issues. Call premiums on the redemption of long-term debt, as well as unamortized debt expense, are deferred and amortized to the extent they will be recovered through future service rates. Expenses of preferred stock issues without sinking fund provisions are amortized over 30 years from date of issue; expenses of issues with sinking fund provisions are charged to operations as shares are retired.

Pension expense in excess of the amount contributed to the pension plans is deferred by certain subsidiaries. These costs will be recovered in future service rates as contributions are made to the pension plan. The Company

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also has regulatory assets of \$243,926 and \$180,200 at December 31, 2011 and 2010, respectively, which is the portion of the underfunded status that is probable of recovery through rates in future periods.

Postretirement benefit expense in excess of the amount recovered in rates through 1997 has been deferred by certain subsidiaries. These costs are recognized in the rates charged for water service and will be recovered as authorized by the Company's regulatory authorities. The Company also has regulatory assets of \$147,441 and \$121,665 at December 31, 2011 and 2010, respectively, which is the portion of the underfunded status that is probable of recovery through rates in future periods.

The costs of additional security measures that were implemented to protect facilities after the terrorist attacks on September 11, 2001 have been deferred by certain subsidiaries. These costs are recognized in the rates charged for water service by certain subsidiaries. These costs are being recovered over periods ranging from five to ten years from the time of regulatory approval.

Business services project expenses consist of reengineering and start-up activities for consolidated customer and shared administrative service centers that began operations in 2001. These costs are recognized in the rates charged for water service by certain subsidiaries.

Tank painting costs are generally deferred and amortized to current operations on a straight-line basis over periods ranging from two to 15 years, as authorized by the regulatory authorities in their determination of rates charged for service.

The Company amortizes rate case expenditures over regulatory approved amortization periods, typically three years. Rate case proceeding expenditures probable of future recovery are deferred.

Purchase premium recoverable through rates is primarily the recovery of the acquisition premiums related to an asset acquisition by the Company's California subsidiary during 2002, and acquisitions in 2007 by the Company's New Jersey subsidiary. As authorized for recovery by the California and New Jersey Regulators, these costs are being amortized to operations through November 2048.

Environmental remediation recoverable through rates is the recovery of costs incurred by the Company's California subsidiary under a settlement agreement entered into with NOAA to improve habitat conditions in the Carmel River Watershed.

Coastal water project costs include preliminary costs associated with the studying, testing and design of alternatives to help solve water supply shortages in Monterey, California. Coastal water project costs incurred through December 31, 2009 have been reviewed and approved for recovery through a surcharge. Costs deferred during 2011 and 2010 totaled \$2,528 and \$7,677, respectively. The Company believes it is probable that the costs incurred since the last rate review will also be recoverable.

San Clemente Dam project costs include deferred costs for the Company's California subsidiary to investigate alternatives to strengthen or remove the San Clemente Dam due to potential earthquake or flood safety concerns. In November 2011, a Proposed Decision ("PD") was issued by the Administrative Law Judge ("ALJ") assigned to the matter. In the PD, the ALJ recommended that recovery of virtually all of the historical costs should be disallowed. The Company's California subsidiary has filed comments with the California Public Utility Commission ("CPUC") contending that the PD is unreasonable, unsupported by and contrary to the evidence, and contrary to law and policy. The PD is currently under review by the CPUC, which has delayed issuing a decision on several occasions and most recently has indicated that it will not vote on a decision until April 2012. The Company believes there are sound reasons for the CPUC to modify the PD to permit recovery of the historical costs. These costs are not yet in rates; however, the Company believes it is probable that the costs incurred will be recoverable.

Other regulatory assets include certain deferred employee benefit costs, deferred treatment facility costs, as well as various regulatory balancing accounts.

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The components of regulatory liabilities at December 31 are as follows:

	2011	2010
Removal costs recovered through rates	\$ 272,618	\$ 260,947
Other	53,211	35,174
	<u>\$ 325,829</u>	<u>\$ 296,121</u>

Removal costs recovered through rates are retirement costs recovered during the life of the associated assets. In December 2008, the Company's subsidiary in New Jersey, at the direction of the New Jersey Regulator, began to amortize \$48,000 of the total balance into operations via straight line amortization through November 2048.

Other regulatory liabilities include legal settlement proceeds, deferred gains, future customer refunds, and various regulatory balancing accounts. The Company's increased pension contributions in 2011 resulted in increased pension balancing accounts.

Note 8: Goodwill

The Company's annual impairment reviews are performed as of November 30 of each year, in conjunction with the completion of the Company's annual strategic business plan. At November 30, 2011, the Company's goodwill was \$1,195,069. The Company also undertakes interim reviews when the Company determines that a triggering event that would more likely than not reduce the fair value of a reporting unit below its carrying value has occurred.

The Company uses a two-step impairment test to identify potential goodwill impairment and measure the amount of a goodwill impairment loss to be recognized (if any). The step 1 calculation used to identify potential impairment compares the calculated fair value for each of the Company's reporting units to their respective net carrying values (book values), including goodwill, on the measurement date. If the fair value of any reporting unit is less than such reporting unit's carrying value, then step 2 is performed to measure the amount of the impairment loss (if any) for such reporting unit.

The step 2 calculation of the impairment test compares, by reporting unit, the implied fair value of the goodwill to the carrying value of goodwill. The implied fair value of goodwill is equal to the excess of the fair value of each reporting unit above the fair value of such reporting unit's identified assets and liabilities. If the carrying value of goodwill exceeds the implied fair value of goodwill for any reporting unit, an impairment loss is recognized in an amount equal to the excess (not to exceed the carrying value of goodwill) for that reporting unit.

The determination of the fair value of each reporting unit and the fair value of each reporting unit's assets and liabilities is performed as of the measurement date using observable market data before and after the measurement date (if that subsequent information is relevant to the fair value on the measurement date).

For the November 30, 2011 impairment test, the estimated fair value of each reporting unit for step 1 was based on a combination of the following valuation techniques:

- observable trading prices of comparable equity securities considered to be the Company's peers; and
- discounted cash flow models developed from the Company's internal forecasts.

The first valuation technique applies average peer multiples to each reporting unit's historic and forecasted cash flows. The peer multiples are calculated using the average trading prices of comparable equity securities, their published cash flows and forecasts of market prices and cash flows for those peers.

The second valuation technique forecasts each reporting unit's five-year cash flows using an estimated long-term growth rate and discounts these cash flows at their respective estimated weighted average cost of capital.

The Company has completed its November 30, 2011 annual impairment review. Based on this review, the Company's goodwill balance was not impaired. The Company's fair value calculated in its 2011 impairment test period was greater than the aggregate carrying value of its reporting units.

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However, there can be no assurances that the Company will not be required to recognize an impairment of goodwill in the future due to market conditions or other factors related to the Company's performance. These market events could include a decline over a period of time of the Company's stock price, a decline over a period of time in valuation multiples of comparable water utilities, the lack of an increase in the Company's market price consistent with its peer companies, or decreases in control premiums. A decline in the forecasted results in the Company's business plan, such as changes in rate case results or capital investment budgets or changes in the Company's interest rates, could also result in an impairment charge.

The Company also made certain assumptions, which it believes to be appropriate, that support the fair value of its reporting units. The Company considered, in addition to the listed trading price of the Company's shares, the applicability of a control premium to the Company's shares and certain other factors the Company deemed appropriate. As a result, the Company concluded that the Company's fair value exceeds what the Company might otherwise have concluded had it relied on market price alone.

The difference between the Company's calculated market capitalization (which approximates carrying value) and the aggregate fair value of reporting units resulted from an estimated control premium. The estimated control premium represents the incremental premium a buyer is willing to pay to acquire a controlling, majority interest in the Company. In estimating the control premium, management principally considered the current market conditions and historical premiums paid in utility acquisitions observed in the marketplace.

No impairment charge was recorded to the Company's continuing operations for the years ended December 31, 2011 and 2010, respectively. For the year ended December 31, 2009, the Company recorded impairment charges for goodwill in the amount of \$428,036.

The change in the Company's goodwill assets, as allocated between the reporting units is as follows:

	Regulated Unit		Market-Based Units		Consolidated		Total Net
	Cost	Accumulated Impairment	Cost	Accumulated Impairment	Cost	Accumulated Impairment	
Balance at January 1, 2010	\$ 3,399,848	\$ (2,332,670)	\$ 235,715	\$ (107,619)	\$ 3,635,563	\$ (2,440,289)	\$ 1,195,274
Reclassifications and other activity	36	0	275	0	311	0	311
Balance at December 31, 2010	\$ 3,399,884	\$ (2,332,670)	\$ 235,990	\$ (107,619)	\$ 3,635,874	\$ (2,440,289)	\$ 1,195,585
Reclassifications and other activity	(516)	0	0	0	(516)	0	(516)
Balance at December 31, 2011	\$ 3,399,368	\$ (2,332,670)	\$ 235,990	\$ (107,619)	\$ 3,635,358	\$ (2,440,289)	\$ 1,195,069

Note 9: Stockholders' Equity

Common Stock

In March 2010, the Company established American Water Stock Direct, a dividend reinvestment and direct stock purchase plan (the "DRIP"). Under the DRIP, stockholders may reinvest cash dividends and purchase

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additional Company common stock, up to certain limits, through a transfer agent without commission fees. The Company's transfer agent may buy newly issued shares directly from the Company or shares held in the Company's treasury. The transfer agent may also buy shares in the public markets or in privately negotiated transactions. Purchases generally are made and credited to DRIP accounts once each week. As of December 31, 2011, there were 4,873 shares available for future issuance under the DRIP. The following table summarizes information regarding issuances under the DRIP for the years ended December 31, 2011 and 2010:

	<u>2011</u>	<u>2010</u>
Shares of common stock issued	64	63
Cash proceeds received	\$ 1,827	\$ 1,425

Cash dividend payments made during 2011 and 2010 were as follows:

	<u>2011</u>	<u>2010</u>
Dividends per share, three months ended:		
March 31	\$ 0.22	\$ 0.21
June 30	0.22	0.21
September 30	0.23	0.22
December 31	0.23	0.22
Total dividends paid, three months ended:		
March 31	\$ 38,525	\$ 36,679
June 30	38,580	36,689
September 30	40,358	38,457
December 31	40,392	38,476

On December 9, 2011, the Company declared a quarterly cash dividend payment of \$0.23 per share payable on March 1, 2012 to all shareholders of record as of February 3, 2012. As of December 31, 2011, the Company had accrued dividends totaling \$40,403 included in Other current liabilities in the accompanying Consolidated Balance Sheets.

Accumulated Other Comprehensive Loss

The following table presents accumulated other comprehensive loss:

	<u>2011</u>	<u>2010</u>
Employee benefit plans funded status adjustments	\$ (101,457)	\$ (75,639)
Foreign currency translation	3,780	4,193
Balance at December 31	<u>\$ (97,677)</u>	<u>\$ (71,446)</u>

Stock Based Compensation

The Company has granted stock option and restricted stock unit awards to non-employee directors, officers and other key employees of the Company pursuant to the terms of its 2007 Omnibus Equity Compensation Plan (the "Plan"). The total aggregate number of shares of common stock that may be issued under the Plan is 15,500. As of December 31, 2011, a total of 10,948 shares are available for grant under the Plan. Shares issued under the Plan may be authorized but unissued shares of Company stock or reacquired shares of Company stock, including shares purchased by the Company on the open market for purposes of the Plan.

The Company recognizes compensation expense for stock awards over the vesting period of the award. The following table presents stock-based compensation expense recorded in operation and maintenance expense in

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the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss) for the years ended December 31, 2011, 2010 and 2009:

	2011	2010	2009
Stock options	\$ 3,182	\$ 4,116	\$ 3,415
Restricted stock units	6,340	5,863	3,799
Employee stock purchase plan	486	355	388
Stock-based compensation in operation and maintenance expense	10,008	10,334	7,602
Income tax benefit	(3,903)	(4,030)	(2,965)
After-tax stock-based compensation expense	<u>\$ 6,105</u>	<u>\$ 6,304</u>	<u>\$ 4,637</u>

There were no significant stock-based compensation costs capitalized during the years ended December 31, 2011, 2010 and 2009.

The cost of services received from employees in exchange for the issuance of stock options and restricted stock awards is measured based on the grant date fair value of the awards issued. The value of stock options and restricted stock unit awards at the date of the grant is amortized through expense over the three-year service period. All awards granted in 2011, 2010 and 2009 are classified as equity.

The Company receives a tax deduction based on the intrinsic value of the award at the exercise date for stock options and the distribution date for restricted stock units. For each award, throughout the requisite service period, the Company recognizes the tax benefit related to compensation costs, which have been included in deferred tax assets. The tax deductions in excess of the benefits recorded throughout the requisite service period are recorded to shareholders' equity or the income statement and are included in the financing section of the statement of cash flows.

The Company stratified its grant populations and used historic employee turnover rates to estimate employee forfeitures. The estimated rate is compared to the actual forfeitures at the end of the period and adjusted as necessary.

Stock Options

In the first quarters of 2011, 2010 and 2009, the Company granted non-qualified stock options to certain employees under the Plan. The stock options vest ratably over the three-year service period beginning on January 1 of the year of grant. These awards have no performance vesting conditions and the grant date fair value is amortized through expense over the requisite service period using the straight-line method.

On August 15, 2010, the Company's board of directors elected a new President and Chief Executive Officer ("CEO") of the Company. In connection with his election to these offices, the Company's new CEO was granted non-qualified stock options that cliff vest two years from the date of grant. Additionally, the CEO was granted non-qualified stock options that vest ratably over a three-year period beginning January 1, 2010. These awards have no performance vesting conditions.

Also on August 15, 2010, the Company's former President and Chief Executive Officer resigned as an officer and director of the Company. Pursuant to his resignation, the Company cancelled options to purchase 33 shares of Company stock, accelerated the vesting of 247 options, extended the termination dates of vested options and recognized \$315 additional expense related to the modifications that is recorded in operation and maintenance expense in the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss) for the year ended December 31, 2010.

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The following table presents the weighted average assumptions used in the pricing model for grants and the resulting weighted average grant date fair value of stock options granted in the years ended December 31, 2011, 2010 and 2009:

	2011	2010	2009
Dividend yield	3.25%	3.83%	3.86%
Expected volatility	29.32%	31.77%	31.67%
Risk-free interest rate	1.93%	2.14%	1.79%
Expected life (years)	4.35	4.29	4.36
Exercise price	\$ 27.08	\$ 22.01	\$ 20.70
Grant date fair value per share	\$ 5.14	\$ 4.33	\$ 3.96

The Company utilized the "simplified method" to determine the expected stock option life due to insufficient historical experience to estimate the exercise patterns of the stock options granted. The Company began granting stock options at the time of the IPO in April 2008. Expected volatility is based on a weighted average of historic volatilities of traded common stock of peer companies (regulated water companies) over the expected term of the stock options and historic volatilities of the Company's common stock during the period it has been publicly traded. The dividend yield is based on the Company's expected dividend payments and the stock price on the date of grant. The risk-free interest rate is the market yield on U.S. Treasury strips with maturities similar to the expected term of the stock options. The exercise price of the stock options is equal to the fair market value of the underlying stock on the date of option grant. Stock options granted vest over periods ranging from one to three years and expire seven years from the effective date of the grant. The fair value of each option is estimated on the date of grant using the Black-Scholes option-pricing model.

The value of stock options at the date of the grant is amortized through expense over the requisite service period using the straight-line method. As of December 31, 2011, \$3,389 of total unrecognized compensation costs related to the nonvested stock options is expected to be recognized over the remaining weighted-average period of 1.6 years. The total grant date fair value of stock options vested during the years ended December 31, 2011, 2010 and 2009 was \$4,578, \$4,505 and \$92, respectively.

The table below summarizes stock option activity for the year ended December 31, 2011:

	Shares	Weighted Average Exercise Price (per share)	Weighted Average Remaining Life (years)	Aggregate Intrinsic Value
Options outstanding at January 1, 2011	2,870	\$ 21.38		
Granted	736	27.08		
Forfeited or expired	(71)	23.27		
Exercised	(423)	21.27		
Options outstanding at December 31, 2011	<u>3,112</u>	<u>\$ 22.70</u>	<u>4.3</u>	<u>\$ 28,493</u>
Exercisable at December 31, 2011	<u>1,686</u>	<u>\$ 21.34</u>	<u>3.5</u>	<u>\$ 17,738</u>

The following table summarizes additional information regarding stock options exercised during the years ended December 31, 2011, 2010 and 2009:

	2011	2010	2009
Intrinsic value	\$ 3,026	\$ 333	\$ 0
Exercise proceeds	8,991	3,010	0
Income tax benefit (shortfall)	511	(89)	0

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Restricted Stock Units

In the first quarters of 2011 and 2010 and August 2010, the Company granted restricted stock units to certain employees under the Plan. The restricted stock units vest ratably over the three-year performance period beginning January 1 of the year of grant (the "Performance Period"); however, distribution of the shares is contingent upon the achievement of internal performance measures and, separately, certain market thresholds over the Performance Period. In February 2009, the Company granted restricted stock units that vest ratably over the three year performance period beginning January 1, 2009 (the "2009 Performance Period"); however, distribution of the shares is contingent upon the achievement of certain market thresholds over the 2009 Performance Period.

During 2011, 2010 and 2009, the Company granted restricted stock units to certain non-employee directors under the Plan. The restricted stock units vested on the date of grant; however, distribution of the shares will be made within 30 days of the earlier of (a) 15 months after grant date or (b) the participant's separation from service. Because these restricted stock units vested on grant date, the total grant date fair value was recorded in operation and maintenance expense included in the expense table above on the grant date.

In August 2010, the Company accelerated the vesting of 12 restricted stock units granted in 2008 to the Company's former CEO. Additionally the Company cancelled 9 restricted stock units granted in 2009 and 2010; the remaining outstanding awards will be subject to the Company's achievement of internal performance measures and certain market thresholds over the applicable three-year performance periods as if he had remained in the employ of the Company during the entire performance periods. The net impact associated with these modifications was a reduction to operation and maintenance expense of \$12 for the year ended December 31, 2010.

Restricted stock units generally vest over periods ranging from one to three years. Restricted stock units granted without market conditions are valued at the market value of the Company's common stock on the date of grant. Restricted stock units granted with market conditions are valued using a Monte Carlo model. Expected volatility is based on historical volatilities of traded common stock of the Company and comparative companies using daily stock prices over the past three years. The Company's volatility was calculated using a weighted average of eight companies for the 2011 and 2010 periods and nine companies for 2009, respectively, before the Company's stock was publicly traded. The expected term is three years and the risk-free interest rate is based on the three-year U.S. Treasury rate in effect as of the measurement date. The following table presents the weighted average assumptions used in the Monte Carlo simulation and the weighted average grant date fair values of restricted stock units granted during the years ended December 31, 2011, 2010 and 2009:

	2011	2010	2009
Expected volatility	29.50%	30.74%	32.00%
Risk-free interest rate	1.24%	1.50%	1.30%
Expected life (years)	3	3	3
Grant date fair value per share	\$ 29.95	\$ 23.23	\$ 21.75

The value of restricted stock awards at the date of the grant is amortized through expense over the requisite service period using the straight-line method for restricted stock units with service and/or performance vesting. The grant date fair value of restricted stock awards that have (a) market and/or performance and service conditions and (b) vest ratably is amortized through expense over the requisite service period using the graded-vesting method. As of December 31, 2011, \$3,172 of total unrecognized compensation cost related to the nonvested restricted stock units is expected to be recognized over the weighted-average remaining life of 1.3 years. The total grant date fair value of restricted stock units vested during the years ended December 31, 2011, 2010 and 2009 was \$2,040, \$2,204 and \$438, respectively.

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The table below summarizes restricted stock unit activity for the year ended December 31, 2011:

	Shares		Weighted Average Grant Date Fair Value (per share)
Nonvested total at January 1, 2011	479	\$	22.60
Granted	205		29.95
Vested	(89)		22.88
Forfeited	(18)		25.28
Nonvested total at December 31, 2011	577	\$	25.09

The following table summarizes additional information regarding restricted stock units distributed during the years ended December 31, 2011, 2010 and 2009:

	2011	2010	2009
Intrinsic value	\$ 2,068	\$ 1,241	\$ 51
Income tax benefit (shortfall)	99	15	(2)

If dividends are declared with respect to shares of the Company's common stock before the restricted stock units are distributed, the Company credits a liability for the value of the dividends that would have been paid if the restricted stock units were shares of Company common stock. When the restricted stock units are distributed, the Company pays the employee a lump sum cash payment equal to the value of the dividend equivalents accrued. The Company accrued dividend equivalents totaling \$921, \$474 and \$279 to retained earnings during the years ended December 31, 2011, 2010 and 2009, respectively.

Employee Stock Purchase Plan

The Company's Nonqualified Employee Stock Purchase Plan ("ESPP") was effective as of July 1, 2008. Under the ESPP, employees can use payroll deductions to acquire Company stock at the lesser of 90% of the fair market value of (a) the beginning or (b) the end of each three-month purchase period. As of December 31, 2011 there were 1,592 shares of common stock reserved for issuance under the ESPP. The Company's ESPP is considered compensatory. Compensation costs of \$486, \$355 and \$388 were recognized for the years ended December 31, 2011, 2010 and 2009, respectively. During the years ended December 31, 2011, 2010 and 2009, the Company issued 121, 119 and 129 shares, respectively, under the ESPP.

Note 10: Preferred Stock Without Mandatory Redemption Requirements

Certain preferred stock agreements do not require annual sinking fund payments or redemption except at the option of the subsidiaries and are as follows:

Dividend Yield	Balance at December 31,	
	2011	2010
4.50%	\$ 1,720	\$ 1,720
5.00%	1,952	1,952
5.50%	486	486
5.75%	389	389
	\$ 4,547	\$ 4,547

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The Company reflects its subsidiaries' preferred stock without mandatory redemption requirements, which represents the Company's noncontrolling interest, in the total stockholders' equity section of the accompanying Consolidated Balance Sheets. The dividends on these preferred shares have not been reflected as income attributable to noncontrolling interest in the Consolidated Statements of Operations and Comprehensive Income (Loss) as the total amount of these dividends is not considered material. The dividends issued were \$224 for 2011 and 2010, respectively, and \$225 for 2009. The amounts have been included as a component of other income (expenses) in the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss).

Note 11: Long-Term Debt

The Company primarily incurs long-term debt to fund capital expenditures of the regulated subsidiaries. The components of long-term at December 31 are:

	Rate	Weighted Average Rate	Maturity Date	2011	2010
Long-term debt of American Water Capital Corp. ("AWCC")(a)					
Private activity bonds and government funded debt					
Fixed rate	4.85%-6.75%	5.72%	2018-2040	\$ 322,610	\$ 322,610
Senior notes					
Fixed rate	5.39%-10.00%	6.25%	2013-2040	3,089,409	3,117,696
Long-term debt of other subsidiaries					
Private activity bonds and government funded debt					
Fixed rate	0.00%-6.20%	5.07%	2012-2039	1,206,332	1,201,723
Mortgage bonds					
Fixed rate	5.48%-9.71%	7.40%	2012-2039	697,800	730,991
Mandatory redeemable preferred stock	4.60%-9.75%	8.43%	2013-2036	22,101	22,844
Notes payable and other(b)	9.49%-13.96%	12.12%	2013-2026	1,691	5,689
Long-term debt				5,339,943	5,401,553
Unamortized debt discount, net(c)				43,888	51,154
Fair value adjustment to interest rate hedge				6,111	(345)
Total long-term debt				<u>\$ 5,389,942</u>	<u>\$ 5,452,362</u>

- (a) AWCC, which is a wholly-owned subsidiary of the Company, has a strong support agreement with its parent that, under certain circumstances, is the functional equivalent of a guarantee.
- (b) Includes capital lease obligations of \$1,264 and \$5,076 at December 31, 2011 and 2010, respectively.
- (c) Includes fair value adjustments previously recognized in acquisition purchase accounting.

All \$697,800 of the subsidiaries' mortgage bonds and \$1,150,003 of the \$1,206,332 total subsidiaries' private activity bonds and government funded debt are collateralized by utility plant.

Long-term debt indentures contain a number of covenants that, among other things, limit, subject to certain exceptions, the Company from issuing debt secured by the Company's assets. Certain long term notes require the Company to maintain a ratio of consolidated total indebtedness to consolidated total capitalization of not more than 0.70 to 1.00. The ratio at December 31, 2011 was 0.58 to 1.00. In addition, the Company has \$1,701,322 of notes which include the right to redeem the notes in whole or in part from time to time subject to certain restrictions.

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The future sinking fund payments and maturities are as follows:

Year	Amount
2012	\$ 28,855
2013	112,594
2014	9,416
2015	49,568
2016	47,172
Thereafter	5,092,338

The following long-term debt was issued in 2011:

Company	Type	Interest Rate	Maturity	Amount
Other subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-1.56%	2031	\$ 12,510
Total issuances				<u>\$ 12,510</u>

The following long-term debt was retired through optional redemption or payment at maturity during 2011:

Company	Type	Interest Rate	Maturity	Amount
American Water Capital Corp.	Senior notes—fixed rate	6.00%-8.25%	2011-2039	\$ 28,287
Other subsidiaries	Private activity bonds and government funded debt—fixed rate	0.00%-5.90%	2011-2034	7,976
Other subsidiaries	Mortgage bonds—fixed rate	8.21%-9.71%	2011-2022	33,191
Other subsidiaries	Mandatory redeemable preferred stock	4.60%-9.18%	2013-2019	1,888
Other	Capital leases and other			4,078
Total retirements and redemptions				<u>\$ 75,420</u>

Included in the capital lease redemptions above is a non-cash redemption of \$3,487 associated with a cancelled sublease and a capital lease arrangement.

Interest, net includes interest income of approximately \$10,942, \$10,320 and \$10,397 in 2011, 2010 and 2009, respectively.

One of the principal market risks to which the Company is exposed is changes in interest rates. In order to manage the exposure, the Company follows risk management policies and procedures, including the use of derivative contracts such as swaps. The Company uses a combination of fixed-rate and variable-rate debt to manage interest rate exposure. The Company does not enter into derivative contracts for speculative purposes and does not use leveraged instruments. The derivative contracts entered into are for periods consistent with the related underlying exposures. The Company is exposed to the risk that counterparties to derivative contracts will fail to meet their contractual obligations. The Company minimizes the counterparty credit risk on these transactions by dealing only with leading, credit-worthy financial institutions having long-term credit ratings of "A" or better.

On July 12, 2010, the Company entered into an interest rate swap to hedge \$100,000 of its 6.085% fixed-rate debt maturing 2017. The Company will pay variable interest of six-month LIBOR plus 3.422%. The swap is

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accounted for as a fair-value hedge, and matures with the fixed-rate debt in 2017. The Company uses a combination of fixed-rate and variable-rate debt to manage interest rate exposure.

At December 31, 2011 and 2010, the Company had a \$100,000 notional amount variable interest rate swap fair-value hedge outstanding, respectively. The following table provides a summary of the derivative fair value balance recorded by the Company as of December 31, 2011 and 2010 and the line item in the Consolidated Balance Sheet in which such amount is recorded:

Balance sheet classification	December 31, 2011	December 31, 2010
Regulatory and other long-term assets		
Other	\$ 5,824	\$ 0
Regulatory and other long-term liabilities		
Other	0	898
Long-term debt		
Long-term debt	6,111	(345)

For derivative instruments that are designated and qualify as fair-value hedges, the gain or loss on the hedge instrument as well as the offsetting loss or gain on the hedged item attributable to the hedged risk are recognized in current net income (loss). The Company includes the gain or loss on the derivative instrument and the offsetting loss or gain on the hedged item in interest expense as follows:

Income Statement Classification	December 31, 2011	December 31, 2010
Interest, net		
Gain (loss) on swap	\$ 6,722	\$ (898)
(Loss) gain on borrowing	(6,455)	345
Hedge ineffectiveness	267	(553)

Note 12: Short-Term Debt

The components of short-term debt at December 31 are as follows:

	2011	2010
Revolving credit lines	\$ 0	\$ 2,734
Commercial paper, net of \$52 and \$10 discount at 2011 and 2010, respectively	481,048	175,290
Book overdraft	34,002	50,881
Total short-term debt	<u>\$ 515,050</u>	<u>\$ 228,905</u>

AWCC had the following available capacity under its commercial paper program at December 31:

	2011	2010
Commercial paper program	\$ 700,000	\$ 700,000
Commercial paper program available capacity	218,900	524,700

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AWCC has entered into an \$840,000 senior unsecured credit facility syndicated among a group of 10 banks with JPMorgan Chase Bank, N.A. acting as administrative agent.

This revolving credit facility is principally used to support the commercial paper program at AWCC and to provide up to \$150,000 in letters of credit. On September 15, 2008, a majority of the banks agreed to further extend \$685,000 of commitments under this revolving credit facility to September 15, 2013. On December 18, 2008, The Bank of New York Mellon joined the credit facility syndicate with a commitment amount of \$40,000 through September 15, 2012. If any lender defaults in its obligation to fund advances, the Company may request the other lenders to assume the default lender's commitment or replace such defaulting lender by designating an assignee willing to assume the commitment, however the remaining lenders have no obligation to assume a defaulting lender's commitment and we can provide no assurances that we will replace a defaulting lender.

At December 31, AWCC had the following sub-limits and available capacity under the credit facility.

	2011	2010
Letter of credit sublimit	\$ 150,000	\$ 150,000
Letter of credit available capacity	113,548	113,203

At December 31, 2011, the Company had \$36,830 of outstanding letters of credit, \$36,452 of which was issued under the revolving credit facility noted above.

The following table presents the short-term borrowing activity for AWCC for the years ended December 31, 2011 and 2010:

	2011	2010
Average borrowings	\$ 362,615	\$ 164,782
Maximum borrowings outstanding	494,900	263,500
Weighted average interest rates, computed on a daily basis	0.41%	0.42%
Weighted average interest rates, at December 31	0.56%	0.46%

Interest rates on advances under the credit facility are based on either prime or the London Interbank Offering Rate ("LIBOR") plus an applicable margin based upon credit ratings of the Company, as well as total outstanding amounts under the agreement at the time of the borrowing. The maximum LIBOR margin is 55 basis points.

The credit facility requires the Company to maintain a ratio of consolidated debt to consolidated capitalization of not more than 0.70 to 1.00. The ratio at December 31, 2011 was 0.58 to 1.00.

None of the Company's borrowings are subject to default or prepayment as a result of a downgrading of securities, although such a downgrading could increase fees and interest charges under the Company's credit facilities.

As part of the normal course of business, the Company routinely enters contracts for the purchase and sale of water, energy, fuels and other services. These contracts either contain express provisions or otherwise permit the Company and its counterparties to demand adequate assurance of future performance when there are reasonable grounds for doing so. In accordance with the contracts and applicable contract law, if the Company is downgraded by a credit rating agency, especially if such downgrade is to a level below investment grade, it is possible that a counterparty would attempt to rely on such a downgrade as a basis for making a demand for adequate assurance of future performance. Depending on the Company's net position with a counterparty, the demand could be for the posting of collateral. In the absence of expressly agreed provisions that specify the collateral that must be provided, the obligation to supply the collateral requested will be a function of the facts and circumstances of the Company's situation at the time of the demand. If the Company can reasonably claim that it is willing and financially able to perform its obligations, it may be possible to successfully argue that no collateral should be posted or that only an amount equal to two or three months of future payments should be sufficient. The Company does not expect to post any collateral which will have a material adverse impact on the Company's results of operations, financial position or cash flows.

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AWCC had entered into a one year \$10,000 committed revolving line of credit with PNC Bank, N.A. Outstanding borrowings against this line totaled \$0 and \$2,734 at December 31, 2011 and 2010, respectively. This line of credit was terminated without renewal on December 31, 2011.

Note 13: General Taxes

Components of general tax expense from continuing operations for the years ended December 31 are as follows:

	2011	2010	2009
Gross receipts and franchise	\$ 90,674	\$ 86,063	\$ 79,410
Property and capital stock	77,330	78,184	70,907
Payroll	31,705	31,089	27,834
Other general	10,769	10,261	8,469
	<u>\$ 210,478</u>	<u>\$ 205,597</u>	<u>\$ 186,620</u>

Note 14: Income Taxes

Components of income tax expense from continuing operations for the years ended December 31 are as follows:

	2011	2010	2009
State income taxes			
Current	\$ (7,440)	\$ 24,653	\$ (19,582)
Deferred			
Current	(171)	78	(1,661)
Non-current	44,576	11,024	38,908
	<u>36,965</u>	<u>35,755</u>	<u>17,665</u>
Federal income taxes			
Current	12,239	(1,500)	555
Deferred			
Current	(314)	69	(16,189)
Non-current	151,403	141,589	113,174
Amortization of deferred investment tax credits	(1,542)	(1,561)	(1,413)
	<u>161,786</u>	<u>138,597</u>	<u>96,127</u>
	<u>\$ 198,751</u>	<u>\$ 174,352</u>	<u>\$ 113,792</u>

A reconciliation of income tax expense from continuing operations at the statutory federal income tax rate to actual income tax expense for the years ended December 31 is as follows:

	2011	2010	2009
Income tax at statutory rate	\$ 176,288	\$ 150,298	\$ (37,172)
Increases (decreases) resulting from:			
State taxes, net of federal taxes	24,027	23,241	11,482
Change in valuation allowance	(160)	(533)	(6,578)
Flow through differences	2,895	2,807	2,760
Amortization of deferred investment tax credits	(1,542)	(1,561)	(1,413)
Subsidiary preferred dividends	668	675	680
Impairment charges	0	0	143,321
Other, net	(3,425)	(575)	712
Actual income tax expense	<u>\$ 198,751</u>	<u>\$ 174,352</u>	<u>\$ 113,792</u>

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The following table provides the components of the net deferred tax liability from continuing operations at December 31:

	2011	2010
Deferred tax assets:		
Advances and contributions	\$ 475,280	\$ 463,694
Deferred investment tax credits	11,202	11,789
Other postretirement benefits	101,258	92,620
Tax losses and credits	284,636	327,128
Pension benefits	132,972	141,530
Unamortized debt discount, net	23,872	22,889
Other	13,308	8,429
	<u>1,042,528</u>	<u>1,068,079</u>
Valuation allowance	(20,701)	(22,733)
	<u>1,021,827</u>	<u>1,045,346</u>
Deferred tax liabilities:		
Utility plant, principally due to depreciation differences	1,958,044	1,846,338
Income taxes recoverable through rates	94,331	93,495
Deferred security costs	1,982	3,065
Deferred business services project expenses	4,573	4,566
Deferred other postretirement benefits	58,238	48,155
Deferred pension benefits	97,899	78,972
Other	95,557	81,005
	<u>2,310,624</u>	<u>2,155,596</u>
	<u>\$ (1,288,797)</u>	<u>\$ (1,110,250)</u>

At December 31, 2011 and 2010, the Company recorded federal net operating loss ("NOL") carryforwards of \$1,187,427 and \$1,185,337, respectively. The Company believes the federal NOL carryforwards are more likely than not to be recovered and require no valuation allowance. The Company evaluated its ability to fully utilize the existing federal NOL carryforwards in light of the RWE divestiture in November 2009. Under Internal Revenue Code ("I.R.C.") Section 382, an ownership change occurs if there is a greater than fifty percent (50%) change in equity ownership of a company over a three-year period determined by reference to the ownership of persons holding five percent (5%) or more of that company's equity securities. If a company undergoes an ownership change as defined by I.R.C. Section 382, the company's ability to utilize its pre-change NOL carryforwards to offset post-change income may be limited.

The Company believes that the limitation imposed by I.R.C. Section 382 generally should not preclude use of its federal NOL carryforwards, assuming the Company has sufficient taxable income in future carryforward periods to utilize those NOL carryforwards. The Company's federal NOL carryforwards do not begin expiring until 2024.

At December 31, 2011 and 2010, the Company had state NOLs of \$739,804 and \$714,674, respectively, a portion of which are offset by a valuation allowance because the Company does not believe these NOLs are more likely than not to be realized. The state NOL carryforwards will expire between 2012 and 2031.

At December 31, 2011 and 2010, the Company had Canadian NOL carryforwards of \$6,198 and \$5,398, respectively. The majority of these carryforwards are offset by a valuation allowance because the Company does not believe these NOLs are more likely than not to be realized. The Canadian NOL carryforwards will expire between 2014 and 2030.

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At December 31, 2011 and 2010, the Company had capital loss carryforwards for federal income tax purposes of \$4,357 and \$0, respectively. The Company has recognized a full valuation allowance for the capital loss carryforwards because the Company does not believe these losses are more likely than not to be recovered.

The Company files income tax returns in the United States federal jurisdiction and various state and foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state or local or non-U.S income tax examinations by tax authorities for years before 2005.

In March 2010, the Company filed refund claims of \$25,314. The refund claims are attributable to the carry back of Alternative Minimum Tax NOLs generated in 2008. These claims procedurally require approval by the Joint Committee of Taxation ("JCT"). The Company received the refund in April 2010. In August 2010, the IRS notified the Company that additional audit procedures were necessary to support the filing of the JCT report. The audit has not been concluded at December 31, 2011, and no adjustments have been proposed so far.

The Company has state income tax examinations in progress and does not expect material adjustments to result.

The Patient Protection and Affordable Care Act (the "PPACA") became law on March 23, 2010, and the Health Care and Education Reconciliation Act of 2010 became law on March 30, 2010, which makes various amendments to certain aspects of the PPACA (together, the "Acts"). The PPACA effectively changes the tax treatment of federal subsidies paid to sponsors of retiree health benefit plans that provide a benefit that is at least actuarially equivalent to the benefits under Medicare Part D. As a result of the Acts, these subsidy payments will effectively become taxable in tax years beginning after December 31, 2012.

Although this change does not take effect immediately, companies are required to recognize the full accounting impact in their financial statements in the period in which the legislation was enacted. As a result, the Company followed its original accounting for the underfunded status of the other postretirement benefits for the Medicare Part D adjustment and recorded a reduction in deferred tax assets and an increase in its regulatory assets amounting to \$16,979.

The following table summarizes the changes in the Company's gross liability, excluding interest and penalties, for unrecognized tax benefits:

Balance at January 1, 2010	\$	112,021
Increases in current period tax positions		7,434
Decreases due to lapse of statute of limitations		(1,141)
Balance at December 31, 2010		118,314
Increases in current period tax positions		46,961
Decreases in prior period measurement of tax positions		(6,697)
Balance at December 31, 2011	\$	<u>158,578</u>

The liability balance as of December 31, 2011 and 2010 does not include interest and penalties of \$214 and \$80, respectively, which is recorded as a component of income tax expense. The majority of the increased tax position is attributable to temporary differences. The increase in 2011 current period tax positions relates primarily to the Company's change in tax accounting method filed in 2008 for repair and maintenance costs on its utility assets. The Company does not anticipate material changes to its unrecognized tax benefits within the next year. If the Company sustains all of its positions at December 31, 2011 and 2010, an unrecognized tax benefit of \$6,644 and \$6,644, respectively, excluding interest and penalties, would impact the Company's effective tax rate.

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The following table summarizes the changes in the Company's valuation allowance:

Balance at January 1, 2009	\$	28,862
Increases in current period tax positions		2,778
Decreases in current period tax positions		(5,698)
Decreases in prior period tax positions		(321)
Balance at December 31, 2009	\$	25,621
Increases in current period tax positions		907
Decreases in current period tax positions		(2,740)
Balance at December 31, 2010	\$	23,788
Increases in current period tax positions		1,525
Decreases in current period tax positions		(3,734)
Balance at December 31, 2011	\$	<u>21,579</u>

Note 15: Employee Benefits

Pension and Other Postretirement Benefits

The Company maintains noncontributory defined benefit pension plans covering eligible non-union employees of its regulated utility and shared services operations. Benefits under the plans are based on the employee's years of service and compensation. The pension plans have been closed for most employees hired on or after January 1, 2006. Union employees hired on or after January 1, 2001 had their accrued benefit frozen and will be able to receive this benefit as a lump sum upon termination or retirement. Union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006 are provided with a 5.25% of base pay defined contribution plan.

The Company's funding policy is to contribute at least the minimum amount required by the Employee Retirement Income Security Act of 1974 and also an additional contribution if needed to avoid "at risk" status and benefit restrictions under the Pension Protection Act of 2006. The Company may also increase its contributions, if appropriate, to its tax and cash position and the plan's funded position. Pension plan assets are invested in a number of investments including equity and bond mutual funds, fixed income securities and guaranteed interest contracts with insurance companies.

Pension expense in excess of the amount contributed to the pension plans is deferred by certain regulated subsidiaries pending future recovery in rates charged for utility services as contributions are made to the plans. (See Note 7)

The Company also has several unfunded noncontributory supplemental non-qualified pension plans that provide additional retirement benefits to certain employees.

The Company maintains postretirement benefit plans providing varying levels of medical and life insurance to eligible retirees. The retiree welfare plans are closed for union employees hired on or after January 1, 2006. The plans had previously closed for non-union employees hired on or after January 1, 2002.

The Company's policy is to fund postretirement benefit costs for rate-making purposes. Plan assets are invested in equity and bond mutual funds.

The obligations of the plans are dominated by obligations for active employees. Because the timing of expected benefit payments is so far in the future and the size of the plan assets are small relative to the Company's assets, the investment strategy is to allocate a large portion of assets to equities, which the Company believes will provide the highest return over the long-term period. The fixed income assets are invested in long duration debt securities in order to better match the duration of the plan liability.

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The Company periodically conducts an asset liability modeling study to ensure the investment strategy is aligned with the profile of the obligations. The long-term goals are to maximize the plan funded status and minimize contributions and pension expense, while taking into account the potential volatility risks on each of these items.

None of the Company's securities are included in pension or other postretirement benefit plan assets.

The investment policy guidelines of the pension plan require that the fixed income portfolio has an overall weighted average credit rating of AA or better by Standard & Poor's and the minimum credit quality for fixed income securities must be BBB- or better. Up to 20% of the portfolio may be invested in collateralized mortgage obligations backed by the United States Government.

The fair values and asset allocations of pension plan assets at December 31, 2011, by asset category, follow:

Asset Category	Target Allocation 2012	Total	Quoted Prices	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Percentage of Plan Assets at December 31, 2011
			in Active Markets for Identical Assets (Level 1)			
Cash	—	\$ 9,794	\$ 9,794	—	—	—
Equity securities:						
U.S. large cap	36%	364,025	364,025	—	—	37%
U.S. small cap value	12%	119,996	116,748	\$ 3,248	—	12%
International	22%	202,917	26	100,745	\$ 102,146	21%
Fixed income securities:	30%					30%
U.S. Treasury and government bonds	—	61,278	61,278	—	—	—
Corporate bonds	—	48,564	2,487	46,077	—	—
Mortgage-backed securities	—	118,837	—	118,837	—	—
Guaranteed annuity contracts	—	55,657	—	9,229	46,428	—
Total	100%	\$ 981,068	\$ 554,358	\$ 278,136	\$ 148,574	100%

The following table presents a reconciliation of the beginning and ending balances of the fair value measurements using significant unobservable inputs (Level 3):

	Level 3
Balance, January 1, 2011	\$ 141,403
Actual return on assets	(3,425)
Transfers in(out)	10,596
Balance, December 31, 2011	<u>\$ 148,574</u>

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The fair values and asset allocations of pension plan assets at December 31, 2010, by asset category, follow:

<u>Asset Category</u>	<u>Target Allocation 2011</u>	<u>Total</u>	<u>Quoted Prices in Active Markets for Identical Assets (Level 1)</u>	<u>Significant Observable Inputs (Level 2)</u>	<u>Significant Unobservable Inputs (Level 3)</u>	<u>Percentage of Plan Assets at December 31, 2010</u>
Cash	—	\$ 6,467	\$ 6,467	—	—	—
Equity securities:						
U.S. large cap	36%	299,548	299,548	—	—	35%
U.S. small cap value	12%	113,356	113,356	—	—	13%
International	22%	190,330	682	\$ 94,363	\$ 95,285	22%
Fixed income securities:	30%					30%
U.S. Treasury and government bonds	—	63,469	63,469	—	—	—
Corporate Bonds	—	33,118	—	33,118	—	—
Mortgage-backed securities	—	99,478	—	99,478	—	—
Guaranteed annuity contracts	—	55,207	—	9,089	46,118	—
Total	100%	\$ 860,973	\$ 483,522	\$ 236,048	\$ 141,403	100%

The following table presents a reconciliation of the beginning and ending balances of the fair value measurements using significant unobservable inputs (Level 3):

	<u>Level 3</u>
Balance, January 1, 2010	\$ 124,938
Actual return on assets	20,381
Transfers in (out)	(3,916)
Balance, December 31, 2010	<u>\$ 141,403</u>

The Company's other postretirement benefit plans are partially funded and plan assets are invested in a manner consistent with the pension plan investment policy.

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The fair values and asset allocations of postretirement benefit plan assets at December 31, 2011, by asset category, follow:

<u>Asset Category</u>	<u>Target Allocation 2012</u>	<u>Total</u>	<u>Quoted Prices in Active Markets for Identical Assets (Level 1)</u>	<u>Significant Observable Inputs (Level 2)</u>	<u>Significant Unobservable Inputs (Level 3)</u>	<u>Percentage of Plan Assets at December 31, 2011</u>
Cash	—	\$ 10,196	\$ 10,196	—	—	—
Equity securities:						
U.S. large cap	36%	136,625	136,625	—	—	36%
U.S. small cap value	12%	52,092	50,720	\$ 1,372	—	14%
International	22%	78,294	45,537	32,757	—	20%
Fixed income securities:	30%					30%
U.S. Treasury securities	—	12,897	12,897	—	—	—
Corporate bonds	—	46,953	—	46,953	—	—
Mortgage-backed securities	—	45,613	—	45,613	—	—
Total	100%	\$ 382,670	\$ 255,975	\$ 126,695	—	100%

The fair values and asset allocations of postretirement benefit plan assets at December 31, 2010, by asset category, follow:

<u>Asset Category</u>	<u>Target Allocation 2011</u>	<u>Total</u>	<u>Quoted Prices in Active Markets for Identical Assets (Level 1)</u>	<u>Significant Observable Inputs (Level 2)</u>	<u>Significant Unobservable Inputs (Level 3)</u>	<u>Percentage of Plan Assets at December 31, 2010</u>
Cash	—	\$ 12,500	\$ 12,500	—	—	—
Equity securities:						
U.S. large cap	36%	131,775	131,775	—	—	35%
U.S. small cap value	12%	53,898	53,898	—	—	14%
International	22%	77,935	77,935	—	—	21%
Fixed income securities:	30%					30%
U.S. Treasury securities	—	16,025	16,025	—	—	—
Corporate Bonds	—	34,746	—	\$ 34,746	—	—
Mortgage-backed securities	—	47,524	—	47,524	—	—
Total	100%	\$ 374,403	\$ 292,133	\$ 82,270	—	100%

Valuation Techniques Used to Determine Fair Value

Cash—Cash and investments with maturities of three months or less when purchased, including certain short-term fixed-income securities, are considered cash and are included in the recurring fair value measurements hierarchy as Level 1.

Equity securities—With respect to equity securities, the trustees obtain prices from pricing services, whose prices are obtained from direct feeds from market exchanges, which the Company is able to independently corroborate. Equity securities are valued based on quoted prices in active markets and categorized as Level 1.

Fixed-income securities—U.S. Treasury securities and government bonds have been categorized in Level 1 because they trade in highly-liquid and transparent markets that the Company can corroborate. The fair values of corporate bonds, mortgage backed securities and a certain guaranteed annuity contract are based on evaluated prices that reflect observable market information, such as actual trade information of similar securities and have

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been categorized as Level 2 because the valuations are calculated using models which utilize actively traded market data that the Company can corroborate. Certain other guaranteed annuity contracts are invested in a commingled fund and categorized as Level 3 because the investments are not publicly quoted. The fund administrator values the fund using the net asset value per fund share, derived from the quoted prices in active markets of the underlying securities. Since these valuation inputs are not highly observable, the commingled funds have been categorized as Level 3.

In 2011, after a review of the underlying pension investments, the Company began classifying certain international equity securities as Level 2 and Level 3 and reclassified the prior years' presentations to conform to the 2011 presentation.

The following table provides a rollforward of the changes in the benefit obligation and plan assets for the most recent two years for all plans combined:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Change in benefit obligation				
Benefit obligation at January 1	\$ 1,285,456	\$ 1,128,162	\$ 590,187	\$ 548,139
Service cost	33,641	30,675	13,938	14,663
Interest cost	69,047	67,602	31,219	32,149
Plan participants' contributions	—	—	2,241	2,307
Amendments	0	3,762	0	(8,195)
Actuarial (gain) loss	55,743	93,399	4,826	23,764
Gross benefits paid	(41,933)	(38,144)	(23,824)	(23,989)
Federal subsidy	—	—	1,779	1,349
Benefit obligation at December 31	<u>\$ 1,401,954</u>	<u>\$ 1,285,456</u>	<u>\$ 620,366</u>	<u>\$ 590,187</u>
Change in Plan Assets				
Fair value of plan assets at January 1	\$ 860,973	\$ 695,520	\$ 374,403	\$ 312,042
Actual return on plan assets	2,529	105,078	2,619	45,305
Employer contributions	159,499	98,519	27,231	38,738
Plan participants' contributions	—	—	2,241	2,307
Benefits paid	(41,933)	(38,144)	(23,824)	(23,989)
Fair value of plan assets at December 31	<u>\$ 981,068</u>	<u>\$ 860,973</u>	<u>\$ 382,670</u>	<u>\$ 374,403</u>
Funded status at December 31	\$ (420,886)	\$ (424,483)	\$ (237,696)	\$ (215,784)
Amounts recognized in the balance sheet consist of:				
Current liability	\$ (1,909)	\$ (2,097)	\$ (33)	\$ (33)
Noncurrent liability	(418,977)	(422,386)	(237,663)	(215,751)
Net amount recognized	<u>\$ (420,886)</u>	<u>\$ (424,483)</u>	<u>\$ (237,696)</u>	<u>\$ (215,784)</u>
Asset (liability) of discontinued operations included in net amount recognized above	<u>\$ (6,979)</u>	<u>\$ (8,873)</u>	<u>\$ (577)</u>	<u>\$ (534)</u>

The following table provides the components of the Company's accumulated other comprehensive income and regulatory assets that have not been recognized as components of periodic benefit costs as of December 31:

	Pension Benefits		Other Benefits	
	2011	2010	2011	2010
Net actuarial loss (gain)	\$ 409,129	\$ 302,357	\$ 164,305	\$ 140,453
Prior service cost (credit)	5,858	6,580	(16,864)	(18,788)
Net amount recognized	<u>\$ 414,987</u>	<u>\$ 308,937</u>	<u>\$ 147,441</u>	<u>\$ 121,665</u>
Regulatory assets	\$ 248,663	\$ 184,937	\$ 147,441	\$ 121,665
Accumulated other comprehensive income	<u>166,324</u>	<u>124,000</u>	<u>—</u>	<u>—</u>
	<u>\$ 414,987</u>	<u>\$ 308,937</u>	<u>\$ 147,441</u>	<u>\$ 121,665</u>

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At December 31, 2011 and 2010, the projected benefit obligation, accumulated benefit obligation and fair value of plan assets for pension plans with a projected obligation in excess of plan assets were as follows:

	Projected Benefit Obligation Exceeds the Fair Value of Plans' Assets	
	2011	2010
Projected benefit obligation	\$ 1,402,000	\$ 1,285,000
Fair value of plan assets	981,000	861,000

	Accumulated Benefit Obligation Exceeds the Fair Value of Plans' Assets	
	2011	2010
Accumulated benefit obligation	\$ 1,257,000	\$ 1,138,000
Fair value of plan assets	981,000	861,000

The accumulated postretirement benefit obligation exceeds plan assets for all of the Company's other postretirement benefit plans.

In August 2006, the Pension Protection Act ("PPA") was signed into law in the U.S. The PPA replaces the funding requirements for defined benefit pension plans by requiring that defined benefit plans contribute to 100% of the current liability funding target over seven years. Defined benefit plans with a funding status of less than 80% of the current liability are defined as being "at risk" and additional funding requirements and benefit restrictions may apply. The PPA was effective for the 2008 plan year with short-term phase-in provisions for both the funding target and at-risk determination. The Company's qualified defined benefit plan is currently funded above the at-risk threshold, and therefore the Company expects that the plans will not be subject to the "at risk" funding requirements of the PPA. The Company is proactively monitoring the plan's funded status and projected contributions under the new law to appropriately manage the potential impact on cash requirements.

Minimum funding requirements for the qualified defined benefit pension plan are determined by government regulations and not by accounting pronouncements. The Company plans to contribute amounts at least equal to the minimum required contributions in 2012 to the qualified pension plans. The Company plans to contribute its 2012 other postretirement benefit cost for rate-making purposes.

Information about the expected cash flows for the pension and postretirement benefit plans is as follows:

	Pension Benefits	Other Benefits
2012 expected employer contributions		
To plan trusts	\$ 126,700	\$ 29,983
To plan participants	1,909	33

The Company made 2012 contributions to fund pension benefits and other benefits of \$32,931 and \$7,496, respectively, through February 2012.

The following table reflects the net benefits expected to be paid from the plan assets or the Company's assets:

	Pension Benefits		Other Benefits	
	Expected Benefit Payments		Expected Benefit Payments	Expected Federal Subsidy Payments
2012	\$ 47,139	\$	26,188	\$ 1,814
2013	53,268		28,794	1,994
2014	59,412		31,641	2,161
2015	65,742		34,618	2,328
2016	72,373		37,581	2,515
2017—2021	458,798		228,379	15,770

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Because the above amounts are net benefits, plan participants' contributions have been excluded from the expected benefits.

Accounting for pensions and other postretirement benefits requires an extensive use of assumptions about the discount rate, expected return on plan assets, the rate of future compensation increases received by the Company's employees, mortality, turnover and medical costs. Each assumption is reviewed annually. The assumptions are selected to represent the average expected experience over time and may differ in any one year from actual experience due to changes in capital markets and the overall economy. These differences will impact the amount of pension and other postretirement benefit expense that the Company recognizes.

The significant assumptions related to the Company's pension and other postretirement benefit plans are as follows:

	Pension Benefits			Other Benefits		
	2011	2010	2009	2011	2010	2009
Weighted-average assumptions used to determine December 31 benefit obligations						
Discount rate	5.02%	5.32%	5.93%	5.05%	5.27%	5.82%
Rate of compensation increase	3.25%	3.50%	4.00%	N/A	N/A	N/A
Medical trend	N/A	N/A	N/A	graded from 7.5% in 2012 to 5% in 2019+	graded from 8% in 2011 to 5% in 2017+	graded from 8.5% in 2010 to 5% in 2017+
Weighted-average assumptions used to determine net periodic cost						
Discount rate	5.32%	5.93%	6.12%	5.27%	5.82%	6.09%
Expected return on plan assets	7.90%	7.90%	7.90%	7.60%	7.60%	7.60%
Rate of compensation increase	3.50%	4.00%	4.00%	N/A	N/A	N/A
Medical trend	N/A	N/A	N/A	graded from 8% in 2011 to 5% in 2017+	graded from 8.5% in 2010 to 5% in 2017+	graded from 8% in 2009 to 5% in 2015+

N/A—Assumption is not applicable.

The discount rate assumption was determined for the pension and postretirement benefit plans independently. At year end 2011, the Company began using an approach that approximates the process of settlement of obligations tailored to the plans' expected cash flows by matching the plans' cash flows to the coupons and expected maturity values of individually selected bonds. The yield curve was developed for a universe containing the majority of U.S.-issued Aa-graded corporate bonds, all of which were non callable (or callable with make-whole provisions). Historically, for each plan, the discount rate was developed as the level equivalent rate that would produce the same present value as that using spot rates aligned with the projected benefit payments.

The expected long-term rate of return on plan assets is based on historical and projected rates of return for current and planned asset classes in the plans' investment portfolios. Assumed projected rates of return for each of the plans' projected asset classes were selected after analyzing historical experience and future expectations of the returns and volatility of the various asset classes. Based on the target asset allocation for each asset class, the overall expected rate of return for the portfolio was developed, adjusted for historical and expected experience of active portfolio management results compared to the benchmark returns and for the effect of expenses paid from plan assets. The Company's pension expense increases as the expected return on assets decreases.

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Assumed health care cost trend rates have a significant effect on the amounts reported for the other postretirement benefit plans. The health care cost trend rate is based on historical rates and expected market conditions. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	One- Percentage- Point Increase	One- Percentage- Point Decrease
Effect on total of service and interest cost components	\$ 7,145	\$ 5,838
Effect on other postretirement benefit obligation	\$ 83,456	\$ 69,318

The following table provides the components of net periodic benefit costs for the years ended December 31:

	2011	2010	2009
Components of net periodic pension benefit cost			
Service cost	\$ 33,641	\$ 30,675	\$ 28,426
Interest cost	69,047	67,602	62,919
Expected return on plan assets	(72,109)	(56,751)	(42,224)
Amortization of:			
Prior service cost (credit)	722	322	182
Actuarial (gain) loss	18,551	17,902	23,968
Net periodic pension benefit cost	<u>\$ 49,852</u>	<u>\$ 59,750</u>	<u>\$ 73,271</u>
Other changes in plan assets and benefit obligations recognized in other comprehensive income, net of tax			
Amortization of prior service credit (cost)	\$ (175)	\$ (79)	\$ (46)
Current year actuarial (gain) loss	30,497	11,836	(9,981)
Amortization of actuarial gain (loss)	(4,504)	(4,368)	(5,994)
Total recognized in other comprehensive income	<u>\$ 25,818</u>	<u>\$ 7,389</u>	<u>\$ (16,021)</u>
Total recognized in net periodic benefit cost and comprehensive income	<u>\$ 75,670</u>	<u>\$ 67,139</u>	<u>\$ 57,250</u>
Components of net periodic other postretirement benefit cost			
Service cost	\$ 13,938	\$ 14,663	\$ 13,172
Interest cost	31,219	32,149	29,180
Expected return on plan assets	(28,779)	(24,372)	(18,638)
Amortization of:			
Transition obligation (asset)	0	173	173
Prior service cost (credit)	(1,924)	(1,180)	(1,180)
Actuarial (gain) loss	7,133	8,159	9,155
Net periodic other postretirement benefit cost	<u>\$ 21,587</u>	<u>\$ 29,592</u>	<u>\$ 31,862</u>

The Company's policy is to recognize curtailments when the total expected future service of plan participants is reduced by greater than 10% due to an event that results in terminations and/or retirements.

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The estimated amounts that will be amortized from accumulated other comprehensive income and regulatory assets into net periodic benefit cost in 2012 are as follows:

	Pension Benefits	Other Benefits
Actuarial (gain) loss	\$ 29,923	\$ 9,537
Prior service cost (credit)	722	(1,914)
Total	\$ 30,645	\$ 7,623

Savings Plans for Employees

The Company maintains 401(k) savings plans that allow employees to save for retirement on a tax-deferred basis. Employees can make contributions that are invested at their direction in one or more funds. The Company makes matching contributions based on a percentage of an employee's contribution, subject to certain limitations. Due to the Company's discontinuing new entrants into the defined benefit pension plan, on January 1, 2006 the Company began providing an additional 5.25% of base pay defined contribution benefit for union employees hired on or after January 1, 2001 and non-union employees hired on or after January 1, 2006. The Company expensed contributions to the plans totaling \$8,997 for 2011, \$8,651 for 2010, and \$8,082 for 2009, respectively. All of the Company's contributions are invested in one or more funds at the direction of the employee.

Note 16: Commitments and Contingencies

The Company is also routinely involved in legal actions incident to the normal conduct of its business. At December 31, 2011, the Company has accrued approximately \$2,900 as probable costs and it is reasonably possible that additional losses could range up to \$9,700 for these matters. For certain matters, the Company is unable to estimate possible losses. The Company believes that damages or settlements, if any, recovered by plaintiffs in such claims or actions will not have a material adverse effect on the Company's results of operations, financial position or cash flows.

The Company enters into agreements for the provision of services to water and wastewater facilities for the United States military, municipalities and other customers. The Company's military services agreements expire between 2051 and 2060 and have remaining performance commitments as measured by estimated remaining contract revenue of \$2,037,000 at December 31, 2011. The military contracts are subject to customary termination provisions held by the U.S. Federal Government prior to the agreed upon contract expiration. The Company's Operations and Maintenance agreements with municipalities and other customers expire between 2012 and 2048 and have remaining performance commitments as measured by estimated remaining contract revenue of \$1,076,000 at December 31, 2011. Some of the Company's long-term contracts to operate and maintain a municipality's, federal government's or other party's water or wastewater treatment and delivery facilities include responsibility for certain maintenance for some of those facilities, in exchange for an annual fee. Unless specifically required to perform certain maintenance activities, the maintenance costs are recognized when the maintenance is performed.

Commitments have been made in connection with certain construction programs. The estimated capital expenditures required under legal and binding contractual obligations amounted to \$171,878 at December 31, 2011.

The Company's regulated subsidiaries maintain agreements with other water purveyors for the purchase of water to supplement their water supply. The Company's subsidiaries purchased water expense under these types of agreements amounted to approximately \$104,384, \$103,898 and \$96,053 during the years ended December 31, 2011, 2010 and 2009, respectively. The estimated annual commitment related to the minimum quantities of water purchased is expected to approximate \$48,916 in 2012, \$47,576 in 2013, \$47,452 in 2014, \$47,404 in 2015, \$43,439 in 2016 and \$448,920 thereafter.

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Note 17: Earnings (Loss) per Common Share

Earnings per share is calculated using the two-class method. The two-class method is an earnings allocation formula that determines earnings per share for each class of common stock and participating security. The Company has participating securities related to restricted stock units, granted under the Company's 2007 Omnibus Equity Compensation Plan, that earn dividend equivalents on an equal basis with common shares. In applying the two-class method, undistributed earnings are allocated to both common shares and participating securities. There were 21 participating securities that were not included in the basic net loss per common share calculation at December 31, 2009 because they were anti-dilutive. The following is a reconciliation of the Company's income (loss) from continuing operations, income (loss) from discontinued operations and net income (loss) and weighted average common shares outstanding for calculating basic net earnings (loss) per share:

	<u>Years Ended December 31,</u>		
	<u>2011</u>	<u>2010</u>	<u>2009</u>
Basic			
Income (loss) from continuing operations	\$ 304,929	\$ 255,072	\$ (219,998)
Income (loss) from discontinued operations, net of tax	4,684	12,755	(13,085)
Net income (loss)	309,613	267,827	(233,083)
Less: Distributed earnings to common shareholders	158,708	150,724	137,597
Less: Distributed earnings to participating securities	68	51	0
Undistributed earnings	150,837	117,052	(370,680)
Undistributed earnings allocated to common shareholders	150,772	117,014	(370,680)
Undistributed earnings allocated to participating securities	65	38	0
Total income (loss) from continuing operations available to common shareholders, basic	\$ 304,796	\$ 254,983	\$ (219,998)
Total income (loss) available to common shareholders, basic	<u>\$ 309,480</u>	<u>\$ 267,738</u>	<u>\$ (233,083)</u>
Weighted average common shares outstanding, basic	<u>175,484</u>	<u>174,833</u>	<u>168,164</u>
Basic earnings (loss) per share: (a)			
Income (loss) from continuing operations	\$ 1.74	\$ 1.46	\$ (1.31)
Income (loss) from discontinued operations, net of tax	<u>\$ 0.03</u>	<u>\$ 0.07</u>	<u>\$ (0.08)</u>
Net income (loss)	<u>\$ 1.76</u>	<u>\$ 1.53</u>	<u>\$ (1.39)</u>

(a) Amounts may not sum due to rounding.

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Diluted earnings (loss) per common share is based on the weighted average number of common shares outstanding adjusted for the dilutive effect of common stock equivalents related to the restricted stock units, stock options, and employee stock purchase plan. The dilutive effect of the common stock equivalents is calculated using the treasury stock method and expected proceeds on vesting of the restricted stock units, exercise of the stock options and purchases under the employee stock purchase plan. The following is a reconciliation of the Company's income (loss) from continuing operations, income (loss) from discontinued operations and net income (loss) and weighted average common shares outstanding for calculating diluted earnings (loss) per share:

	Years Ended December 31,		
	2011	2010	2009
Diluted			
Total income (loss) from continuing operations available to common shareholders, basic	\$ 304,796	\$ 254,983	\$ (219,998)
Income (loss) from discontinued operations, net of tax	4,684	12,755	(13,085)
Total income (loss) available to common shareholders, basic	309,480	267,738	(233,083)
Undistributed earnings allocated to participating securities	65	38	0
Total income (loss) from continuing operations available to common shareholders, diluted	\$ 304,861	\$ 255,021	\$ (219,998)
Total income (loss) available to common shareholders, diluted	<u>\$ 309,545</u>	<u>\$ 267,776</u>	<u>\$ (233,083)</u>
Weighted average common shares outstanding, basic	175,484	174,833	168,164
Restricted stock units	556	264	0
Stock options	490	26	0
Employee stock purchase plan	1	1	0
Weighted average common shares outstanding, diluted	<u>176,531</u>	<u>175,124</u>	<u>168,164</u>
Diluted earnings per share: (a)			
Income (loss) from continuing operations	\$ 1.73	\$ 1.46	\$ (1.31)
Income (loss) from discontinued operations, net of tax	\$ 0.03	\$ 0.07	\$ (0.08)
Net income (loss)	<u>\$ 1.75</u>	<u>\$ 1.53</u>	<u>\$ (1.39)</u>

(a) Amounts may not sum due to rounding.

The following potentially dilutive common stock equivalents were not included in the earnings (loss) per share calculations for the years ended December 31 because they were anti-dilutive:

	2011	2010	2009
Stock options	711	1,781	2,265
Stock options where certain performance conditions were not met	0	0	459
Restricted stock units	0	0	258
Restricted stock units where certain performance conditions were not met	22	69	144
Employee stock purchase plan	0	0	32

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Note 18: Fair Values of Financial Instruments

The following methods and assumptions were used by the Company in estimating its fair value disclosures for financial instruments:

Current assets and current liabilities: The carrying amounts reported in the Consolidated Balance Sheets for current assets and current liabilities, including revolving credit debt, due to the short-term maturities and variable interest rates, approximate their fair values.

Preferred stock with mandatory redemption requirements and long-term debt: The fair values of preferred stock with mandatory redemption requirements and long-term debt are determined by a valuation model which is based on a conventional discounted cash flow methodology and utilizes assumptions of current market rates. As a majority of the Company's debts do not trade in active markets, the Company calculated a base yield curve using a risk-free rate (a U.S. Treasury securities yield curve) plus a credit spread that is based on the following two factors: an average of the Company's own publicly-traded debt securities and the current market rates for U.S. Utility BBB+ debt securities. The Company used these yield curve assumptions to derive a base yield and then adjusted the base yield for specific features of the debt securities of call features, coupon tax treatment and collateral.

The carrying amounts (including fair value adjustments previously recognized in acquisition purchase accounting) and fair values of the financial instruments are as follows:

<u>As of December 31, 2011</u>	<u>Carrying Amount</u>	<u>Fair Value</u>
Preferred stocks with mandatory redemption requirements	\$ 22,036	\$ 26,458
Long-term debt (excluding capital lease obligations)	5,366,642	6,230,547
<u>As of December 31, 2010</u>	<u>Carrying Amount</u>	<u>Fair Value</u>
Preferred stocks with mandatory redemption requirements	\$ 22,794	\$ 25,475
Long-term debt (excluding capital lease obligations)	5,424,492	5,841,448

Fair Value Measurements

To increase consistency and comparability in fair value measurements, FASB guidance establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels as follows:

- Level 1—quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access as of the reporting date. Financial assets and liabilities utilizing Level 1 inputs include active exchange-traded equity securities, exchange-based derivatives, mutual funds and money market funds.
- Level 2—inputs other than quoted prices included within Level 1 that are directly observable for the asset or liability or indirectly observable through corroboration with observable market data. Financial assets and liabilities utilizing Level 2 inputs include fixed income securities, non-exchange-based derivatives, commingled investment funds not subject to purchase and sale restrictions and fair-value hedges.
- Level 3—unobservable inputs, such as internally-developed pricing models for the asset or liability due to little or no market activity for the asset or liability. Financial assets and liabilities utilizing Level 3 inputs include infrequently-traded non-exchange-based derivatives and commingled investment funds subject to purchase and sale restrictions.

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Recurring Fair Value Measurements

The following table presents assets and liabilities measured and recorded at fair value on a recurring basis and their level within the fair value hierarchy as of December 31, 2011 and 2010, respectively:

Recurring Fair Value Measures	At Fair Value as of December 31, 2011			
	Level 1	Level 2	Level 3	Total
Assets:				
Restricted funds	\$ 57,941	—	—	\$ 57,941
Rabbi trust investments	—	\$ 518	—	518
Deposits	2,287	—	—	2,287
Mark-to-market derivative asset	—	5,824	—	5,824
Total assets	<u>60,228</u>	<u>6,342</u>	<u>—</u>	<u>66,570</u>
Liabilities:				
Deferred compensation obligation	—	9,036	—	9,036
Total liabilities	<u>—</u>	<u>9,036</u>	<u>—</u>	<u>9,036</u>
Total net assets (liabilities)	<u>\$ 60,228</u>	<u>\$ (2,694)</u>	<u>—</u>	<u>\$ 57,534</u>

Recurring Fair Value Measures	At Fair Value as of December 31, 2010			
	Level 1	Level 2	Level 3	Total
Assets:				
Restricted funds	\$ 120,784	—	—	\$ 120,784
Rabbi trust investments	—	\$ 1,552	—	1,552
Deposits	1,381	—	—	1,381
Total assets	<u>122,165</u>	<u>1,552</u>	<u>—</u>	<u>\$ 123,717</u>
Liabilities:				
Deferred compensation obligation	—	9,180	—	9,180
Mark-to-market derivative liability	—	898	—	898
Total liabilities	<u>—</u>	<u>10,078</u>	<u>—</u>	<u>10,078</u>
Total net assets (liabilities)	<u>\$ 122,165</u>	<u>\$ (8,526)</u>	<u>—</u>	<u>\$ 113,639</u>

Restricted funds—The Company's restricted funds primarily represent proceeds received from financings for the construction and capital improvement of facilities and from customers for future services under operations and maintenance projects. The proceeds of these financings are held in escrow until the designated expenditures are incurred. Restricted funds expected to be released within twelve months subsequent to year end are classified as current.

Rabbi trust investments—The Company's rabbi trust investments consist primarily of fixed income investments from which supplemental executive retirement plan benefits are paid. The Company includes these assets in other long-term assets.

Deposits—Deposits includes escrow funds and certain other deposits held in trust. The Company includes cash deposits in other current assets.

Deferred compensation obligations—The Company's deferred compensation plans allow participants to defer certain cash compensation into notional investment accounts. The Company includes such plans in other long-term liabilities. The value of the Company's deferred compensation obligations is based on the market value of the participants' notional investment accounts. The notional investments are comprised primarily of mutual funds, which are based on observable market prices.

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Mark-to-market derivative asset and liability-The Company utilizes fixed-to-floating interest-rate swaps, typically designated as fair-value hedges, to achieve a targeted level of variable-rate debt as a percentage of total debt. The Company uses a calculation of future cash inflows and estimated future outflows, which are discounted, to determine the current fair value. Additional inputs to the present value calculation include the contract terms, counterparty credit risk, interest rates and market volatility.

See Note 15 for the Company's fair value of qualified pension and postretirement welfare plans' assets.

Non-recurring Fair Value Measurements

As discussed in Note 8, the Company recognized continuing operations goodwill impairment charges of \$0, \$0, and \$428,036 for the years ended December 31, 2011, 2010 and 2009, respectively. The Company's goodwill valuation model includes significant unobservable inputs and falls within Level 3 of the fair value hierarchy.

Note 19: Operating Leases

The Company has entered into operating leases involving certain facilities and equipment. Rental expenses of continuing operations under operating leases were \$32,752 for 2011, \$36,264 for 2010 and \$34,862 for 2009. The operating leases for facilities will expire over the next 20 years and the operating leases for equipment will expire over the next five years. Certain operating leases have renewal options ranging from one to five years.

At December 31, 2011, the minimum annual future rental commitment under operating leases that have initial or remaining non-cancelable lease terms in excess of one year are \$21,528 in 2012, \$17,987 in 2013, \$14,833 in 2014, \$10,877 in 2015, \$9,172 in 2016 and \$101,472 thereafter.

The Company has a series of agreements with various public entities (the "Partners") to establish certain joint ventures, commonly referred to as "public-private partnerships." Under the public-private partnerships, the Company constructed utility plant, financed by the Company, and the Partners constructed utility plant (connected to the Company's property), financed by the Partners. The Company agreed to transfer and convey some of its real and personal property to the Partners in exchange for an equal principal amount of Industrial Development Bonds ("IDBs"), issued by the Partners under a state Industrial Development Bond and Commercial Development Act. The Company leased back the total facilities, including portions funded by both the Company and the Partners, under leases for a period of 40 years.

The leases related to the portion of the facilities funded by the Company have required payments from the Company to the Partners that approximate the payments required by the terms of the IDBs from the Partners to the Company (as the holder of the IDBs). As the ownership of the portion of the facilities constructed by the Company will revert back to the Company at the end of the lease, the Company has recorded these as capital leases. The lease obligation and the receivable for the principal amount of the IDBs are presented by the Company on a net basis. The carrying value of the facilities funded by the Company recognized as a capital lease asset was \$159,211 and \$159,707 at December 31, 2011 and 2010, respectively, which is presented within utility plant. The future payments under the lease obligations are equal to and offset by the payments receivable under the IDBs.

At December 31, 2011, the minimum annual future rental commitment under the operating leases for the portion of the facilities funded by the Partners that have initial or remaining non-cancelable lease terms in excess of one year included in the preceding minimum annual rental commitments are \$3,629 in 2012, \$3,668 in 2013, \$3,727 in 2014 through 2016, and \$82,620 thereafter.

Note 20: Related Party Transactions

One of the Company's Directors was employed by an electrical utility that supplies electricity and electrical services to the Company's subsidiaries in Ohio, Pennsylvania, and New Jersey. The Company purchased, from

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various subsidiaries of this electrical utility, approximately \$8,558 of such services in 2009. The Director retired from that electrical utility effective March 31, 2010. The Company purchased, from various subsidiaries of this electrical utility, approximately \$3,225 of such services in the first quarter of 2010.

Note 21: Segment Information

The Company has two operating segments referred to as the Regulated Businesses and Market-Based Operations segments. The Company's chief operating decision maker regularly reviews the operating results of the Regulated Businesses and Market-Based Operations segments to assess segment performance and allocate resources. The evaluation of segment performance and the allocation of resources are based on several measures. The measure that is most consistent with that used by management is income from continuing operations before income tax.

The Regulated Businesses segment includes the Company's 17 utility subsidiaries in continuing operations that provide water and wastewater services to customers in 16 U.S. states. With the exception of one company, each of these public utility subsidiaries is subject to regulation by public utility commissions and local governments. In addition to providing similar products and services and being subject to the public utility regulatory environment, each of the regulated subsidiaries has similar economic characteristics, production processes, types and classes of customers and water distribution or wastewater collection processes. Each of these companies is also subject to both federal and state regulation regarding the quality of water distributed and the discharge of wastewater residuals.

The Market-Based Operations segment is comprised of market-based businesses that provide a broad range of market-based water and wastewater services and products including homeowner water and sewer line maintenance services, water and wastewater facility operations and maintenance services, granular carbon technologies and products for cleansing water and wastewater, wastewater residuals management services and water and wastewater facility engineering services.

The accounting policies of the segments are the same as those described in the summary of significant accounting policies (see Note 2). The Regulated Businesses and Market-Based Operations segment information includes intercompany costs that are allocated by American Water Works Service Company, Inc. and intercompany interest that is charged by AWCC, which are eliminated to reconcile to the consolidated results of operations. Inter-segment revenues, which are primarily recorded at cost plus mark-up that approximates current market prices, include carbon regeneration services and leased office space, furniture and equipment provided by the Company's market-based subsidiaries to its regulated subsidiaries. Other includes corporate costs that are not allocated to the Company's subsidiaries, eliminations of inter-segment transactions, fair value adjustments and associated income and deductions related to the Acquisitions that have not been allocated to the segments for evaluation of segment performance and allocation of resource purposes. The adjustments related to the Acquisitions are reported in Other, as they are excluded from segment performance measures evaluated by management. The following table includes the Company's summarized segment information:

	As of or for the Year Ended			
	December 31, 2011			
	Regulated Businesses	Market-Based Operations	Other	Consolidated
Net operating revenues	\$ 2,368,891	\$ 327,815	\$ (30,470)	\$ 2,666,236
Depreciation and amortization	321,540	6,822	23,459	351,821
Total operating expenses, net	1,609,276	290,854	(37,030)	1,863,100
Income (loss) from continuing operations before income taxes	535,445	39,250	(71,015)	503,680
Total assets	12,843,820	280,862	1,651,709	14,776,391
Assets of discontinued operations (included in total assets above)	904,391	0	25,467	929,858
Capital expenditures	920,210	4,648	0	924,858
Capital expenditures of discontinued operations (included in above)	21,052	86	0	21,138

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	As of or for the Year Ended			
	December 31, 2010			
	Regulated Businesses	Market-Based Operations	Other	Consolidated
Net operating revenues	\$ 2,285,656	\$ 294,723	\$ (25,344)	\$ 2,555,035
Depreciation and amortization	301,087	7,014	22,163	330,264
Total operating expenses, net	1,587,963	269,060	(30,110)	1,826,913
Income (loss) from continuing operations before income taxes	478,629	30,443	(79,648)	429,424
Total assets	12,290,798	240,718	1,554,730	14,086,246
Assets of discontinued operations (included in total assets above)	911,905	6,590	19,210	937,705
Capital expenditures	758,150	7,486	0	765,636
Capital expenditures of discontinued operations (included in above)	26,725	143	0	26,868

	As of or for the Year Ended			
	December 31, 2009			
	Regulated Businesses	Market-Based Operations	Other	Consolidated
Net operating revenues	\$ 2,076,563	\$ 238,180	\$ (24,297)	\$ 2,290,446
Depreciation and amortization	286,390	5,306	18,178	309,874
Impairment charge	0	0	428,036	428,036
Total operating expenses, net	1,497,453	217,643	391,515	2,106,611
Income (loss) from continuing operations before income taxes	371,919	25,168	(503,293)	(106,206)
Total assets	11,673,685	246,201	1,539,482	13,459,368
Assets of discontinued operations (included in total assets above)	905,938	9,333	17,504	932,775
Capital expenditures	779,428	5,837	0	785,265
Capital expenditures of discontinued operations (included in above)	43,078	111	0	43,189

Note 22: Unaudited Quarterly Data

The following table sets forth certain supplemental unaudited consolidated quarterly financial data for each of the four quarters in the years ended December 31, 2011 and 2010, respectively. The operating results for any quarter are not indicative of results that may be expected for a full year or any future periods.

During the fourth quarter of 2011, the Company discovered errors in the Company's calculation of gain or loss on discontinued operations that originated in the first and second quarters of 2011. As a result, the Company recorded an after-tax charge totaling \$24,555 to reduce the net asset values of those businesses, which included associated parent company goodwill, to their net realizable values. This charge was recognized within discontinued operations and net income and included in results for the full year ended December 31, 2011. The write-downs consisted of \$21,099 recognized as of March 31, and \$3,456 recognized as of June 30 as reflected in the table below. Management does not consider these write-downs to constitute a triggering event for the balance of the Company's goodwill of continuing operations. In addition, the adjustment had no impact on income from continuing operations or to the cash flows from operations or total cash flows.

Based on the materiality guidelines contained in SEC Staff Accounting Bulletin No. 99, "Materiality" and Topic 5.F of the Codification of Staff Accounting Bulletins, "Accounting Changes Not Retroactively Applied Due to Immateriality," the Company concluded that the adjustments to correct the errors were not material to its financial statements for the three months ended March 31, 2011 and June 30, 2011. Because the effect of the adjustments were not material to any previously issued financial statements, the Company determined not to

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amend its previously filed Quarterly Reports on Form 10-Q for the quarters ended March 31, 2011 and June 30, 2011; instead, the Company will make corresponding adjustments to prior period financial statements, as appropriate, the next time those financial statements are filed.

2011	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(In thousands, except per share data)			
Operating revenues	\$ 596,715	\$ 668,873	\$ 760,869	\$ 639,779
Operating income	143,250	201,395	281,408	177,083
Income from continuing operations	40,699	74,817	128,495	60,918
Net income	26,233	81,110	137,422	64,848
Basic earnings per common share:				
Income from continuing operations	\$ 0.23	\$ 0.43	\$ 0.73	\$ 0.35
Net income	\$ 0.15	\$ 0.46	\$ 0.78	\$ 0.37
Diluted earnings per common share:				
Income from continuing operations	\$ 0.23	\$ 0.42	\$ 0.73	\$ 0.34
Net income	\$ 0.15	\$ 0.46	\$ 0.78	\$ 0.37
2010	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(In thousands, except per share data)			
Operating revenues	\$ 554,205	\$ 630,761	\$ 744,296	\$ 625,773
Operating income	123,831	188,367	266,480	149,444
Income from continuing operations	29,328	68,071	119,327	38,346
Net income	30,808	72,751	124,114	40,154
Basic earnings per common share:				
Income from continuing operations	\$ 0.17	\$ 0.39	\$ 0.68	\$ 0.22
Net income	\$ 0.18	\$ 0.42	\$ 0.71	\$ 0.23
Diluted earnings per common share:				
Income from continuing operations	\$ 0.17	\$ 0.39	\$ 0.68	\$ 0.22
Net income	\$ 0.18	\$ 0.42	\$ 0.71	\$ 0.23

Amounts may not sum due to rounding; per share amounts may not sum due to changes in shares outstanding during the year.

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ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

American Water Works Company, Inc. maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in its reports filed or submitted under the Securities Exchange Act of 1934 ("the Exchange Act") is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding required disclosure.

Our management, including the Chief Executive Officer and the Chief Financial Officer, conducted an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) of the Exchange Act) as of December 31, 2011 pursuant to 15d-15(e) under the Exchange Act.

Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2011, our disclosure controls and procedures were effective at a reasonable level of assurance. Our disclosure controls and procedures are designed to provide reasonable assurance that the information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is a process designed by or under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that: (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management, including our Chief Executive Officer and the Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting, as of December 31, 2011, using the criteria described in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

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Based on our evaluation under the framework in Internal Control—Integrated Framework issued by COSO, our management concluded that our internal control over financial reporting was effective as of December 31, 2011.

The effectiveness of our internal control over financial reporting as of December 31, 2011 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report appearing in Part II, Item 8 of this Annual Report on Form 10-K.

ITEM 9B. OTHER INFORMATION

None.

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PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS OF THE REGISTRANT AND CORPORATE GOVERNANCE

The information required by this item and not given below, is incorporated by reference in the Company's Proxy Statement for the 2012 Annual Meeting of Stockholders, to be filed with the Securities and Exchange Commission within 120 days following the end of the fiscal year covered by this report, under the captions entitled "Nominees for Election as Directors," "Information Relative to the Board of Directors and Committees of the Board of Directors," "Section 16(a) Beneficial Ownership Reporting Compliance," and "Code of Ethics and Corporate Governance Guidelines."

We have adopted a Code of Ethics, which applies to directors and employees. The full text of the Code of Ethics is publicly available on our website at <http://www.amwater.com>. We intend to post on our website any amendments to certain provisions of our Code of Ethics and any waivers of such provisions granted to principal officers.

<u>Name</u>	<u>Age</u>	<u>Office and Employment During Last Ten Years</u>
Jeffrey Sterba	56	Mr. Sterba has been our President and Chief Executive Officer since August 2010. Prior to joining American Water, Mr. Sterba served as Chairman and CEO of PNM Resources, Inc., the parent company of PNM, Texas-New Mexico Power Company (TNMP) and First Choice Power, from 2000 until March 2010. Mr. Sterba previously served as Non-Executive Chairman of PNM Resources until retiring from the Board on December 31, 2011. Since joining PNM in 1977, he held a succession of positions including Executive Vice President and Chief Operating Officer, Senior Vice President Bulk Power Services, Senior Vice President Asset Restructuring, Senior Vice President Retail Electric & Water Services and Vice President Revenue Management. From 1998 to 2000, Mr. Sterba was Executive Vice President of United States Enrichment Corporation (USEC), a global energy company headquartered in Maryland. He has served as the chair of Edison Electric Institute, the national association of shareholder owned utilities, and chair of the Electric Power Research Institute, a non-profit center for energy and environment research. He serves on the board of directors of the Meridian Institute and is a member of the Business Environmental Leadership Council for the Pew Center on Global Climate Change. Mr. Sterba also previously served on the board of directors of the U.S. Chamber of Commerce.
Ellen C. Wolf	58	Ms. Wolf has been our Senior Vice President and Chief Financial Officer since March 2006 and served as a member of our board of directors from March 2006 until August 2007. Ms. Wolf's career began in the accounting firm of Deloitte Haskins & Sells. From 1987 through 1999, Ms. Wolf held various positions in corporate accounting, finance and business development for Bell Atlantic and several of its subsidiaries, including Bell Atlantic Enterprises International, Bell Atlantic Mobile, and Bell Atlantic Corporation. From 1999 through 2003, Ms. Wolf was employed by us as Vice President and Chief Financial Officer. Prior to re-joining us, Ms. Wolf served as Senior Vice President and Chief Financial Officer of USEC Inc., a global energy company, a position she held beginning in December 2003. Currently, Ms. Wolf also serves on the board of directors of Airgas, Inc., where she serves on the audit committee. In addition, Ms. Wolf is on the board of directors of the Philadelphia Zoo.

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Name	Age	Office and Employment During Last Ten Years
Walter J. Lynch	49	Mr. Lynch has been our President and Chief Operating Officer of Regulated Operations since March 2010, and President of Regulated Operations since July 2008. Prior to that date, he served as Executive Vice President, Eastern Division. He also served as president of New Jersey- American Water Company, Inc., Long Island Water Corporation and our Northeast Region. Mr. Lynch joined us in 2001 and served as President of our Products and Services Group, where he was responsible for overseeing our market-based businesses. Prior to this, he was President of the Southwest Region of American Water Services. Mr. Lynch has more than 20 years of experience in engineering, sales and marketing, operations and business development. Before joining us, he was involved with various start-up and growth organizations in the environmental industry. Mr. Lynch worked for Mobil Oil Corporation following his departure from the United States Army where he attained the rank of Captain. In addition, Mr. Lynch is on the board of directors of the National Association of Water Companies and serves on its Executive Committee.
Kellye L. Walker	45	Ms. Walker has been our Chief Administrative Officer since September 2010, and Senior Vice President, General Counsel and Secretary since January 2010. From February 2007 to June 2009, Ms. Walker served as Senior Vice President and General Counsel of Diageo North America, Inc., the largest operating company of Diageo plc. From February 2003 to December 2006, Ms. Walker served as Senior Vice President, General Counsel and Secretary of BJ's Wholesale Club, Inc., a leading warehouse club operator. Ms. Walker also served as a partner with the law firm of Hill & Barlow in Boston, Massachusetts, and as a partner and/or associate with the law firms of Chaffe, McCall, Phillips, Toler & Sarpy in New Orleans, Louisiana, and Boulton, Cummings, Connors & Berry in Nashville, Tennessee.
Mark Chesla	52	Mr. Chesla has been our Vice President and Controller since November 2007. From 2001 to November 2007, Mr. Chesla was Vice President and Controller of Oglethorpe Power Corporation, in Atlanta, Georgia, where he served as that company's chief accounting officer. In this capacity he was responsible for all aspects of the accounting, internal financial management, regulatory and SEC reporting functions. Mr. Chesla was Vice President, Administration/Controller of SouthStar Energy Services LLC, in Atlanta, Georgia, from 1998 to 2001. Earlier, he held management positions with several other companies, including Piedmont Natural Gas Co., Inc., Aegis Technologies, Inc., Deloitte & Touche LLP and Carolina Power & Light Company.

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<u>Name</u>	<u>Age</u>	<u>Office and Employment During Last Ten Years</u>
Mark F. Strauss	60	Mr. Strauss has been our Senior Vice President of Corporate Strategy and Business Development since September 2010. From December 2006, until his new appointment in September 2010, Mr. Straus was President of American Water Enterprises, managing our Market-Based Operations. Previously, Mr. Strauss was President and Chief Executive Officer of our Applied Water Management Group, which provides customized water and wastewater management solutions to real estate developers, industrial clients and small to midsized communities nationwide. Mr. Strauss joined Applied Water Management Group in 1997 as Corporate Counsel and Secretary. He was promoted to Chief Operating Officer in 2002, a position he held until his appointment as Division President and Chief Executive Officer in 2003. Earlier, he served as Vice President and General Counsel of Vizzoni Brothers Construction, Inc. Mr. Strauss serves as a director of Skylands Community Bank. Mr. Strauss was also an associate at the law firms of Ozzard, Rizzolo, Klein, Mauro & Savo and Toolan, Romond, Abbot and Domenichetti.
Nick O. Rowe	54	Mr. Rowe has been Senior Vice President of our Central Division since November 2011. From January 2009 until his new appointment in November 2011, he was Senior Vice President of our Eastern Division and from 2006 to January 2010, he was President of Kentucky-American Water Company. From 2005 to 2006, he served as Vice President of Service Delivery Operations for the Southeast Region of Kentucky-American Water Company. From 2003 to 2005, he served as Vice President, Business Change for American Water in New Jersey and from 1998 to 2003, Mr. Rowe was Vice President of Operations for Kentucky-American Water Company. From 1987 to 1998, he served in various management positions with responsibility for the day-to-day operations of American Water facilities in several states including Virginia, West Virginia, and Pennsylvania. Mr. Rowe is involved with various regulatory agencies and civic and professional organizations. He is also a member of the American Water Works Association and the National Association of Water Companies.
Kathy L. Pape	59	Ms. Pape has been our Senior Vice President, Mid-Atalntic Division since November 2011 and President of Pennsylvania-American Water Company since July 2007. From 1999 to 2007, Ms. Pape served as Senior Vice President, Treasurer and Rate Counsel for Aqua America, Inc. with responsibility for all financing activities, billing, rates and regulatory filings, budgeting and long-range planning. From 1994 to 1999, Ms. Pape was employed by us as Regional Counsel and Finance Manager, where her responsibilities included rates and regulatory affairs, finance, budgeting and customer service for 10 states. Prior to 1994, Ms. Pape was Vice President and Corporate Counsel for General Waterworks Management and Service Co., Assistant Counsel to the Pennsylvania Public Utility Commission and Assistant Consumer Advocate for the Pennsylvania Office of Consumer Advocate.

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<u>Name</u>	<u>Age</u>	<u>Office and Employment During Last Ten Years</u>
William D. Rogers	51	Mr. Rogers has been our Vice President and Treasurer since October 2010. From 2005 to 2010, he was Chief Financial Officer for NV Energy, an investor-owned utility in Las Vegas, Nevada. From 2005 to 2007, he also served as NV Energy's Vice President of Finance, Risk and Tax and as Corporate Treasurer. Before joining NV Energy, Mr. Rogers was a managing director of capital markets for both Merrill Lynch and JPMorgan Chase in New York.
John R. Bigelow	57	Mr. Bigelow has been our Senior Vice President of Business Services since November 2011. From 2007 until his new appointment in November 2011, he was President of New Jersey-American Water Company, Inc.. Mr. Bigelow joined American Water in 1994 and held a number of senior management positions during his tenure, including American Water's Senior Vice President of Regulatory Programs and Enterprise Risk Management. From December 2003 to February 2006, Mr. Bigelow served as American Water's Chief Financial Officer, Vice President and Treasurer of New Jersey American Water, and Director, Vice President and Treasurer of New Jersey American Resources Co. Mr. Bigelow began his career with GPU System Companies, where he spent 18 years in various leadership roles in the finance area. Mr. Bigelow is also a board and/or committee member of Drexel MBA Career Services Advisory Board, New JerseyAmerican Water Company, Inc., William J. Hughes Center for Public Policy, and NJUA (New Jersey Utilities Association).
Sharon Cameron	55	Ms. Cameron has been president of American Water Enterprises, the market based products and services division of American Water, since September 2010. She also serves as President of American Water Resources, Inc., a business she has been leading since 2002. Prior to joining American Water, Ms. Cameron was principal of Marketing Solutions, a marketing consulting firm she launched in 1998, and was a consultant to American Water on the Homeowner Services business. Previously, Ms. Cameron served as vice president of Marketing and Sales at Comcast Corporation (New Jersey), senior marketing manager at Menley & James Laboratories, and marketing manager at Campbell Soup Company.
David K. Baker	55	Mr. Baker has been President of New Jersey-American Water Company, Inc. and Senior Vice President of the Northeast Division since November 2011. From March 2010 until his new appointment in November 2011, he was the Senior Vice President of our Western Division. Mr. Baker joined American Water in 1995, and most recently served as President of both Indiana-American Water and Michigan-American Water from January 2007 until March 2010. His previous leadership roles included serving as Vice President of Business Development for the Central Region and Eastern Division Manager for Illinois-American Water. Prior to joining American Water, Mr. Baker served as Division President/General Manager of Waste Management of Kentucky for ten years.
Emily A. Ashworth	37	Ms. Ashworth has been our Vice President and Chief Information Officer since December 2007. Prior to joining American Water, Ms. Ashworth was a Partner with Computer Science Corporation's (CSC) Consulting Group. From June 2004 to July 2007, Ms. Ashworth served as a director of Business Process Integration for Pulte Homes. She also held positions with Westinghouse Power Generation Corp., and was a direct contractor for SuperVision International and the U.S. Naval Air Warfare Systems Simulation Training Division.

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Name	Age	Office and Employment During Last Ten Years
Maureen Duffy	42	Ms. Duffy has been our Vice President of Corporate Communications and External Affairs since September 2011. From June 2011 to September 2011, Ms. Duffy served as the Executive Director of Corporate Communications and External Affairs. From September 2008 to June 2011, Ms. Duffy served as Director of External Communications, and from July 2006 until September 2008, she served as Director of Internal Communication. From November 1999 to July 2006, she held various positions with New Jersey American Water, which included Government Affairs/Media Specialist, Communications Manager and Director of Corporate Communications. Prior to joining American Water, Ms. Duffy reported and produced news for WNJN/WNET-TV

ITEM 11. EXECUTIVE COMPENSATION

Information required by this item is incorporated by reference in the Company's Proxy Statement for the 2012 Annual Meeting of Stockholders, under the captions entitled "Executive Compensation," "Compensation Discussion and Analysis," "Compensation Committee Report" and "Director Compensation."

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information required by this item setting forth the security ownership of certain beneficial owners and management is incorporated by reference in the Company's Proxy Statement for the 2012 Annual Meeting of Stockholders, under the caption entitled "Security Ownership of Principal Stockholders and Management" and the "Equity Compensation Plan" table appearing under the caption "Long-Term Equity Incentive Compensation."

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

Information required by this item is incorporated by reference in the Company's Proxy Statement for the 2012 Annual Meeting of Stockholders, under the captions entitled "Certain Relationships and Related Transactions" and "Director Independence."

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information required by this item is incorporated by reference in the Company's Proxy Statement for the 2012 Annual Meeting of Stockholders, under the caption entitled "Independent Registered Public Accounting Fees and Services."

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Financial statement schedules have been omitted since they are either not required or are not applicable as the information is otherwise included in the financial statements or notes thereto.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 28th day of February, 2012.

AMERICAN WATER WORKS COMPANY, INC.

BY: _____ /s/ JEFFRY STERBA

Jeffry Sterba
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed on the 28th day of February, 2012 by the following persons in the capacities indicated.

_____/s/ JEFFRY STERBA

Jeffry Sterba
President and Chief Executive Officer
(Principal Executive Officer and Director)

_____/s/ ELLEN C. WOLF

Ellen C. Wolf
Senior Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

_____/s/ GEORGE MACKENZIE

George MacKenzie
(Director)

_____/s/ MARTHA CLARK GOSS

Martha Clark Goss
(Director)

_____/s/ JULIE A. DOBSON

Julie A. Dobson
(Director)

_____/s/ RICHARD R. GRIGG

Richard R. Grigg
(Director)

_____/s/ JULIA L. JOHNSON

Julia L. Johnson
(Director)

_____/s/ WILLIAM J. MARRAZZO

William J. Marrazzo
(Director)

_____/s/ STEPHEN P. ADIK

Stephen P. Adik
(Director)

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EXHIBIT INDEX

Exhibit Number	Exhibit Description
2.1	Agreement and Plan of Merger, dated as of September 16, 2001, among RWE Aktiengesellschaft, Thames Water Aqua Holdings GmbH, Apollo Acquisition Company and American Water Works Company, Inc. (incorporated by reference to Exhibit 2.1 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
2.2	Separation Agreement by and among RWE Aktiengesellschaft and American Water Works Company, Inc. (incorporated by reference to Exhibit 2.2 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
3.1	Restated Certificate of Incorporation of American Water Works Company, Inc. (incorporated by reference to Exhibit 3.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed November 6, 2008.)
3.2	Amended and Restated Bylaws of American Water Works Company, Inc. (incorporated by reference to Exhibit 3.2 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed January 5, 2010).
4.1	Indenture, dated as of October 22, 2007 between American Water Capital Corp. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.4 to American Water Capital Corp.'s Registration Statement on Form S-4, File No. 333-148284, and American Water Works Company, Inc.'s Registration Statement on Form S-4, File No. 333-148284-01, filed December 21, 2007).
4.2	Indenture between American Water Capital Corp. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed December 3, 2008).
4.3	Indenture, dated as of December 4, 2009, between American Water Capital Corp. and Wells Bank, National Association (incorporated by reference to Exhibit 4.1 to American Water Works Company, Inc.'s Form 8-K, file No. 001-34028, filed December 3, 2010).
4.4	Note Purchase Agreement, as amended, dated as of December 21, 2006, by and between American Water Capital Corp. and the Purchasers named therein for purchase of \$101,000,000 5.39% Series A Senior Notes due 2013, \$37,500,000 5.52% Series B Senior Notes due 2016, \$329,500,000 5.62% Series C Senior Notes due 2018 and \$432,000,000 5.77% Series D Senior Notes due 2021 (incorporated by reference to Exhibit 4.2 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
4.5	Note Purchase Agreement, as amended, dated as of March 29, 2007, by and between American Water Capital Corp. and the Purchasers named therein for purchase of \$100,000,000 5.62% Series E Senior Notes due 2019 and \$100,000,000 5.77% Series F Senior Notes due 2022 (incorporated by reference to Exhibit 4.3 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
4.6	Note Purchase Agreement, dated May 15, 2008, by and between AWCC and the Purchasers named therein for purchase of \$110,000,000 6.25% Series G Senior Notes due 2018 and \$90,000,000 6.55% Series H Senior Notes due 2023 (incorporated herein by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed on May 19, 2008).

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Exhibit Number	Exhibit Description
9.1	Exchange and Registration Rights Agreement, dated as of October 22, 2007, between American Water Capital Corp., American Water Works Company, Inc. and Citigroup Global Markets Inc, Credit Suisse Securities (USA) LLC, Goldman, Sachs & Co. and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representatives of the several purchasers (incorporated by reference to Exhibit 4.4 to American Water Capital Corp.'s Registration Statement on Form S-4, File No. 333-148284, and American Water Works Company, Inc.'s Registration Statement on Form S-4, File No. 333-148284-01, filed December 21, 2007).
9.2	Registration Rights Agreement by and among American Water Works Company, Inc., RWE Aktiengesellschaft and RWE Aqua Holdings GmbH (incorporated by reference to Exhibit 9.1 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
10.1	Agreement between George W. Patrick and American Water Works Company, Inc., dated August 27, 1999 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2A	Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated January 1, 2000 (incorporated by reference to Exhibit 10.2A to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2B	First Amendment to Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated May 24, 2004 (incorporated by reference to Exhibit 10.2B to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2C	Second Amendment to Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated July 27, 2005 (incorporated by reference to Exhibit 10.2C to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.2D	Third Amendment to Change in Control Agreement between George W. Patrick and American Water Works Company, Inc., dated December 19, 2008 (incorporated by reference to Exhibit 10.2D to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed March 1, 2010).
10.3	Credit Agreement, dated as of September 15, 2006, among American Water Capital Corp., the Lenders identified therein and JPMorgan Chase Bank, N.A (incorporated by reference to Exhibit 10.1 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007 and American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 4, 2010).
10.4	Support Agreement, as subsequently amended, dated June 22, 2000, by and between American Water Works Company, Inc. and American Water Capital Corp. (incorporated by reference to Exhibit 10.3 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.5	Amendment 2011-1 to the Pension Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 3, 2011).
10.6	Employment Agreement between Ellen C. Wolf and American Water Works Company, Inc., dated February 15, 2008 (incorporated by reference to Exhibit 10.5 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
10.7	Employment Agreement between Jeffrey E. Sterba and American Water Works Company, Inc., dated August 15, 2010 (incorporated by reference to Exhibit 99.1 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed August 17, 2010).

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Exhibit Number	Exhibit Description
10.8	Employment Agreement between Kellye L. Walker and American Water Works Company, Inc., dated December 21, 2009 (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2011).
10.9	Separation and General Release Agreement between American Water Works Company, Inc. and Donald L. Correll, dated August 15, 2010 (incorporated by reference to Exhibit 99.2 to American Water Works Company, Inc.'s Form 8-K, File No. 001-34028, filed August 17, 2010).
10.10	Amended and Restated American Water Works Company, Inc. Executive Retirement Plan, dated as of March 1, 2007 (incorporated by reference to Exhibit 10.8 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.11	Amended and Restated American Water Works Company, Inc. Deferred Compensation Plan, dated as of January 1, 2001 (incorporated by reference to Exhibit 10.9 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.12	Settlement Agreement by and between California American Water Company and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, dated as of June 29, 2006 (incorporated by reference to Exhibit 10.12 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 6, 2008).
10.13	Amended and Restated American Water Works Company, Inc. Nonqualified Employee Stock Purchase Plan, dated as of December 10, 2010 (incorporated by reference to Exhibit 10.12 to American Water Works Company, Inc.'s Form 10-K, File No. 001-34028, filed February 25, 2011).
10.14	American Water Works Company, Inc. Executive Severance Policy, dated as of December 16, 2008 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed November 3, 2010).
10.15	2006 American Water Senior Management Annual Incentive Plan (incorporated by reference to Exhibit 10.21 to American Water Capital Corp.'s Registration Statement on Form S-1, File No. 333-145757-01, and American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145757, filed October 11, 2007).
10.16	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan (incorporated by reference to Exhibit 10.22 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 31, 2008).
10.17	Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and its Designated Subsidiaries (incorporated by reference to Exhibit 10.23 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 26, 2008).
10.18	Nonqualified Deferred Compensation Plan for Non-Employee Directors of American Water Works Company, Inc. (incorporated by reference to Exhibit 10.24 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed March 26, 2008).
10.19	2008 American Water Senior Management Annual Incentive Plan (incorporated by reference to Exhibit 10.25 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-145725, filed April 15, 2008).
10.20	2009 American Water Senior Management Annual Incentive Plan (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009).

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Exhibit Number	Exhibit Description
10.21	2010 American Water Annual Incentive Plan Highlights Brochure (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 4, 2010).
10.22	2011 American Water Annual Incentive Plan Highlights Brochure (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2011).
10.23	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Restricted Stock Unit Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.26 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed on May 6, 2008).
10.24	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Restricted Stock Unit Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.27 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed on May 6, 2008).
10.25	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Restricted Stock Unit Grant Form for Directors (incorporated by reference to Exhibit 10.28 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed on May 6, 2008).
10.26	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Restricted Stock Unit Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.29 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.27	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Restricted Stock Unit Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.30 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.28	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Nonqualified Stock Option Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.31 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.29	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan First Nonqualified Stock Option Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.32 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.30	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Nonqualified Stock Option Grant Form for Directors (incorporated by reference to Exhibit 10.33 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.31	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Nonqualified Stock Option Grant Form for ML1-ML3 Employees (incorporated by reference to Exhibit 10.34 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.32	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Second Nonqualified Stock Option Grant Form for ML4 Employees (incorporated by reference to Exhibit 10.34 to American Water Works Company, Inc.'s Registration Statement on S-4/A, filed May 6, 2008).
10.33	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Performance Stock Unit Grant Form for ML1-ML3B Employees (incorporated by reference to Exhibit 10.36 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 27, 2009).

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Exhibit Number	Exhibit Description
10.34	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Performance Stock Unit Grant Form for ML4-ML5 Employees (incorporated by reference to Exhibit 10.37 to American Water Works Company, Inc.'s Annual Report on Form 10-K, File No. 001-34028, filed February 27, 2009).
10.35	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Nonqualified Stock Option Grant Form for ML1-ML3B Employees (incorporated by reference to Exhibit 10.4 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009).
10.36	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Nonqualified Stock Option Grant Form for ML4-ML5 Employees (incorporated by reference to Exhibit 10.5 to American Water Works Company, Inc.'s Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009).
10.37	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2009 Stock Unit Grant Form for Non-Employee Directors (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 6, 2009).
10.38	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Performance Stock Unit Grant Form A for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.39	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Performance Stock Unit Grant Form B for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.40	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Performance Stock Unit Grant Form C for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.41	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Nonqualified Stock Option Grant for ML1-ML5 Employees (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2010).
10.42	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2010 Form of Stock Unit Grant Agreement for Non-Employee Directors (incorporated by reference to Exhibit 10.3 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 4, 2010).
10.43	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan September 2010 Form of Stock Unit Grant Agreement for Non-Employee Directors (incorporated by reference to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed November 3, 2010)
10.44	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2011 Nonqualified Stock Option Grant for ML1 – L5 Employees (incorporated by reference to Exhibit 10.3 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2011).
10.45	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2011 Performance Stock Unit Grant Form A for ML1 – L5 (incorporated by reference to Exhibit 10.4 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2011).
10.46	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2011 Performance Stock Unit Grant Form B for ML1 – L5 (incorporated by reference to Exhibit 10.5 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed May 4, 2011).

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Exhibit Number	Exhibit Description
10.47	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan 2011 Form of Stock Unit Grant Agreement for Non-Employee Directors (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Form 10-Q, File No. 001-34028, filed August 3, 2011).
10.48	Amendment to the Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and its Designated Subsidiaries, effective as of August 1, 2008 (incorporated by reference to Exhibit 10.1 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed November 6, 2008.)
10.49	Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and Its Designated Subsidiaries, as amended and restated, effective as of January 1, 2009 (incorporated by reference to Exhibit 10.37 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-155245, filed November 18, 2008).
10.50	Nonqualified Deferred Compensation Plan for Non-Employee Directors of American Water Works Company, Inc., as amended and restated, effective as of January 1, 2009 (incorporated by reference to Exhibit 10.38 to American Water Works Company, Inc.'s Registration Statement on Form S-1, File No. 333-155245, filed November 18, 2008).
10.51	Amendment to the Nonqualified Savings and Deferred Compensation Plan for Employees of American Water Works Company, Inc. and its Designated Subsidiaries, effective as of February 6, 2009 (incorporated by reference to Exhibit 10.7 to American Water Works Company, Inc. Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009)
10.52	Amendment to the Nonqualified Deferred Compensation Plan for Non-Employee Directors of American Water Works Company, Inc., effective as of February 6, 2009 (incorporated by reference to Exhibit 10.8 to American Water Works Company, Inc. Current Report on Form 8-K, File No. 001-34028, filed February 26, 2009)
10.53	American Water Works Company, Inc. 2007 Omnibus Equity Compensation Plan Stock Unit Grant Form for Non-Employee Directors (incorporated by reference to Exhibit 10.2 to American Water Works Company, Inc.'s Quarterly Report on Form 10-Q, File No. 001-34028, filed August 6, 2009).
*21.1	Subsidiaries of American Water Works Company, Inc.
*23.1	Consent of PricewaterhouseCoopers LLP.
*31.1	Certification of Jeffrey E. Sterba, President and Chief Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act.
*31.2	Certification of Ellen C. Wolf, Senior Vice President and Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act.
*32.1	Certification of Jeffrey E. Sterba, President and Chief Executive Officer, pursuant to Section 906 of the Sarbanes-Oxley Act.
*32.2	Certification of Ellen C. Wolf, Senior Vice President and Chief Financial Officer, pursuant to Section 906 of the Sarbanes-Oxley Act.
101	The following financial statements from American Water Works Company, Inc.'s Annual Report on Form 10-K for the period ended December 31, 2011, filed with the Securities and Exchange Commission on February 24, 2012, formatted in XBRL (eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets; (ii) the Consolidated Statements of Operations and Comprehensive Income; (iii) the Consolidated Statements of Cash Flows; (iv) the Consolidated Statements of Changes in Stockholders' Equity; and (v) the Notes to Consolidated Financial Statements.

* filed herewith

American Water Works Company, Inc. and its Subsidiaries Ownership Schedule

As of February 21, 2012

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
AAET, Inc.	Corporation	Delaware	100% held through American Water Enterprises, Inc.	General Partner of AAET, L.P.
American Lake Water Company	Corporation	Illinois	100% held through American Water	Water pipeline company
American Water – Acciona Agua LLC	Limited Liability Company	Delaware	50% held through American Water Enterprises, Inc.; 50% outside ownership by Acciona Agua Corporation (USA)	Joint Venture entity, which contracts with Tampa Bay to remedy, operate and manage the Tampa Bay Seawater Desalination Plant.
American Water Canada Corp.	Corporation	Ontario	100% held through American Water Enterprises Holding, Inc.	Holds contracts for operation and maintenance of water and/or wastewater facilities in Canada
American Water Capital Corp.	Corporation	Delaware	100% held through American Water	Funding vehicle for AWW and its utility subsidiaries
American Water Carbon Services Corp.	Corporation	Ontario	100% held through American Water Canada Corp.	Supplies carbon regeneration materials to water facilities in Canada
American Water Engineering, Inc.	Corporation	New Jersey	100% held through American Water (USA), Inc.	Inactive
American Water Enterprises Holding, Inc.	Corporation	Delaware	100% held through American Water Enterprises, Inc.	Holding company for many AWE subsidiaries in the US; Holds contract to operate and maintain Jefferson Parish, LA East Bank wastewater treatment plant
American Water Enterprises, Inc.	Corporation	Delaware	100% held through American Water	Holding company for the non-regulated business; Has some contracts due to historical reasons
American Water Industrials, Inc.	Corporation	Delaware	100% held through American Water Enterprises, Inc.	Holding company
American Water Operations and Maintenance, Inc.	Corporation	Texas	100% held through American Water (USA), Inc.	Primary entity for contracts for design, building and/or operation of water and wastewater facilities and operations, maintenance and management of water and wastewater facilities in the US
American Water Resources, Inc.	Corporation	Virginia	100% held through American Water	a) Homeowner Services Group – water line and sewer line protection programs b) Carbon Services – reactivates spent carbon c) Leasing (NOT managed by AWEG)

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
American Water Resources Holdings, Inc.	Corporation	Delaware	Wholly owned subsidiary of American Water (USA), Inc.	Holding company
American Water Resources of Texas, Inc.	Corporation	Delaware	Wholly owned subsidiary of American Water Resources Holdings, Inc.	Entity allows for the sale of service contracts in the state of Texas.
American Water Services CDM, Inc.	Corporation	Washington	80% held through American Water (USA), Inc.; 20% outside common stock held by Camp Dresser and McKee, Inc.	Joint venture operating the Tolt water treatment facility located in Seattle, WA
American Water Services Underground Infrastructure Corp.	Corporation	Ontario	100% held through American Water Canada Corp.	Current contracts for closed circuit television inspection of water and/or wastewater pipes
American Water (USA), Inc.	Corporation	Delaware	100% held through American Water Enterprises Holding, Inc.	Holding company
American Water Works Company, Inc.	Corporation	Delaware	100% held through AMERICAN WATER	Water and Wastewater-related product and services
American Water Works Service Company, Inc.	Corporation	Delaware	100% held through American Water	Professional water and/or wastewater services
American Water Services LLC	Limited Liability Company	New Jersey	100% held through American Water	Holding Company
AW Contract Services Holding, Inc.	Corporation	Delaware	100% held through AWE	Holding Company
AW Contract Services (USA), Inc.	Corporation	Delaware	100% held through AW Contract Services Holding, Inc.	Current contracts for water and/or wastewater services
AW Contract Services (Canada), Inc.	Corporation	Federal Canada	100% held through AW Contract Services Holding, Inc.	Current contracts for water and/or wastewater services
AW Technologies Incorporated	Corporation	Delaware	100% held through AWE	Water and/or wastewater services using emerging technologies
Bluefield Valley Water Works Company	Corporation	Virginia	100% held through West Virginia-American Water Company	Water and/or wastewater utility
Braemar Acres Limited	Corporation	Ontario	100% held through Uniflo Limited	Currently owns real property for storage of lime materials used by Terratec Environmental Ltd. in Canada
California – American Water Company	Corporation	California	100% held through American Water	Water and/or wastewater utility

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
EMC American Water Canada, Inc.	Corporation	Canada (Federal Corporation)	100% held through American Water Canada Corp.	Operation and maintenance of water and wastewater facilities in Canada.
E'town LLC	Limited liability company	Delaware	100% held through TWH LLC	Holding company
E'town Properties, Inc.	Corporation	Delaware	100% held through American Water Works Company, Inc.	Set up by Elizabethtown Water Company entity to hold real estate for development and/or sale
E'town Services, LLC	Limited Liability Company	New Jersey	100% held through AWE	Holds wastewater services contract among E'town Corp, Elizabeth, NJ and the Union County Improvement Authority
Edison Water Company	Corporation	New Jersey	100% held through AWE	Manage water contract for Township of Edison, NJ
EMC Batesville, LLC	Limited liability company	Missouri	100% held through EMC	Single purpose entity formed for improvements made to, and subsequent operation of, a wastewater treatment plant and water reuse system located in Batesville, Arkansas, as well as for the lease of related equipment used thereon.
EMC of St. Charles County, LLC	Limited liability company	Missouri	100% held through EMC	Regulated sewer utility providing sewer services to a residential development located in St. Charles County, Missouri.
Environmental Management Corp.	Corporation	New Jersey	100% held through AWE	Provides design, build and operation services for the water and wastewater assets of industrial firms and municipalities in the US and other countries.
Hawaii – American Water Company	Corporation	Nevada	100% held through American Water	Water and/or wastewater utility
Illinois – American Water Company	Corporation	Illinois	100% held through American Water (0.1% outside preferred stock)	Water and/or wastewater utility
Indiana – American Water Company	Corporation	Indiana	100% held through American Water	Water and/or wastewater utility
Iowa – American Water Company	Corporation	Delaware	100% held through American Water	Water and/or wastewater utility
Kentucky – American Water Company	Corporation	Kentucky	100% held through American Water	Water and/or wastewater utility
Laurel Oak Properties Corporation	Corporation	Delaware	100% held through American Water	Entity to hold real estate for development and/or sale

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
Liberty Water Company	Corporation	New Jersey	100% held through AWE	Manage water contract for City of Elizabeth, NJ
Long Island Water Corporation	Corporation	New York	100% held through American Water	Water and/or wastewater utility
Maryland – American Water Company	Corporation	Maryland	100% held through American Water	Water and/or wastewater utility
Michigan – American Water Company	Corporation	Michigan	100% held through American Water	Water and/or wastewater utility
Missouri – American Water Company	Corporation	Missouri	100% held through American Water	Water and/or wastewater utility
Mobile Residuals Management Inc.	Corporation	Ontario	100% held through American Water Canada Corp.	Inactive
Mobile Residuals Management (USA), Inc.	Corporation	Delaware	100% held through American Water (USA), Inc	Mobile biosolids and residuals management; Ongoing contracts in CA and NJ
New Jersey – American Water Company	Corporation	New Jersey	100% held through American Water	Water and/or wastewater utility
Ohio – American Water Company	Corporation	Ohio	100% held through American Water	Water and/or wastewater utility
OMI/Thames Water Stockton, Inc.	Corporation	Delaware	50% held through TWNA, Inc. and 50% held through Operations and Management, Inc.	Water and/or wastewater services
Pennsylvania – American Water Company	Corporation	Pennsylvania	96.5% held through American Water (3.5% outside preferred stock)	Water and/or wastewater utility
Philip Automated Management Controls, Inc.	Corporation	Georgia	100% held through American Water (USA), Inc.	Inactive
Prism-Berlie (Windsor) Limited	Corporation	Ontario	100% held through Terratec Environmental Ltd.	Holds contract to operate pelitizing facility in Windsor, Ontario
Rialto Water Services, L.P.	Limited Partnership	Delaware	100% held through American Water (USA) and Rialto Water Services, Inc.	Rialto concession bid. Percentage will fall below 50% if transaction completed as a concession.
Tennessee – American Water Company	Corporation	Tennessee	99.89% held through American Water (0.11% outside preferred stock)	Water and/or wastewater utility
Terratec Environmental Ltd.	Corporation	Ontario	100% held through American Water Canada Corp.	Primary entity for holding contracts for biosolids management land application and disposal
Texas-American Water Company	Corporation	Texas	100% through American Water	Water and/or wastewater utility

Subsidiaries of American Water	Nature of Legal Organization	Jurisdiction of Incorporation or Formation	Percentage of Equity Interest held directly or indirectly by American Water	Line of Business
TWH LLC	Limited Liability Company	Delaware	100% held through American Water	Holding company
TWNA, Inc. formerly Thames Water North America, Inc.	Corporation	Delaware	100% held through American Water	Water and/or wastewater services
Uniflo Limited	Corporation	Ontario	100% held through Terratec Environmental Ltd.	Holding company
Virginia – American Water Company	Corporation	Virginia	100% held through American Water	Water and/or wastewater utility
West Virginia – American Water Company	Corporation	West Virginia	99.97% held through American Water (0.03% outside common stock)	Water and/or wastewater utility

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-168543 and 333-150381) and Form S-3 (Nos. 333-165624 and 333-158949) of American Water Works Company, Inc. of our report dated February 28, 2012 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Philadelphia, Pennsylvania
February 28, 2012

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

I, Jeffrey Sterba, certify that:

1. I have reviewed this annual report on Form 10-K of American Water Works Company, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the consolidated financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2012

By: /s/ JEFFRY STERBA

Jeffrey Sterba
President and Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER AND CHIEF ACCOUNTING OFFICER

I, Ellen C. Wolf, certify that:

1. I have reviewed this annual report on Form 10-K of American Water Works Company, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the consolidated financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2012

By: /S/ ELLEN C. WOLF

Ellen C. Wolf
Senior Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

AMERICAN WATER WORKS COMPANY, INC.
CERTIFICATION PURSUANT TO
RULE 13a-14(b) UNDER THE SECURITIES EXCHANGE ACT AND
18 U.S.C. SECTION 1350,

I, Ellen C. Wolf, Senior Vice President and Chief Financial Officer, of American Water Works Company, Inc. (the "Company"), hereby certify that, based on my knowledge:

- (1) The Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2011 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By: /s/ ELLEN C. WOLF
Ellen C. Wolf
Senior Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

February 28, 2012

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Linda C. Bridwell/Gary M. VerDouw**

32. CC – Reference: Cost of Capital. Please provide the authorized and earned returns on equity for each operating water company subsidiary of AWWC for the past three years (2009, 2010, and 2011).

Response:

Please see the CONFIDENTIAL attachment in response to AGDR1 Item 21. Page 41 of the PowerPoint presentation is a slide that shows the earned and authorized returns on common equity for AWWC's operating subsidiaries for the years 2009, 2010, and 2011. Please note that the earned returns on common equity all include non-utility income and expenses.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Linda C. Bridwell

33. G – Reference: Corporate structure. Please provide an organizational chart that outlines, reports AWWC's current corporate structure. For each entity on the chart, identify whether the entity is a subsidiary providing water service with rates and service subject to a review of a state's public utility commission or similar state public utility regulatory authority.

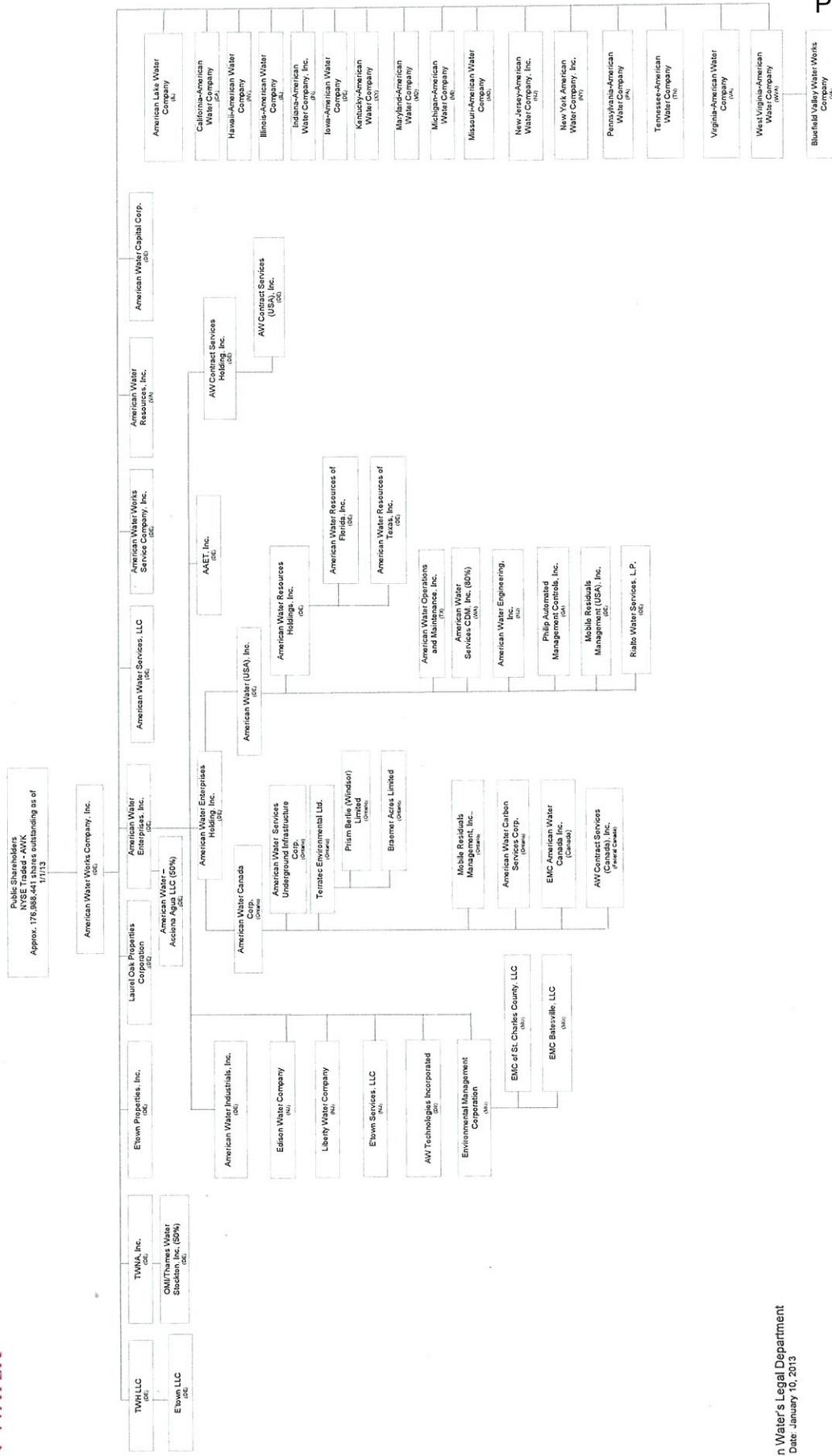
Response:

Please see the attached American Water Works Company organizational chart. The following companies on the chart are water utilities providing water service and subject to the review of a state's public utility commission or similar state public utility regulatory authority:

American Lake Water Company
California American Water Company
Hawaii American Water Company
Illinois American Water Company
Indiana American Water Company
Iowa American Water Company
Kentucky American Water Company
Maryland American Water Company
Michigan American Water Company (unregulated utility)
Missouri American Water Company
New Jersey American Water Company
New York American Water Company
Pennsylvania American Water Company
Tennessee American Water Company
Virginia American Water Company
West Virginia American Water Company
Bluefield Valley Water Works Company



Organizational Chart – American Water Works Company, Inc.



**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: Linda C. Bridwell

34. G – Reference: Corporate structure: With regard to the prior question, No. 33, please indicate the date that this corporate structure was established.

Response:

The organizational structure provided in response to the prior question, No. 33, was as of January 10, 2013.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Linda C. Bridwell/Gary M. VerDow

35. G – Reference: Corporate structure: For the period beginning 1 January 2008, please provide:
- a. An organization chart that outlines, reports AWWC's corporate structure in place on 1 January 2008. As with question No. 33, for each entity on the chart, identify whether the entity is a subsidiary providing water service with rates and service subject to a review of a state's public utility commission or similar state public utility regulatory authority.
 - b. For each revision or change to AWWC's corporate structure since 1 January 2008, please (i) provide an organizational chart in conformity with the description in question No. 33 and sub-part (a) of this request that outlines, reports the impact of the revision or change to AWWC's corporate structure (including the effective date), and (ii) for each revision or change, provide a summary of the corresponding reason or reasons for the revision or change (for example, an acquisition or divestiture or an entity or divisional reorganization).
 - c. With regard to Kentucky-American Water Company, by job title and by name, provide an organizational chart that outlines, reports the current chain of command or line of corporate officer governance and reporting from the President and Chief Executive Officer of American Water Works Company, Inc. (the Principle Executive Officer), to the President of the Kentucky-American Water Company.
 - d. With regard to Kentucky-American Water Company, by job title and by name, provide an organizational chart in conformity with sub-part (c) that outlines, reports the chain of command or line of corporate officer governance and reporting from the President and Chief Executive Officer of American Water Works Company, Inc. (the Principle Executive Officer), to the President of the Kentucky-American Water Company in place on 1 January 2008.
 - e. With regard to Kentucky-American Water Company, by job title and by name, for each revision or change in the chain of command or line of corporate governance and reporting from the President and Chief Executive Office of American Water Works Company, Inc. (the Principle Executive Officer), to the President of the Kentucky-American Water Company since 1 January 2008, please provide: (i) an organizational chart in conformity with sub-parts (c) and (d) that outlines, reports the impact of the revision or change (including the effective date), and (ii) for each revision or change, provide a summary of the corresponding reason or

reasons for the revision or change (for example, divisional reorganization or promotion, reassignment, retirement, etc.).

- f. With regard to the requests and responses in sub-parts (b) and (e), for each change or revision since 1 January 2008, in AWWC's corporate structure and/or Kentucky-American Water Company's chain of command or line of corporate governance and reporting from AWWC to KAWC, please indicate whether there was, as part of the change or revision, an establishment or elimination of or modification to any (i) cost allocation formula, (ii) cost allocation agreement, and/or (iii) service by AWWC, including by or through a corporate affiliate of KAWC, to KAWC (such as service from a shared testing facility, call center, etc.).
- g. Provide (i) a list by name, position title, and employer (for example KAWC or named corporate affiliate) for each member of Kentucky-American Water Company's senior management on 1 January 2008, and (ii) provide a list consistent with list description in (i) of this sub-part for KAWC's senior management on 1 January 2009, 1 January 2010, 1 January 2011, 1 January 2012, and 1 January 2013.

Response:

- a. Please see the attached American Water Works Company organizational chart in effect on January 1, 2008. The following companies on the chart are water utilities providing water service and subject to the review of a state's public utility commission or similar state public utility regulatory authority:

American Lake Water Company
Arizona American Water Company
California American Water Company
Hawaii American Water Company
Illinois American Water Company
Indiana American Water Company
Iowa American Water Company
Kentucky American Water Company
Long Island Water Corporation
Maryland American Water Company
Michigan American Water Company (unregulated utility)
Missouri American Water Company
New Jersey American Water Company
New Mexico American Water Company
Ohio American Water Company
Pennsylvania American Water Company
Tennessee American Water Company
Texas American Water Company

Virginia American Water Company
United Water Virginia
West Virginia American Water Company
Bluefield Valley Water Works Company

- b. Please see the attached American Water Works Company organizational charts, with 2 effective dates for the applicable changes since 2008. The companies on the chart, noted in the response above for subpart (a), are water utilities providing water service and subject to the review of a state's public utility commission or similar state public utility regulatory authority:

Effective Date: July 19, 2012 – The change to AWWC's corporate structure was the divestiture of Arizona American Water Company, New Mexico American Water Company, Ohio American Water Company, and Texas American Water Company. This chart change also included the acquisition of New York American Water Company.

Effective December 6, 2012 – The change to AWWC's corporate structure was the merger of the New York based American Water Companies, Long Island Water Corporation and New York American Water Company. These companies are now legally one entity known as New York American Water Company, Inc.

- c. Please see the attached Kentucky American Water company organizational chart reporting the line of corporate officer governance.
- a. Chief Executive Officer, Jeffrey Sterba
 - b. President and Chief Operating Officer Regulated Operations, Walter Lynch
 - c. Central Division, Senior Vice President, Nick Rowe
 - d. Kentucky President, Cheryl Norton
- d. Please see the attached Kentucky American Water company organizational chart reporting the line of corporate officer governance, in effect on January 1, 2008.
- a. Chief Executive Officer, Donald Correll
 - b. Chief Operating Officer, John Young
 - c. Executive Vice President, Eastern Division, Walter Lynch
 - d. Kentucky President, Nick Rowe
- e. Please see the attached Kentucky American Water company organizational chart reporting the line of corporate officer governance since 2008.

Effective early in 2008, Walter Lynch was announced as Chief Operating Officer succeeding John Young who transferred to the President of American Water Service Company. On January 1, 2009 – it was announced that Kentucky President Nick Rowe will also serve as Senior Vice President of the newly aligned Eastern Division as well as maintain his role as the Kentucky American Water President.

- a. Chief Executive Officer, Donald Correll
- b. President and Chief Operating Officer Regulated Operations, Walter Lynch
- c. Senior Vice President, Eastern Division, Nick Rowe
- d. Kentucky President, Nick Rowe

For the below changes please refer to the attachment for subpart C, for the following Kentucky American Water organizational chart:

Effective August 16, 2010 - Jeffry Sterba succeeded Donald Correll as Chief Executive Officer of American Water Works Company.

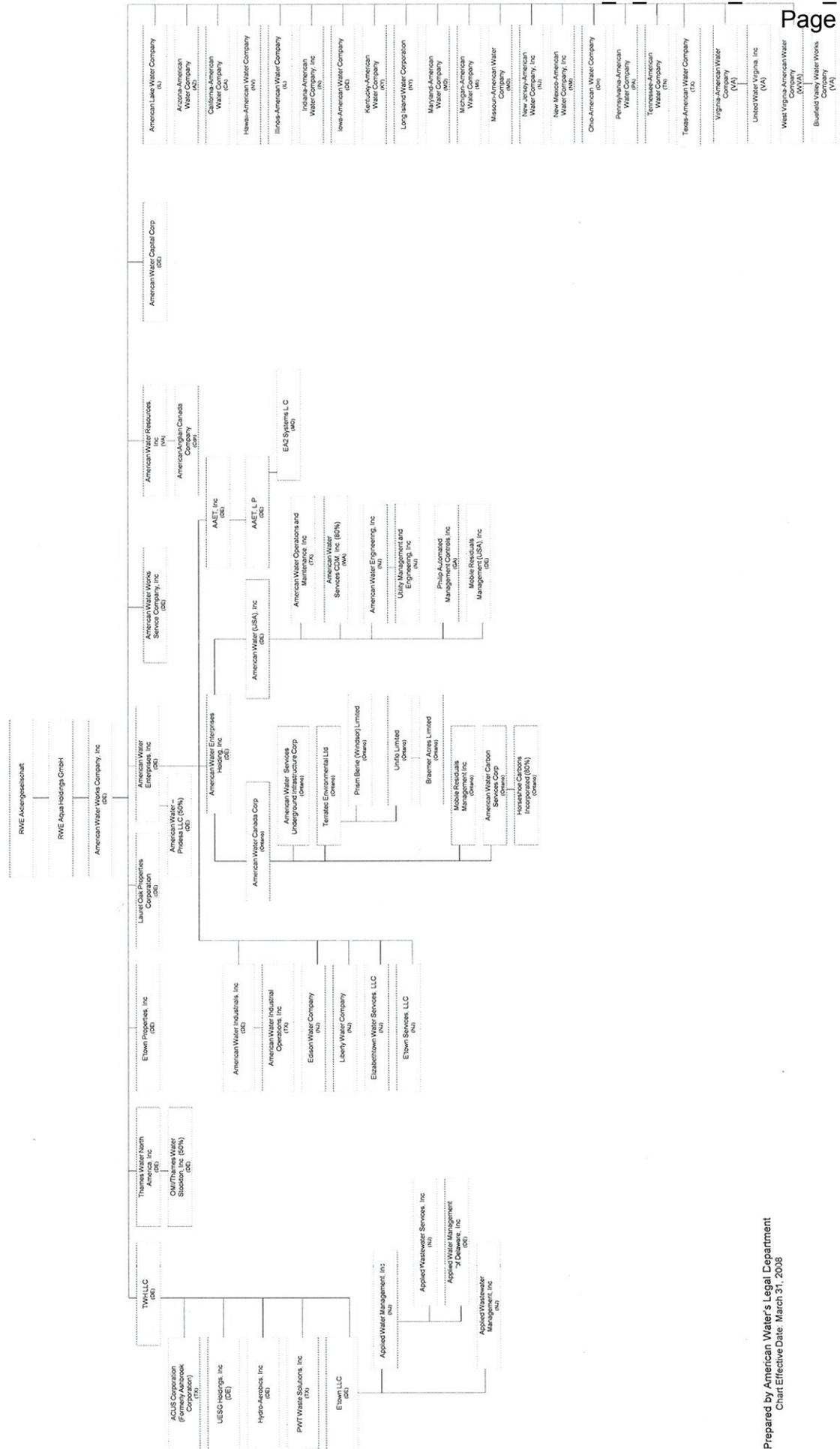
Effective January 10, 2011 - Cheryl Norton was named president Kentucky American Water, succeeding Nick Rowe. Nick Rowe remained the Senior Vice President of the Eastern Division.

Effective Date: November 2011 - the Divisional structure was realigned and now consisted of the following: 1) the Northeast Division, 2) the Mid-Atlantic Division, 3) the Central Division (Kentucky), and 4) Standalone; California and Hawaii. At this time, Nick Rowe became the Senior Vice President, Central Division.

- f. With regards to the responses in subparts (b) and (e), there were no revisions or changes to the (ii) cost allocation agreement or the service by AWWC, including by or through a corporate affiliate of KAWC, to KAWC. However, there were modifications to the (i) cost allocation formula for the American Water Service Company charges to KAWC. The allocated charges based on the regional/divisional customer count levels, were impacted from the realignment. Kentucky American Water made up 11.06% of the Southeast region customers, 14.11% of the Eastern Division customers, and 8.88% of the Central Division customers.
- g. Please see the attached list by name, position title, and employer for each member of Kentucky-American Water Company's senior management.

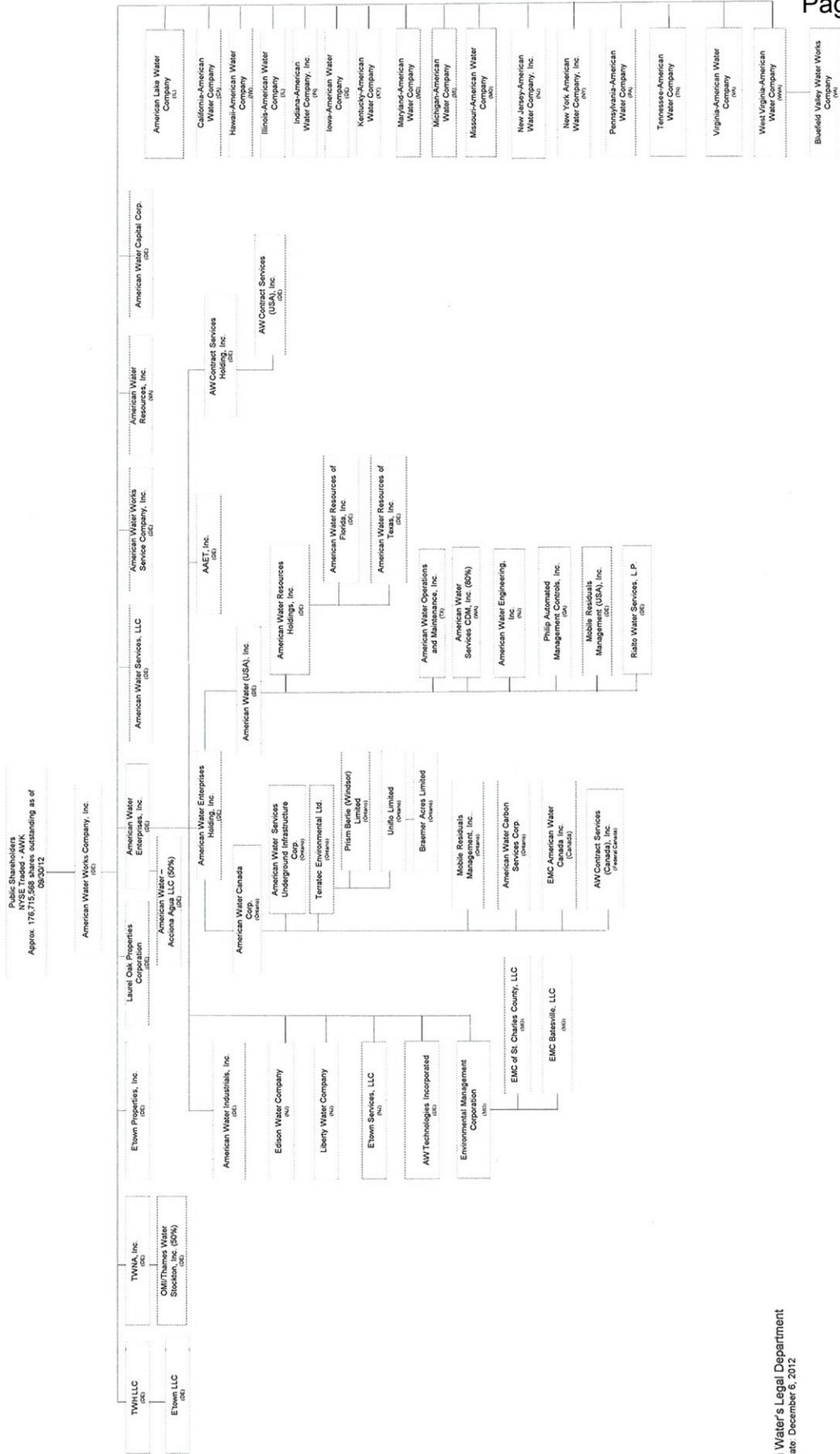


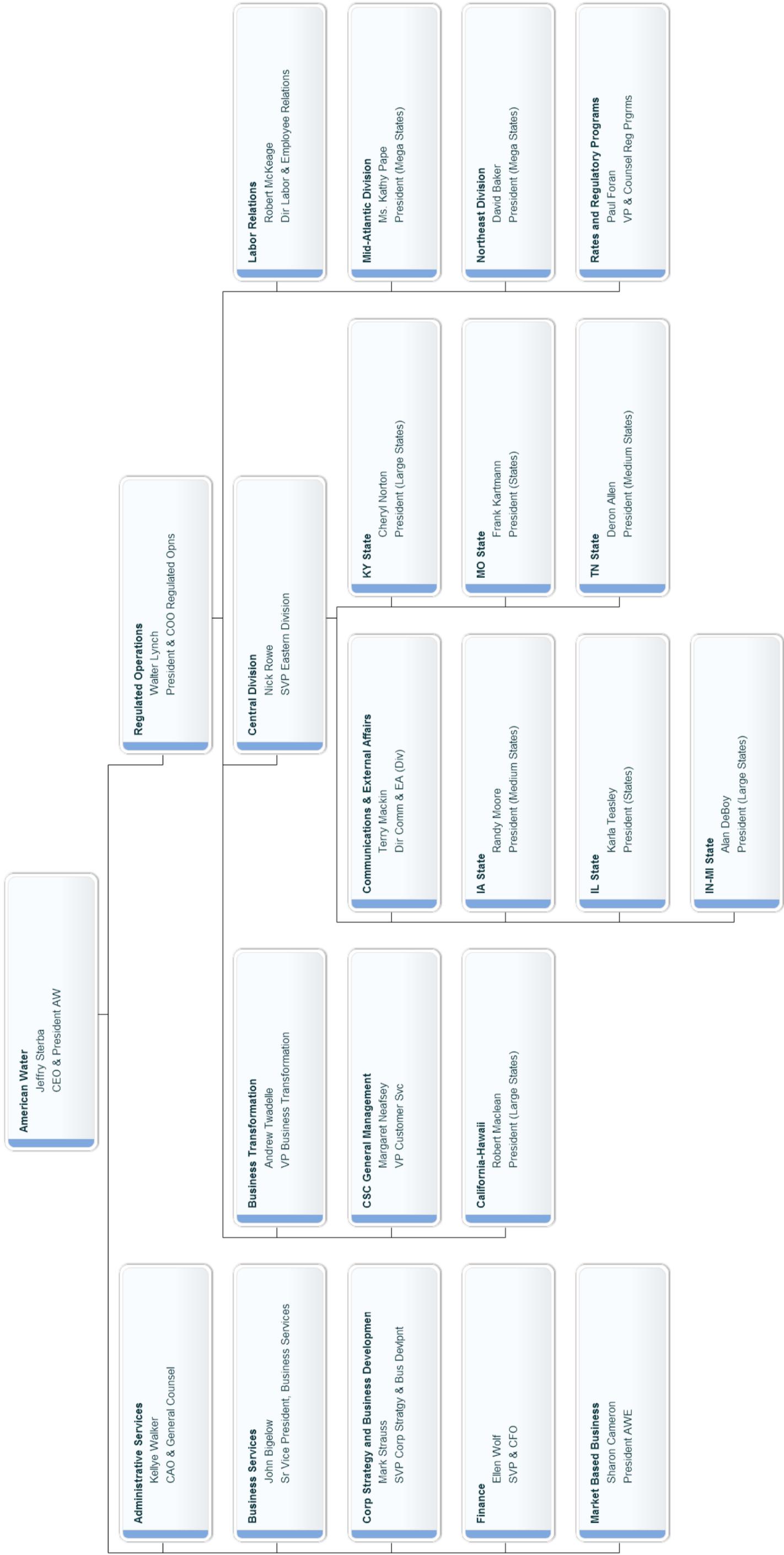
Organizational Chart – American Water Works Company, Inc.





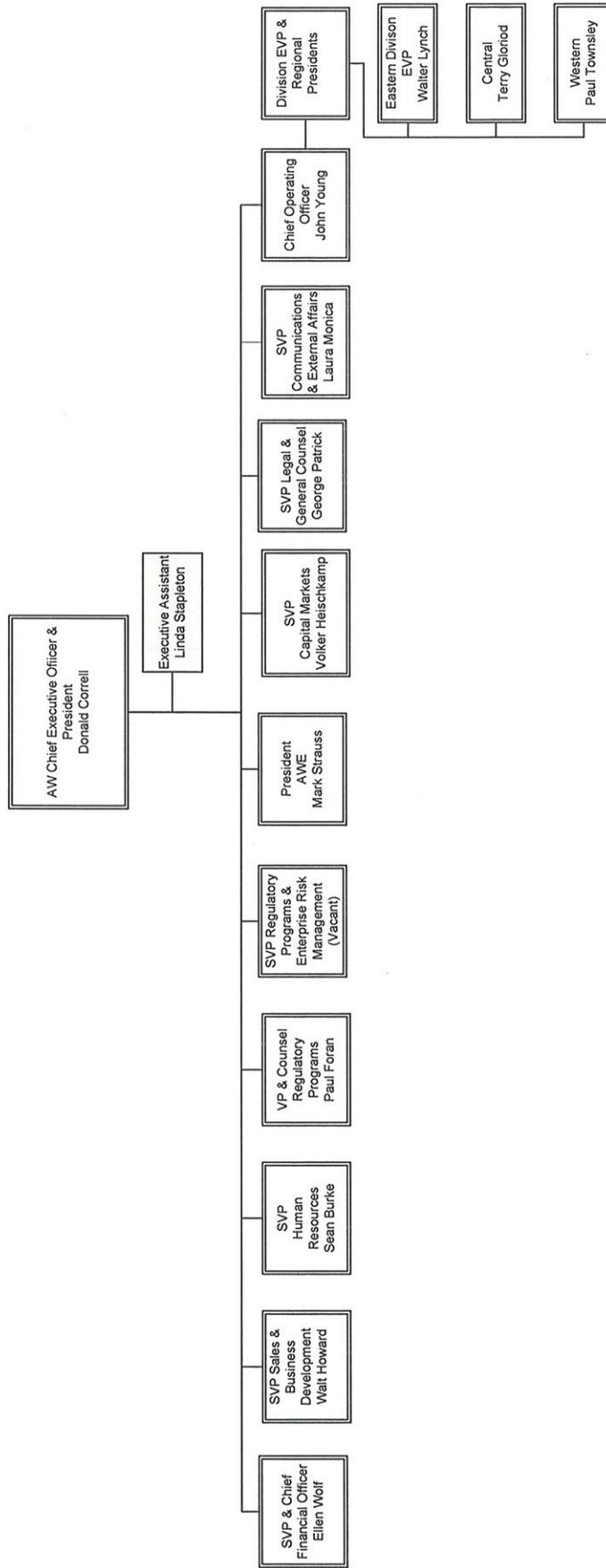
Organizational Chart – American Water Works Company, Inc.







American Water – Executive Team

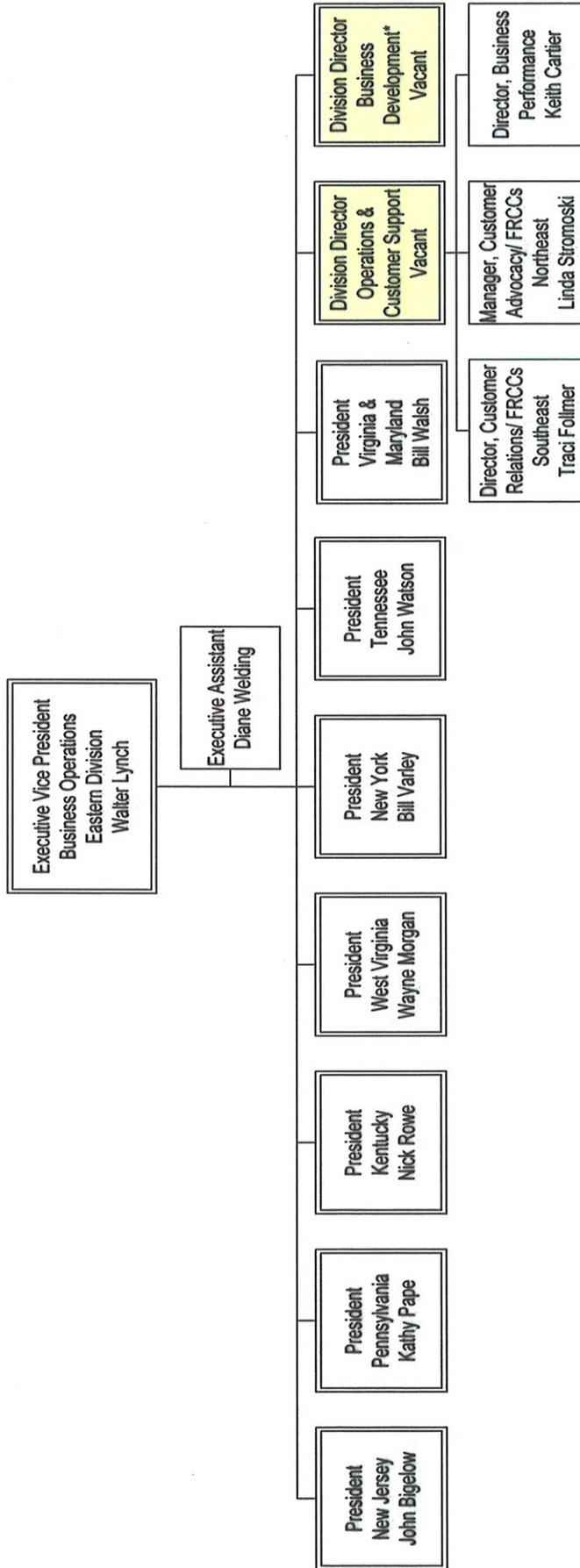


Note: Division EVP & Regional Presidents are members of the Executive Management Team





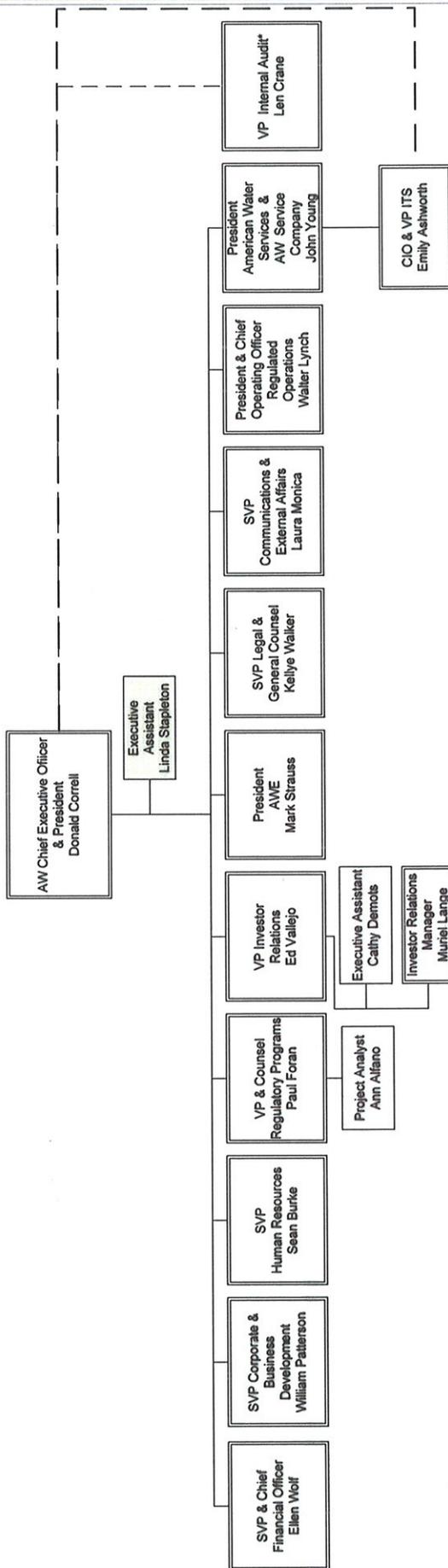
Eastern Division



*Dual reporting relationship to BD



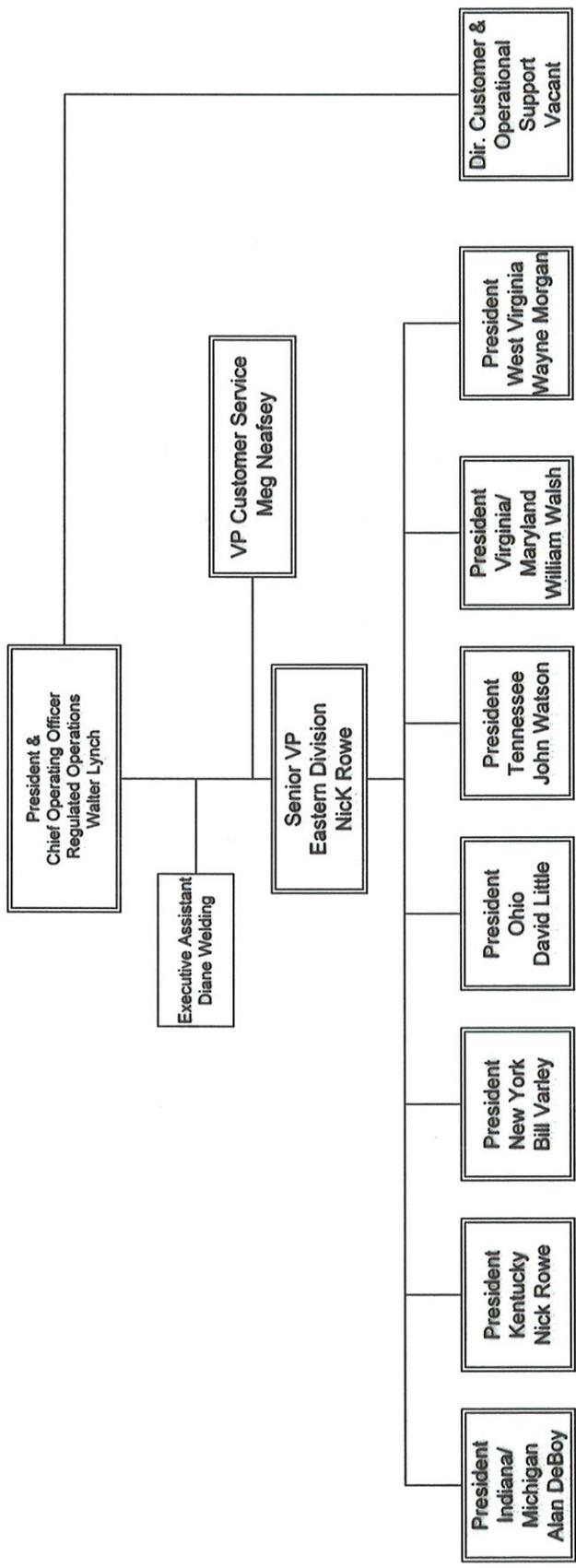
American Water – Executive Team



Note: *Vice President of Internal Audit reports directly to the Chairperson of the Board of Directors' Audit Committee, administratively to the Chief Financial Officer and dotted-line to the Chief Executive Officer.



Regulated Operations – Eastern Division



Kentucky American Water Company
Attachment to Response KAW_R_AGDR1_NUM35
Subpart G - Kentucky American Water Senior Leadership

As of 1/01/08		
Nick Rowe	President	KAWC
Vacant	Vice-President Operations	KAWC
Peggy Slone	Executive Asstistant	KAWC
Donna Braxton	Manager Human Resources	Eastern Division KY & TN (Service Company)
Susan Lancho (Acting)	Manager External Communications	KAWC
Susan Lancho	Manager Internal Communications	KAWC
Vacant	Director Engineering	KAWC
D. Whitehouse	Director Gov't Affairs	KAWC
Steve Snowden	Sr. Manager Business Development	Eastern Division KY & TN (Service Company)

As of 1/01/09		
Nick Rowe	President KAW & Sr. VP Eastern Division	Service Company
Keith Cartier	Vice-President Operations	KAWC
Peggy Slone	Executive Asstistant	KAWC
Donna Braxton	Manager Human Resources	Eastern Division KY & TN (Service Company)
Brian Wright	Manager External Affairs	KAWC
Susan Lancho	Manager Internal Communications	KAWC
Lance Williams	Director Engineering	KAWC
Vacant	Manager Finance	KAWC
John-Mark Hack	Director Gov't Affairs	KAWC
Steve Snowden	Sr. Manager Business Development	Eastern Division KY & TN (Service Company)

As of 1/01/10		
Nick Rowe	President KAW & Sr. VP Eastern Division	Service Company
Keith Cartier	Vice-President Operations	KAWC
Peggy Slone	Executive Assistant	KAWC
Donna Braxton	Manager Human Resources	Central Division KY & TN (Service Company)
Raymond Golden	Manager External Affairs	KAWC
Susan Lancho	Manager Internal Communications	KAWC
Lance Williams	Director Engineering	KAWC
Mary Gina Money	Manager Finance	KAWC
John-Mark Hack	Director Gov't Affairs	KAWC
Steve Snowden	Sr. Manager Business Development	Eastern Division KY & TN (Service Company)

As of 1/01/11		
Cheryl Norton	President	KAWC
Keith Cartier	Vice-President Operations	KAWC
Erin O'Leary	Administrative Asssistant/Staff Support	KAWC
Donna Braxton	Manager Human Resources	Central Division KY & TN (Service Company)
Susan Lancho	Manager External Affairs	KAWC
Lance Williams	Director Engineering	KAWC
Mary Gina Money	Manager Finance	KAWC
John-Mark Hack	Director Gov't Affairs	KAWC
Steve Snowden	Sr. Manager Business Development	Central Division KY & TN (Service Company)

As of 1/01/12

Cheryl Norton	President	KAWC
Keith Cartier	Vice-President Operations	KAWC
Erin O'Leary	Administrative Assistant/Staff Support	KAWC
Lorraine Cecil	HR Generalist	Central Division KY & TN (Service Company)
Susan Lancho	Manager External Affairs	KAWC
Lance Williams	Director Engineering	KAWC
Mary Gina Money	Manager Finance	KAWC
John-Mark Hack	Director Gov't Affairs	KAWC

As of 1/01/13

Cheryl Norton	President	KAWC
Keith Cartier	Vice-President Operations	KAWC
Peggy Slone	Executive Asst.	KAWC
Valoria Armstrong	Manager Human Resources	Central Division KY & TN (Service Company)
Susan Lancho	Manager External Affairs & Gov't Affairs	KAWC
Lance Williams	Director Engineering	Central Division KY & TN (Service Company)
Gina Mary Money	Manager Finance	Central Division KY & TN (Service Company)

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Cheryl D. Norton/Keith Cartier/Linda C. Bridwell

- 36.** G – Please provide a ten-year history of total Company expenditures for main replacements. Include a breakdown of the number of feet, diameter, and type of mains replaced, by year.

Response:

Please refer to the response to Item 55 of the Commission's Second Request for Information for the information about the expenditures for main replacements. For the additional information please refer to the attachment.

Footages Replace by Year													
Size	Type	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total by Size/Type
1	CI							356			140	260	756
1	Copper								60				60
1	Galv				850								850
1.5	Lead				351								351
2	CI		450		1588		567	1544	814	1699	220	368	7250
2	PVC		990		200				33		400		1623
3	AC				840								840
3	PVC		1326						167	150			1643
4	AC				600			12771				536	13907
4	CI		2191					252		1136	2511	3493	10183
4	DI							19	250	9	20	1845	2143
4	PVC				100						700		800
6	AC		25		2538	6532	54	1036	6251	1631	3213	328	21735
6	CI		35	879			822	5313	6252	7716	5749	5737	35645
6	DI						94	958	22	1026	123		2223
6	PVC									206			206
8	AC								1098	2	1080		2180
8	CI		263	80			245	812	2116	6005	550	54	10577
8	DI		120			8	58	437	1682	2138	713		5156
8	PVC				208								273
10	AC							276					276
10	CI		900		400					55			1355
12	AC							11122	539	757			12418
12	CI						82		180	3340	1140		4742
12	DI		964		120	1038		222	1011	221	14		3590
16	AC								23				23
16	DI						15		5782		955		6752
16	LJ							205					205
20	DI								74		198		272
24	CI								2034		618		2652
24	DI							2054	245	1094			3393
Totals By Year		4386	7264	959	7444	7929	1937	37377	28633	27185	18344	12621	154079

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: Gary M. VerDouw/Keith Cartier/Linda C. Bridwell

37. G – Please explain in detail how the Company's proposed Distribution System Improvement Charge ("DSIC") would affect KAWC's current rate of main replacement discussed on page 14 of Mr. Williams' Direct Testimony.

Response:

Please refer the responses to Item 50, Item 52, and Item 102 of the Commission's Second Request for Information.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: Gary M. VerDouw

- 38.** G - Reference page 21 of Mr. VerDouw's Direct Testimony: For each state that KAWC claims has adopted a DSIC or DSIC-equivalent tariff rider mechanism, please indicate, state-by-state, whether or not the referenced state:
- a. Includes Account 334 – Meters and Meter Installations in qualified DSIC expenditures;
 - b. Permits the DSIC mechanism to be reconciled; and,
 - c. Includes a DSIC cap of 10% or greater between base rate cases.

Response:

	<u>Meters and Meter Installations</u>	<u>Reconciliation</u>	<u>DSIC Cap of 10% or greater</u>
Connecticut	Yes	Yes	
Delaware	Yes	Yes	
Illinois	Yes	Yes	
Indiana	Yes	Yes	
Missouri		Yes	Yes
New Hampshire	Yes		
New Jersey		Yes	
New York		Yes	
Ohio	Yes		Yes
Pennsylvania	Yes	Yes	

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: **Paul R. Herbert**

39. RD – Please provide a copy of all class cost-of-service study workpapers in electronic format.

Response:

Please refer to Item 14 of the Commission's First Request for Information in this case.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Paul R. Herbert**

40. RD – Please identify any change(s) made to the cost-of-service study methodology sponsored in this proceeding compared to the methodology employed in the Company's last base rate case, and provide a detailed explanation in support of such change(s).

Response:

There were no changes made to the cost-of-service methodology sponsored in this proceeding compared to the methodology employed in the Company's last base rate case.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Paul R. Herbert

41. RD – Reference Exhibit 36 at page 10 of 46.

- a. Please quantify the amount of Other Water Revenue that is included in Commercial revenues, at present and proposed rates; and
- b. Please identify the type/source of Other Water Revenues quantified in part (a) and explain why such revenues should be assigned exclusively to the Commercial class.

Response:

- a. Under present rates, the Other Water Revenue included in Commercial revenues is \$44,326. Under proposed rates, the Other Water Revenue included in Commercial revenues is \$56,410.
- b. The source of the revenue is from the metering of tapped hydrants used for various purposes including construction sites.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Paul R. Herbert**

- 42.** RD - Reference page 7, lines 20-26 of Mr. Herbert's Direct Testimony. Please provide a copy of all documents relied upon by Mr. Herbert to determine the class demand ratios appearing in the Company's class cost-of-service study.

Response:

The class demand ratios were determined by Commission Order in Docket 2000-120 as a result of the Customer Class Water Demand Study-1999 performed by Burgess & Niple. Please refer to the attached report.

Customer Class Water Demand Study - 1999

Kentucky-American Water Company

April 2000



BURGESS & NIPLE

KENTUCKY-AMERICAN WATER COMPANY

CUSTOMER CLASS WATER DEMAND STUDY – 1999

APRIL 2000

**Burgess & Niple, Limited
Engineers and Architects
5085 Reed Road
Columbus, OH 43220**

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INTRODUCTION

During the summer of 1999, June, July, August and September, the Kentucky-American Water Company (KAWC) installed *FloSearch* devices on a representative sample of customers in the commercial, other public authority (OPA), industrial and other water utility (OWU) customer classes in order to perform a customer class water demand study. Meters were read on a daily basis for 204 residential customers during the months of June, July, August and September in order to estimate the maximum day demand factor for the residential customer class.

During the summer of 1997 a similar type of demand study was also prepared but in the 1997 study, because of technical difficulties, the detailed information required to estimate the residential class maximum day demand was lost.

The purpose of a demand study is to determine the maximum day and maximum hour water use requirements (load factors) for each customer class. The estimated maximum day and maximum hour load factors that were calculated in the 1997 and 1999 demand studies should be considered in conjunction with other factors when future KAWC Cost of Service studies are prepared in order to allocate costs attributable to peak water demand requirements. Many components in water systems are designed and sized based upon maximum system demands. The cost of operation is also affected by peak demands placed upon the water system. Therefore, it is desirable to have information on customer class load factors for use in the cost allocation process.

However, the maximum day demand factors calculated in the 1999 demand study for the commercial, OPA, Industrial and OWU customers may need to be tempered because the 1999 summer was unusually hot and dry. There were also drought conditions. These conditions created unusually high demand factors for these customers. Because of the drought conditions, water use such as lawn watering was restricted. The water use restrictions during the summer of 1999 actually lowered the maximum day demand factors for the residential customer class. The five highest maximum day demand factors for the residential customers were 1.57, 1.59, 1.64, 1.66 and 1.77. The average is 1.65, which equals 165 percent. Normally the residential customer class maximum day demand is about 200 percent. Because of the water use restrictions, you can justify increasing the residential customer class demand factor 10 to 20 percent. If you increased the average of the five highest demand factors by 15 percent the result would be 190 percent (165 x 1.15).

A comparison of the 1997 and 1999 customer class demand factors are shown in the following table. The percents are based on the average of the five highest maximum day and maximum hour demand factors for all of the customer classes. The maximum day demand factor for the residential customer class was increased to 190 percent from 165 percent as previously stated.

Customer Class	Maximum Day		Maximum Hour	
	1997 Demand (%)	1999 Demand (%)	1997 Demand (%)	1999 Demand (%)
Commercial	167	185	276	262
OPA	160	174 / 168	225	208
Industrial	153	169	203	213
OWU	144	169	161	191
Residential	N/A	190	N/A	N/A

The demand study was a joint effort between KAWC and Burgess & Niple (B&N). KAWC performed all of the *FloSearch* water metering functions and B&N analyzed the raw data to determine customer class demands.

Auxiliary *FloSearch* metering equipment was installed on existing water meters to determine and record hour-by-hour water demands. Commercial, OPA, industrial and OWU customers were monitored during the months of June, July, August and September. Approximately 25 percent of the OPA customer class water usage was monitored with the *FloSearch* equipment, 74 percent of the industrial class water usage, 50 percent of the OWU class water usage, and 4 percent of the commercial class water usage. The largest number of customers that were successfully monitored were 18 commercial, 10 OPA, 6 industrial, and 4 OWU. More commercial, OPA and OWU customers were monitored than the number of customers indicated above but the *FloSearch* equipment malfunctioned on about 10 percent of the total number of customers that were monitored. The largest numbers of customers monitored were commercial customers but there are a total of about 7,709 commercial customers served by KAWC. There are about 430 OPA customers, 15 industrial customers and 8 OWU customers.

The report explains in detail how the maximum day and maximum hour load factors for each customer class were calculated. The following is a list of schedules in the demand study report.

Schedule 1 – Average Water Usage by Customer Class for the Monitored Customers

Schedule 2 – Commercial Class Composite Maximum Day

Schedule 2A – Commercial Class, Composite Maximum Hour

Schedule 3 – OPA Class, Composite Maximum Day

Schedule 3A – OPA Class, Composite Maximum Hour

Schedule 4 – Industrial Class, Composite Maximum Day

Schedule 4A – Industrial Class, Composite Maximum Hour

Schedule 5 – OWU, Composite Maximum Day

Schedule 5A – OWU Composite, Maximum Hour

Schedule 6 – Residential, Maximum Day Demand

Back up information is available to support the data shown on the schedules in this report. However, any request for supporting information should be as specific as possible in order to minimize the amount of backup information that will have to be retrieved and supplied.

MAXIMUM DAY DEMAND LOAD FACTORS

Schedule 4, the industrial user class composite maximum day demand information, will be used to explain how the maximum day load factors were calculated for each customer class. The peak maximum day demand factor, 1.75 occurred on July 30. The demand factor was calculated as follows. On Schedule 4, page 2/4 the columns with customer headings list the water usage in cubic feet that was recorded by the *FloSearch* equipment. On July 30, the customers monitored included Crest Products, General Electric, Pepsi Cola, Proctor and Gamble, The Trane Co., and Toyota. The total monitored usage was 505,826 cu. ft. which is equal to 3,793,695 gallons. The average daily billed usage for the six customers that were monitored, 2,162,679 gallons/day, is shown on Schedule 1 page 8/8 report page 17. Schedule 1 shows the average daily billed usage in gallons/day for all of the groups of customers that were monitored in each customer class. The demand factor was calculated by dividing the *FloSearch* usage by the average usage ($3,793,695 \text{ gallons} / 2,162,679 = 1.75$).

The maximum day and also the maximum hour demand factor for the customer classes will vary from year to year. In particular, 1999 was drought influenced. It would be appropriate to set the demand factors based on the average of the five highest demand factors that were calculated from the 1999 *FloSearch* data. This would especially be appropriate for the commercial customer class since only 4 percent of the commercial water usage was monitored.

The five highest maximum day demand factors for the industrial customer class based on monitoring six customers occurred on July 30, August 13, August 11, July 7, and July 28. The demand factors were 1.75, 1.69, 1.68, 1.67, and 1.66. The average is 1.69.

The demand study factors shown in the table on page 2 were based on the average of the five highest demand factors.

The five highest maximum day demand factors for the commercial, OPA, and OWU customer classes are as follows.

Commercial Customers Class - Schedule 2

Dates = June 9, 8, 21 and July 19 and 26

Factors = 2.16, 2.08, 1.89, 1.58 and 1.56

Average = 1.85

On June 9, 8 and 21 there were only 13 customers monitored. The dates of July 19 and 26 were used because 17 and 16 customers were monitored on those days including Central Baptist Hospital, which is one of the typical large commercial customers. Factors higher than 1.58 and 1.56 occurred in June but fewer customers were monitored.

OPA Customer Class - Schedule 3

Dates - July 23, 31, 30, 28 and 26

Factors = 1.78, 1.74, 1.73, 1.72 and 1.71

Average = 1.74

On the dates of July 23, 31, 30, 28 and 26 only 7 customers were monitored but the total average usage for these customers is equal to 88 percent of the total average usage for the largest number of OPA customers that were monitored. The dates of August 11 and 13 where maximum day usage rates of 1.54 and 1.59 occurred may want to be considered because 8 OPA customers were monitored including the UK Chemistry/Physics Building and the UK Dormitory Tower which are typical OPA customers. These customers were not monitored in July. The total average usage for the 8 customers monitored on August 11 and 13 is equal to 99 percent of the total average usage for the largest number of OPA customers that were monitored. If August 11 and 13 are used the maximum day demand factors would be 1.78, 1.74, 1.73, 1.59, and 1.54. The average would be 1.68 versus the average of 1.74 as previously calculated.

OWU Customer Class - Schedule 5

Dates = July 18, Aug 1, 4, and 7, July 17

Factors = 1.74, 1.71, 1.68, 1.68, and 1.66

Average = 1.69

Because of the 1999 drought conditions, the 1999 maximum day demand factors for the OWU customers are considerably higher than the 1997 OWU maximum day demand factors, 1.69 vs. 1.44. Because of the unusual drought conditions, the 1999 OWU maximum day demand factors probably should not be used in any future KAWC cost of service studies because the factors are higher than normal. On page 2 in the previous customer class demand study we prepared for the KAWC we made the following statement regarding the OWU maximum day demand. "OWU customers usually have their own storage facilities that help meet their maximum demands and some of the customers buy water from more than one water utility. Also the OWU customers may consist of a mix of residential, commercial, OPA and industrial customers that would help reduce the maximum demand factors."

MAXIMUM HOUR DEMAND LOAD FACTORS

Schedule 4A, the industrial user class maximum hour demand information, will be used to explain how the maximum hour load factors were calculated for each customer class. The first step in the maximum hour demand factor analysis was to select the day to analyze the hourly usage for the customer class. It is not necessary and would be too time consuming and expensive to analyze hourly usage for every day where the customers were monitored with the *FloSearch* equipment because it is reasonably certain that the maximum hour usage will occur on the maximum day. The day selected for maximum hour analysis for the industrial class was July 30 which is the highest maximum day demand for the industrial customers that were monitored.

Schedule 4A, report page 49, contains the hourly usage in cubic feet (cu. ft.) recorded by the *FloSearch* equipment for each of the customers that were monitored. The peak maximum hour demand factor, 2.36, occurred at the 11:00 hour. The usage recorded for each hour is the amount of water used during the previous hour. Therefore, the usage for the 11:00 hour represents the actual usage for the hour from 10:00 a.m. to 11:00 a.m. The 0:00 hour is midnight which is the beginning of the day. The total usage for the 11:00 hour was 28,355.98 cu. ft. which is equal to 212,670 gallons/hour. The total gallons per hour was multiplied by 24 to arrive at a daily rate based on maximum hour usage. The daily rate was then divided by the average daily usage for the monitored customers to determine the maximum hour demand factor ($5,104,0676 \text{ gallons} / 2,162,679 \text{ gallons} = 2.36$).

As previously stated, like the maximum day demand factor, the maximum hour demand factor will vary from year to year. Therefore, if this data were to be used it is appropriate to base the cost of service allocation maximum hour demand factor on the average of the five highest maximum hour demand factors calculated from the 1999 *FloSearch* data. Also, as previously stated, this is appropriate for the commercial customer class since only 4 percent of the commercial water usage was monitored.

The five highest maximum hour demand factors on August 26 occurred at the 11:00, 9:00, 23:00, 4:00 and 8:00 hourly recordings. The demand factors were 2.36, 2.16, 2.08, 2.05 and 2.01. The average is 2.13.

The days that were analyzed for maximum hour demands for the commercial, OPA and OWU customers were June 21 for commercial, July 23 for OPA, and July 18 for OWU. The days were the

peak maximum day demand days except for the commercial customer class. On July 9 when the highest commercial maximum day demand occurred 13 customers were monitored but the total average usage for the 13 customers was only 18 percent of the total average usage for the largest number of commercial customers that were monitored. The 13 customers monitored on June 21 represents 33 percent of the total average usage for the largest number of commercial customers that were monitored. Also on June 21 Little Joe's Mobile Home was monitored but Patchen Village Car Wash was not. Little Joe's Mobile Home is a more typical commercial customer than Patchen Village Car Wash is. The maximum hour demand factor for June 9 was calculated but the average for the five highest maximum hours was 4.20 which is unreasonably high compared to the commercial class maximum hour demand factors calculated in previous customer class demand studies.

The five highest maximum hour demand factors for the Commercial, OPA, and OWU customer classes is as follows:

Commercial Customer Class - Schedule 2A

Date = June 21

Times = 21:00, 20:00, 23:00, 0:00 and 6:00

Factors = 2.91, 2.87, 2.65, 2.37 and 2.29

Average = 2.62

OPA Customer Class - Schedule 3A

Date = July 23

Times = 11:00, 14:00, 13:00, 12:00 and 16:00

Factors = 2.27, 2.07, 2.03, 2.01 and 2.00

Average = 2.08

OWU Customer Class - Schedule 5A

Date = July 18

Times = 22:00, 19:00, 20:00, 21:00 and 11:00

Factors = 1.97, 1.92, 1.89, 1.89 and 1.86

Average = 1.91

KAWC -- CUSTOMER DEMAND STUDY													Page 1 / 8				
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999																	
SCHEDULE 1																	
Monitored Customers	Average Usage CCF / Day	Average Usage Gals. / Day	Data Used for Max Day & Max Hour Demand Factors														
			June 1 - 2	June 3	June 4 - 7	June 8 - 9	June 10	June 11 - 13	June 14 - 16	June 17	June 18 - 22	June 23					
COMMERCIAL																	
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735
Aramark Uniform Service	129.59	97,193															
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Emerson Center	15.82	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865
First Baptist Church	0.15	113															
Hartland Home Owners	1.64	1,230		1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893
Hyatt Regency	78.80	59,100															
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985
Little Joe's Mobile Hms.	89.34	67,005															
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Parkhills Apts. LTD	6.25	4,688															
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020
Total	605.83	454,373	223,629	225,047	230,965	83,005	148,780	150,010	147,362	148,592	147,362	148,592	147,362	148,592	147,362	148,592	297,970

		KAWC -- CUSTOMER DEMAND STUDY												Page 2 / 8	
		SCHEDULE 1													
		CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999													
Monitored Customers	Average Usage CCF / Day	Average Usage Gals. / Day	Data Used for Max Day & Max Hour Demand Factors												
			June 24	June 25	June 26 - 27	June 28 - 29	June 30	July 1 - 2	July 3 - 5	July 6	July 7 - 9	July 10 - 11			
COMMERCIAL															
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735
Aramark Uniform Service	129.59	97,193											97,193	97,193	
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Emerson Center	15.82	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865
First Baptist Church	0.15	113											113	113	
Hartland Home Owners	1.64	1,230	1,230					1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893	893	893	893
Hyatt Regency	78.80	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985
Little Joe's Mobile Hms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020
Total	605.83	454,373	357,070	355,840	354,422	354,422	357,070	357,070	357,070	357,070	357,183	454,376	454,376	395,276	286,105

		KAWC -- CUSTOMER DEMAND STUDY												Page 3 / 8	
		SCHEDULE 1													
		CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999													
		Data Used for Max Day & Max Hour Demand Factors													
Monitored Customers	Average Usage CCF / Day	Average Usage Gals. / Day	July 12	July 13	July 14 - 15	July 16	July 17	July 18	July 19 - 23	July 24 - 25	July 26	July 27 - 31			
COMMERCIAL															
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	
Aramark Uniform Service	129.59	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	
Emerson Center	15.82	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	
First Baptist Church	0.15	113	113	113	113	113	113	113	113	113	113	113	113	113	
Hartland Home Owners	1.64	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893	893	893	
Hyatt Regency	78.80	59,100													
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	
Little Joe's Mobile Hrms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	
Total	605.83	454,373	383,411	395,276	383,411	395,276	383,411	395,276	383,411	298,083	395,276	286,218	383,411	395,276	

KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 1												
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999												
Monitored Customers	Average Usage CCF / Day	Average Usage Gals. / Day	Data Used for Max Day & Max Hour Demand Factors									
			Aug. 1	Aug. 2 - 4	Aug. 5 - 7	Aug. 8	Aug. 9 - 14	Aug. 15	Aug. 16	Aug. 17 - 20	Aug. 21 - 22	Aug. 23 - 28
COMMERCIAL												
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735
Aramark Uniform Service	129.59	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Emerson Center	15.82	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865
First Baptist Church	0.15	113	113	113	113	113	113	113	113	113	113	113
Hartland Home Owners	1.64	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893
Hyatt Regency	78.80	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985
Little Joe's Mobile Hms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020
Total	605.83	454,373	296,853	394,046	382,181	284,988	382,181	284,988	382,181	284,988	382,181	344,088

		KAWC -- CUSTOMER DEMAND STUDY										Page 5 / 8	
		SCHEDULE 1											
		CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999											
		Data Used for Max Day & Max Hour Demand Factors											
Monitored Customers	Average Usage CCF / Day	Average Usage Gals. / Day	Aug.		Sept.		Sept.		Sept.		Sept.		
			29	30 - 31	1 - 20	21	22 - 23	24 - 30					
COMMERCIAL													
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	
Aramark Uniform Service	129.59	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	
Emerson Center	15.82	11,865											
First Baptist Church	0.15	113	113	113	113	113	113	113	113	113	113	113	
Hartland Home Owners	1.64	1,230											
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893	
Hyatt Regency	78.80	59,100										59,100	
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	
Little Joe's Mobile Hms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	
Total	605.83	454,373	284,988	382,181	382,181	234,221	228,618	228,618	228,618	228,618	287,718	287,718	

KAWC -- CUSTOMER DEMAND STUDY												Page 6 / 8						
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999																		
SCHEDULE 1																		
Monitored Customers	Average Usage CCF / Day	Average Usage Gals. / Day	Data Used for Max Day & Max Hour Demand Factors								July 9 - 31	July 3 - 8	July 1 - 2	July 24 - 30	July 17 - 23	June 9 - 16	June 4 - 8	June 1 - 3
			3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878								
OTHER PUBLIC AUTH.																		
Ag. Science Dept. , UK	5.17	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878
Federal Medical Center	468.90	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675
Shephards House Inc.	1.46	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095
UK Chem/ Physic Bldg	63.58	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685
UK Cooling Plant	107.57	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678
UK Dormitory Tower	89.45	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088
UK Heating Plant																		
UK Horticulture	66.90	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175
UK Hospital	339.87	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903
VA Hospital , Fed. Govt.	175.63	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723
US Postal Service	0.82	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615
Total	1319.35	999,513	484,531	485,626	485,011	739,914	790,089	742,404	941,215	874,127	988,900							

		KAWC -- CUSTOMER DEMAND STUDY										Page 7 / 8
		SCHEDULE 1										
		CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999										
		Data Used for Max Day & Max Hour Demand Factors										
Monitored Customers	Average Usage CCF / Day	Average Usage Gals. / Day	Aug. 8 - 17	Aug. 18	Aug. 19 - 29	Aug. 30	Aug. 31	Sept. 1 - 16	Sept. 17 - 30			
OTHER PUBLIC AUTH.												
Ag. Science Dept. , UK	5.17	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878	3,878		
Federal Medical Center	468.90	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675		
Shephards House Inc.	1.46	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095		
UK Chem/ Physic Bldg	63.58	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685	47,685		
UK Cooling Plant	107.57	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678		
UK Dormitory Tower	89.45	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088		
UK Heating Plant												
UK Horticulture	66.90	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175		
UK Hospital	339.87	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903	254,903		
VA Hospital , Fed. Govt.	175.63	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723		
US Postal Service	0.82	615	615	615	615	615	615	615	615	615		
Total	1319.35	989,513	987,805	988,900	989,515	985,637	989,515	941,830	686,927			

		KAWC -- CUSTOMER DEMAND STUDY												Page 8 / 8	
		SCHEDULE 1													
		CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999													
		Data Used for Max Day & Max Hour Demand Factors													
Monitored	Average Usage	Average Usage	June 1 - 4	June 5 - 7	June 8 - 30	July 1 - 31	Aug. 1 - 31	Sept. 1 - 6	Sept. 7	Sept. 8 - 30					
Customers	CCF / Day	Gals. / Day	June 1 - 4	June 5 - 7	June 8 - 30	July 1 - 31	Aug. 1 - 31	Sept. 1 - 6	Sept. 7	Sept. 8 - 30					
INDUSTRIAL															
Crest Products Inc.	10.98	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	
General Electric	335.39	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543	
Pepsi Cola	93.28	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960	
Proctor & Gamble	43.11	32,333	32,333	32,333	32,333	32,333	32,333	32,333	32,333	32,333	32,333	32,333	32,333	32,333	
The Trane Company	204.48	153,360	153,360	153,360	153,360	153,360	153,360	153,360	153,360	153,360	153,360	153,360	153,360	153,360	
Toyota	2196.33	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	
Total	2883.57	2,162,678	1,976,986	2,130,346	2,162,679	2,130,346	2,162,679	2,162,679							
OTHER WATER UTILITIES															
Lex. South Elkhorn(903)	671.95	503,963	503,963	503,963	503,963	503,963	503,963	503,963	503,963	503,963	503,963	503,963	503,963	503,963	
Lex. South Elkhorn(892)	1.01	758	758	758	758	758	758	758	758	758	758	758	758	758	
City of Midway	180.03	135,023											135,023		
Spears Water	161.10	120,825		120,825	120,825	120,825	120,825	120,825	120,825	120,825	120,825	120,825	120,825	120,825	
Total	1014.09	760,568	504,721	625,546	760,569	760,569									

		KAWC -- CUSTOMER DEMAND STUDY												Page 1 / 12	
		SCHEDULE 2													
		COMMERCIAL USER CLASS - COMPOSITE MAX DAY													
		Aramark		Bob Evans		Central		Dismas		Emerson		Hartland			
		Uniform	Restaurant	Baptist	Hospital	Days Inn	Charities Inc	Center	Church	Home	Hoagland	Holiday	Home	Cleaners	
		Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	
June	1		426	24,050		635	304	1,699			512	169			
	65		410	23,226		841	347	1,843			525	128			
	502		393	17,023		1,067	353	1,694			621	138			
	826		496	21,528		1,498	360	1,794		290	575	262			
	634		541	17,191		1,875	387	1,597		290	170	203			
	326		566	17,481		1,522	448	1,603		290	154	1			
	610		564	22,454		1,451	383	1,836		732	486	312			
	534		524			1,880	381	1,527		850	473	286			
	468		392			1,238	335	1,729		869	474	288			
	666		410			1,558	391	1,606			486	253			
	690		536			1,223	541	1,796		815	474	67			
	634		650			2,568	321	1,762		813	170	26			
	324		646			1,736	388	1,538		804	150	18			
	36		469			1,381	337	1,586		821	482	129			
	425		460			1,669	420	1,662		835	530	363			
	82		486			1,503	388	1,771		830	470	302			
	442		520			1,997	336	1,623			467	106			
	788		558			1,997	435	1,724		815	449	366			
	821		683			2,181	346	1,750		811	175	639			
	341		800			1,914	383	1,512		811	159	637			
	651		666			2,301	377	1,748		812	487	354			
	656		480			1,989	380	1,704		795	513	118			
	695		477	26,405		2,374	350	1,627		821	466	158			
	3		515	24,550		2,470	334	1,533			521	128			
	323		665	26,383		1,922	431	1,618		325	465	77			
	503		791	21,773		1,587	444	1,477			176	34			
	70		743	21,421		1,400	376	1,530			154	25			
	17		586	26,382		1,372	520	1,637			497	137			
	109		434	26,839		1,689	328	1,652			489	129			
	324		445	25,524		1,819	321	1,537		580	471	117			
Total	12,566		16,332	342,230		50,657	11,445	49,715		14,009	12,241	5,970			

SCHEDULE 2												Page 2 / 12
June 1999	Hyatt Regency	Lexington Country Club	Little Joe's Mobile Hms	Patchen Village Car Wash	Patchen Wilkes Farm	Parkhills Apts LTD	Wendy's Hamburgers					Cu. Ft.
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.
1		7,389			527							107
2		657			482							128
3		862		153	516							136
4		5,089		163	550			529				137
5		11,440		218	458			743				149
6		7,469		225	740			773				138
7		9,504		152	1,372			734				172
8		14,717		149	931			645				128
9		15,563		132	1,588			679				146
10		16,409	8,529	131	1,453			658				151
11		19,566	8,742	152	2,089			746				164
12		16,350	8,437	175	1,359			744				155
13		16,141	9,237	211	1,689			747				152
14		8,726	9,102		1,841			656				169
15		1,149	8,665		519			653				135
16		4,628	8,886		508			642				153
17		9,049	8,311		516			662				146
18		13,907	8,425		720			692				153
19		10,577	8,754		881			689				163
20		15,584	9,191		694			891				124
21		19,341	8,726		1,139			669				145
22		17,092	8,719		1,249			627				139
23		19,774	8,381	108	786			655				191
24	11,218	8,626	8,680		523			588				138
25	11,045	628	8,590	101	712			743				168
26	11,571	556	9,341	207	742			810				113
27	9,123	2,140	8,890	103	465			731				109
28	7,471	533	8,994		704			649				184
29	6,355	450	8,877		726			616				138
30	7,405	639	9,165	133	511			632				141
Total	64,188	274,555	184,642	2,513	26,990			18,603				4,372

SCHEDULE 2													Page 5 / 12
July 1999	Hyatt Regency	Cu. Ft.	Lexington Country Club	Little Joe's Mobile Hms	Patchen Village		Patchen Wilkes Farm		Parkhills Apts LTD		Wendy's Hamburgers		
					Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	
1	7,241	553	8,737	160	775	619	116						
2	10,056	1,779	8,174	155	1,157	724	148						
3	12,549	525	8,490	165	1,263	610	119						
4	14,077	7,275	8,934	145	1,759	664	129						
5	11,549	14,848	9,272	139	1,181	684	109						
6	7,760	25,576	9,092	123	1,209	690	141						
7		17,574	9,705	137	684	702	155						
8		18,246	8,076	118	1,031	679	149						
9		18,998	7,928	163	1,353	666	140						
10		8,404	8,548	189	528	648	116						
11		7,023	8,640	179	432	770	103						
12		15,497	8,695	121	486	655	148						
13		16,198	8,252	116	1,454	601	149						
14		15,258	8,388	123	1,566	650	176						
15		13,939	8,907	122	534	634	159						
16		13,974	8,035	159	618	754	155						
17		14,232	8,418	174	960	733	136						
18		16,167	8,920	188	481	737	129						
19		18,517	8,272	139	1,488	671	121						
20		8,558	8,213	338	709	705	163						
21		757	8,767	212	487	731	152						
22		360	8,684	125	652	715	169						
23		1,472	8,320	138	643	701	132						
24		6,301	8,661	201	842	851	205						
25		14,065	9,533	181	694	765	111						
26		20,270	8,655	145	1,212	774	113						
27		10,312	9,318	126	652	971	137						
28		15,463	8,221	122	1,205	937	133						
29		15,653	8,531	139	642	1,101	146						
30		16,435	7,788	142	1,670	983	123						
31		15,637	8,277	170	876	1,062	156						
Total		63,232	266,451	4,854	29,243	23,187	4,338						

SCHEDULE 2										Page 6 / 12
July 1999	Total Cu. Ft. / Day	Total Gals. / Day	Total Gals. / Day	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage Ratios				
1	58,731	440,483	18	454,376	0.97					
2	63,843	478,823	18	454,376	1.05					
3	50,217	376,628	17	357,183	1.05					
4	59,068	443,010	17	357,183	1.24					
5	65,594	491,955	17	357,183	1.38					
6	88,899	666,743	18	454,376	1.47					
7	72,002	540,015	17	395,276	1.37					
8	75,850	568,875	17	395,276	1.44					
9	78,387	587,903	17	395,276	1.49					
10	45,238	339,285	14	286,105	1.19					
11	41,095	308,213	14	286,105	1.08					
12	71,895	539,213	16	383,411	1.41					
13	74,595	559,463	17	395,276	1.42					
14	75,188	563,910	16	383,411	1.47					
15	73,310	549,825	16	383,411	1.43					
16	73,124	548,430	17	395,276	1.39					
17	56,603	424,523	16	383,411	1.11					
18	54,641	409,808	16	298,083	1.37					
19	83,355	625,163	17	395,276	1.58					
20	70,953	532,148	17	395,276	1.35					
21	63,545	476,588	17	395,276	1.21					
22	41,279	309,593	17	395,276	0.78					
23	34,765	260,738	17	395,276	0.66					
24	25,313	189,848	15	286,218	0.66					
25	53,233	399,248	15	286,218	1.39					
26	79,557	596,678	16	383,411	1.56					
27	71,170	533,775	17	395,276	1.35					
28	76,986	577,395	17	395,276	1.46					
29	75,761	568,208	17	395,276	1.44					
30	77,132	578,490	17	395,276	1.46					
31	60,794	455,955	17	395,276	1.15					
Total	1,992,123	14,940,923								

SCHEDULE 2												Page 8 / 12
August 1999	Hyatt Regency	Lexington Country Club	Little Joe's Mobile Hms	Patchen Village Car Wash	Patchen Wilkes Farm	Parkhills Apls LTD	Wendy's Hamburgers					
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	
1		9,150	8,496	171	438	1,111	192					
2		7,045	9,120	125	679	913	130					
3		18,208	7,684	117	1,387	888	200					
4		15,034	7,897	114	1,787	967	126					
5		14,847	8,136	116	1,644	811	265					
6		16,105	7,288	159	707	597	118					
7		15,112	8,009	186	789	563	197					
8		8,704	8,517	181	420	650	116					
9		6,065	8,069	124	442	563	119					
10		13,392	7,468	123	1,130	680	194					
11		15,787	7,855	111	588	577	130					
12		13,517	7,074	112	832	584	151					
13		14,576	7,141	145	1,315	540	144					
14		14,184	7,745	196	486	561	117					
15		13,103	8,169	171	510	665	106					
16		12,652	8,109	135	905	490	118					
17	6,423	17,179	7,062	118	592	527	118					
18	5,611	16,066	7,375	132	942	529	126					
19	6,461	15,011	7,404	133	3,317	498	132					
20	5,850	14,237	7,703	144	443	503	150					
21	6,119	13,652	8,088	148	1,443	594	122					
22	8,451	13,611	9,896	163	407	632	112					
23		13,942	8,232	111	521	562	113					
24		7,302	7,221	96	551	553	123					
25		167	7,976	93	400	511	126					
26		15	7,683	104	401	600	144					
27		219	7,542	130	535	553	148					
28		304	7,832	133	408	578	121					
29		6,460	7,943	141	396	538	107					
30		13,888	7,350	126	425	524	126					
31		13,903	7,300	81	520	533	111					
Total	38,915	353,437	243,384	4,139	25,360	19,415	4,302					

SCHEDULE 2												Page 11 / 12
September 1999	Hyatt Regency	Lexington Country Club	Little Joe's Mobile Hms	Patchen Village Car Wash	Patchen Wilkes Farm	Parkhills Apts LTD	Wendy's Hamburgers					Cu. Ft.
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.
1		14,086	7,118	92	722	514	152					
2		14,423	7,337	101	1,197	494	129					
3		15,482	6,882	127	571	577	136					
4		14,034	7,820	149	555	740	149					
5		15,250	7,949	137	417	596	111					
6		13,649	8,990	172	389	580	116					
7		15,302	7,339	101	744	590	139					
8		14,325	6,897	99	882	567	132					
9		16,129	7,320	108	1,114	551	135					
10		15,705	7,310	124	1,097	534	134					
11		15,508	7,819	149	560	641	106					
12		14,551	8,762	146	659	699	119					
13		8,191	7,727	126	469	486	123					
14		1,443	7,728	91	494	579	136					
15		10,041	7,663	105	794	546	125					
16		17,276	7,495	116	539	607	137					
17		15,226	7,412	134	451	569	135					
18		17,408	7,414	161	712	628	128					
19		14,061	7,597	148	1,417	609	105					
20		13,403	7,358	138	1,126	478	118					
21		10,281	7,494	113	854	509	130					
22		4,340	7,489		538	580	135					
23		3,032	7,450		609	555	145					
24	7,239	9,186	6,940		636	498	150					
25	8,679	10,241	7,667		564	650	109					
26	8,177	379	7,983		522	553	83					
27	5,908	2,636	3,712		429	544	131					
28	8,320	0	2,092		398	641	139					
29	9,085	3,373	7,096		356	554	121					
30	7,282	1,343	7,327		385	630	144					
Total	54,690	320,304	217,187	2,637	20,200	17,299	3,852					

		KAWC -- CUSTOMER DEMAND STUDY										Page 1 / 8					
		SCHEDULE 3															
		OPA USER CLASS - COMPOSITE MAX DAY															
June 1999	Ag. Science Dept., UK	Cu. Ft.	Federal Medical Center	Cu. Ft.	Shephards House Inc.	Cu. Ft.	UK Chem/ Physic Bldg.	Cu. Ft.	UK Cooling Plant	Cu. Ft.	UK Dormitory Tower	UK Heating Plant	UK Horticulture	Cu. Ft.	UK Hospital	Cu. Ft.	VA Hospital Fed. Govt.
1	641	46,388					6,301	20,634					89000993				
2	606	47,101					6,656	18,964									
3	601	46,093					6,261	12,832									
4	559	46,720			99	6,206	11,107										
5	547	46,614			319	5,158	12,762										
6	616	46,137			132	4,902	18,223										
7	687	48,129			110	6,662	32,241										
8	817	56,044			477	8,231	35,550										
9	695	49,455			362	6,830	33,814										
10	578	47,894			285	7,070	32,667										
11	628	48,028			321	6,671	31,113										
12	471	51,301			518	4,796	22,242										
13	532	49,426			820	4,607	19,091										
14	550	63,643			392	6,432	20,820										
15	468	47,678			98	7,579	7,780										
16	469	48,205			80	6,913	5,074										
17	503	55,976			108	6,541	10,685									41,152	
18	446	47,221			100	5,818	8,557									38,020	
19	403	46,413			66	4,628	11,664									34,458	
20	434	45,899			108	4,643	13,905									36,730	
21	591	47,554			59	2,764	19,888									44,292	
22	804	58,442			95	5,914	25,836									48,079	
23	629	49,741			97	6,532	31,136									51,735	
24	495	46,232			84	7,007	24,934									48,439	
25	600	57,144			79	3,880	26,889							3,244		48,439	
26	1,152	47,596			90	2,796	29,010							8,799		48,745	
27	942	48,847			94	4,216	32,534							3,398		41,821	
28	544	60,794			66	4,588	29,674							4,362		34,322	
29	551	45,667			92	7,956	26,691							3,551		45,270	
30	625	44,873			92	7,631	13,649							4,061		46,119	
Total	18,184	1,491,255			5,243	176,189	639,966							32,552		603,402	

SCHEDULE 3										Page 2 / 8
June 1999	US Postal Service	Cu. Ft.	Total Cu. Ft. / Day	Total Gals. / Day	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage			
1	22	73,986	554,895	554,895	5	484,531	1.15			
2	29	73,356	550,170	550,170	5	484,531	1.14			
3	30	65,817	493,628	493,628	5	484,531	1.02			
4	29	64,720	485,400	485,400	6	485,626	1.00			
5	22	65,422	490,665	490,665	6	485,626	1.01			
6	14	70,024	525,180	525,180	6	485,626	1.08			
7	79	87,908	659,310	659,310	6	485,626	1.36			
8	21	101,140	758,550	758,550	6	485,626	1.56			
9		91,156	683,670	683,670	5	485,011	1.41			
10		88,494	663,705	663,705	5	485,011	1.37			
11		86,761	650,708	650,708	5	485,011	1.34			
12		79,328	594,960	594,960	5	485,011	1.23			
13		74,476	558,570	558,570	5	485,011	1.15			
14		91,837	688,778	688,778	5	485,011	1.42			
15		63,603	477,023	477,023	5	485,011	0.98			
16		60,741	455,558	455,558	5	485,011	0.94			
17		114,965	862,238	862,238	6	739,914	1.17			
18		100,162	751,215	751,215	6	739,914	1.02			
19		97,632	732,240	732,240	6	739,914	0.99			
20		101,719	762,893	762,893	6	739,914	1.03			
21		115,148	863,610	863,610	6	739,914	1.17			
22		139,170	1,043,775	1,043,775	6	739,914	1.41			
23		139,870	1,049,025	1,049,025	6	739,914	1.42			
24		130,435	978,263	978,263	7	790,089	1.24			
25		146,136	1,096,020	1,096,020	7	790,089	1.39			
26		125,863	943,973	943,973	7	790,089	1.19			
27		125,317	939,878	939,878	7	790,089	1.19			
28		144,487	1,083,653	1,083,653	7	790,089	1.37			
29		131,137	983,528	983,528	7	790,089	1.24			
30		116,227	871,703	871,703	7	790,089	1.10			
Total	246	2,967,037	22,252,778	22,252,778						

		KAWC -- CUSTOMER DEMAND STUDY												Page 3 / 8	
		SCHEDULE 3													
		OPA USER CLASS - COMPOSITE MAX DAY													
		Shephards House Inc.	UK Chem/ Physic Bldg.	UK Cooling Plant	UK Dormitory Tower	UK Heating Plant	UK Horticulture	UK Hospital	VA Hospital						
		Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.
	Federal														
	Medical Center														
	Ag. Science Dept. , UK														
	Cu. Ft.														
1	487	56,902	123	29,157			4,983	46,187							
2	536	46,504	137	38,156			3,464	44,681							
3	509	45,442	112	40,435	4,944		4,786	38,759	21,346						
4	541	52,689	98	43,150	5,286		3,505	38,398	21,475						
5	675	48,334	117	42,923	6,131		10,986	40,987	23,144						
6	561	58,154	123	44,559	9,481		8,987	47,351	26,733						
7	560	49,941	95	32,905	9,928		5,915	47,441	26,414						
8	625	51,053	108	17,113	10,197		13,413	52,644	23,677						
9	547	57,004	96	33,521			20,776	50,376	26,304						
10	449	49,089	118	27,956			10,209	43,308	21,224						
11	355	50,887	138	7,357			7,707	37,172	17,036						
12	554	48,598	97	12,277			11,963	44,017	21,989						
13	602	53,596	99	14,333			19,214	48,744	22,475						
14	827	46,743	78	21,360			14,803	53,850	23,104						
15	566	55,778	108	29,022			7,757	52,214	25,756						
16	629	53,583	71	35,116			36,004	50,345	25,241						
17	593	50,348	212	28,343			13,181	45,048	22,496						
18	570	47,566	159	28,420			6,407	43,138	22,782						
19	667	58,502	100	38,769			36,740	49,585	28,528						
20	810	50,047	119	42,566			23,308	49,403	27,990						
21	618	56,525	117	43,580			7,112	50,515	26,967						
22	527	55,367	107	42,267			5,853	50,910	28,094						
23	744	64,289	112	45,404			10,913	54,451	31,991						
24	623	46,504	99	49,096			7,168	49,178	28,619						
25	848	46,847	133	40,840			7,892	48,168	24,498						
26	660	63,229	107	38,831			11,737	56,004	28,254						
27	676	57,480	120	39,837			9,710	55,813	27,151						
28	570	52,123	140	43,087			21,501	54,754	27,967						
29	567	50,674	118	42,793			18,906	52,992	28,482						
30	703	51,672	97	44,082			18,089	56,634	30,396						
31	656	58,294	121	48,111			20,530	49,785	25,113						
Total	18,855	1,633,764	3,579	1,085,366	45,967		403,519	1,502,852	735,246						

SCHEDULE 3										Page 4 / 8
July 1999	US Postal Service	Total Cu. Ft. / Day	Total Gals. / Day	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage Ratios				
1		137,839	1,033,793	6	742,404	1.39				
2		133,478	1,001,085	6	742,404	1.35				
3		156,333	1,172,498	8	941,215	1.25				
4		165,142	1,238,565	8	941,215	1.32				
5		173,297	1,299,728	8	941,215	1.38				
6		195,949	1,469,618	8	941,215	1.56				
7		173,199	1,298,993	8	941,215	1.38				
8		168,830	1,266,225	8	941,215	1.35				
9		188,624	1,414,680	7	874,127	1.62				
10		152,353	1,142,648	7	874,127	1.31				
11		120,652	904,890	7	874,127	1.04				
12		139,495	1,046,213	7	874,127	1.20				
13		159,063	1,192,973	7	874,127	1.36				
14		160,765	1,205,738	7	874,127	1.38				
15		171,201	1,284,008	7	874,127	1.47				
16		200,989	1,507,418	7	874,127	1.72				
17		160,221	1,201,658	7	874,127	1.37				
18		149,042	1,117,815	7	874,127	1.28				
19		212,891	1,596,683	7	874,127	1.83				
20		194,243	1,456,823	7	874,127	1.67				
21		185,434	1,390,755	7	874,127	1.59				
22		183,125	1,373,438	7	874,127	1.57				
23		207,904	1,559,280	7	874,127	1.78				
24		181,287	1,359,653	7	874,127	1.56				
25		169,226	1,269,196	7	874,127	1.45				
26		198,822	1,491,165	7	874,127	1.71				
27		190,787	1,430,903	7	874,127	1.64				
28		200,142	1,501,065	7	874,127	1.72				
29		194,532	1,458,990	7	874,127	1.67				
30		201,673	1,512,548	7	874,127	1.73				
31		202,610	1,519,575	7	874,127	1.74				
Total		5,429,148	40,718,610							

KAWC -- CUSTOMER DEMAND STUDY															Page 5 / 8				
SCHEDULE 3																			
OPA USER CLASS - COMPOSITE MAX DAY																			
August 1999	Ag. Science Dept., UK	Cu. Ft.	Federal Medical Center	Cu. Ft.	Shephards House Inc.	Cu. Ft.	UK Chem/ Physic Bldg.	Cu. Ft.	UK Cooling Plant	Cu. Ft.	UK Dormitory Tower	Cu. Ft.	UK Heating Plant	UK Horticulture	Cu. Ft.	UK Hospital	Cu. Ft.	VA Hospital Fed. Govt.	Cu. Ft.
1	482	51,960		102	5,240	40,213	7,593							8,972	45,243	23,262			
2	595	47,218		124	6,974	26,608	5,851							12,580	49,788	26,205			
3	629	57,025		114	7,464	22,078	5,294							11,801	46,358	22,241			
4	516	53,626		168	8,270	30,574	6,144							12,098	47,313	23,098			
5	476	55,262		92	7,612	28,588	3,871							11,900	44,518	22,082			
6	593	50,260		123	6,425	27,396	2,551							18,524	46,941	21,882			
7	581	47,905		115	3,308	27,189	956							7,115	43,927	19,341			
8	500	58,452			2,806	29,562	1,276							8,366	43,548	20,109			
9	634	58,304			6,073	29,651	1,842							11,832	46,059	22,885			
10	677	45,324			5,563	32,182	2,258							16,522	47,982	21,925			
11	766	53,544			6,986	31,902	1,866							30,071	52,893	25,432			
12	746	49,448			5,546	26,345	2,487							29,509	57,075	25,138			
13	894	59,976			6,978	38,136	2,328							11,421	63,838	26,220			
14	484	49,664			6,191	8,895	4,939							10,308	55,573	18,208			
15	502	56,895			5,521	7,937	5,930							8,019	47,538	15,678			
16	710	46,361			5,913	17,082	6,212							10,613	58,135	21,945			
17	577	50,731			5,729	28,244	6,060							17,262	63,551	22,724			
18	529	52,214			153	5,763	5,938							17,289	58,564	23,309			
19	519	61,462			348	6,252	25,838							14,237	52,482	21,669			
20	451	46,119			321	5,912	19,500							6,143	46,918	22,072			
21	382	52,481			223	3,469	9,310							25,284	41,986	17,135			
22	405	50,649			201	1,279	11,114							5,298	42,341	17,233			
23	549	60,308			95	1,030	14,474							5,673	47,641	22,585			
24	425	46,512			101	4,520	16,115							17,317	46,057	22,380			
25	548	53,085			121	5,239	16,705							4,987	47,939	22,658			
26	540	58,611			87	2,053	17,574							12,585	48,496	22,273			
27	614	49,084			91	5,096	21,940							9,266	48,599	23,088			
28	548	57,802			94	4,726	14,197							16,400	42,459	20,643			
29	556	48,080			106	3,177	12,992							4,902	43,139	20,631			
30		45,892			70	484	16,205							7,405	46,890	20,907			
31	514	54,280			118	499	16,553							15,710	46,882	20,311			
Total	16,942	1,628,534			2,967	152,098	254,065							399,409	1,521,673	675,269			

SCHEDULE 3										Page 6 / 8
August 1999	US Postal Service	Cu. Ft.	Total Cu. Ft. / Day	Total Gals. / Day	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage			
1			183,067	1,373,003	9	988,900	1.39			
2			175,943	1,319,573	9	988,900	1.33			
3			173,004	1,297,530	9	988,900	1.31			
4			181,807	1,363,553	9	988,900	1.38			
5			174,401	1,308,008	9	988,900	1.32			
6			174,695	1,310,213	9	988,900	1.32			
7			150,437	1,128,278	9	988,900	1.14			
8			164,619	1,234,643	8	987,805	1.25			
9			177,280	1,329,600	8	987,805	1.35			
10			172,433	1,293,248	8	987,805	1.31			
11			203,460	1,525,950	8	987,805	1.54			
12			196,294	1,472,205	8	987,805	1.49			
13			209,791	1,573,433	8	987,805	1.59			
14			154,262	1,156,965	8	987,805	1.17			
15			148,020	1,110,150	8	987,805	1.12			
16			167,971	1,259,783	8	987,805	1.28			
17			194,878	1,461,585	8	987,805	1.48			
18			190,511	1,428,833	9	988,900	1.44			
19	88		188,405	1,413,038	10	989,515	1.43			
20	207		155,078	1,163,085	10	989,515	1.18			
21	113		160,238	1,201,785	10	989,515	1.21			
22	65		138,738	1,040,535	10	989,515	1.05			
23	418		178,843	1,341,323	10	989,515	1.36			
24	222		185,326	1,389,945	10	989,515	1.40			
25	18		172,875	1,296,563	10	989,515	1.31			
26	26		183,130	1,373,475	10	989,515	1.39			
27	27		181,944	1,364,580	10	989,515	1.38			
28	17		178,954	1,342,155	10	989,515	1.36			
29	8		156,193	1,171,448	10	989,515	1.18			
30	18		146,174	1,096,305	9	985,637	1.11			
31	18		167,188	1,253,910	10	989,515	1.27			
Total	1,245		5,385,959	40,394,693						

KAWC -- CUSTOMER DEMAND STUDY															Page 7 / 8		
SCHEDULE 3																	
OPA USER CLASS - COMPOSITE MAX DAY																	
September 1999	Ag. Science Dept., UK	Federal Medical Center	Shephards House Inc.	UK Chem/ Physic Bldg.	UK Cooling Plant	UK Dormitory Tower	UK Heating Plant	UK Horticulture	UK Hospital	VA Hospital							
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.
1	574	49,075	338		16,542	16,380		8,309	46,501	22,305							
2	594	53,073	104		19,463	16,545		24,356	49,685	21,089							
3	630	52,861	137		36,665	16,017		8,340	48,096	23,050							
4	590	46,743	197		30,351	16,611		13,102	41,486	20,634							
5	549	51,389	330		34,040	14,084		9,248	40,067	18,858							
6	750	54,746	132		43,520	16,303		11,341	41,898	21,196							
7	504	48,739	103		23,674	19,617		20,262	46,546	24,026							
8	582	52,053	162		25,389	15,201		8,414	48,264	21,370							
9	457	51,579	98		30,312	15,834		16,377	46,475	21,692							
10	466	52,619	103		16,336	15,415		9,483	42,834	20,028							
11	458	50,756	161		15,803	11,733		13,941	37,847	16,482							
12	490	44,982	235		21,135	12,054		8,893	38,339	17,666							
13	557	56,673	115		30,130	15,508		8,676	44,401	21,320							
14	770	48,857	127		14,856	19,086		15,123	42,680	18,921							
15	773	45,682	221		12,951	16,429		10,298	44,145	19,934							
16	500	57,793	297		8,883	15,909		13,145	13,046	19,459							
17	567	46,135	262		7,067	14,221		10,282		19,730							
18	568	48,059	121		8,905	9,653		17,350		14,966							
19	366	43,634	206		11,486	12,179		7,114		16,248							
20	585	48,182	149		19,518	15,215		6,932		20,543							
21	409	54,383	112		4,177	15,023		9,977		17,504							
22	518	47,470	135		3,210	14,885		8,827		16,911							
23	476	46,191	114		7,834	14,974		9,900		17,298							
24	512	52,581	120		11,977	13,699		6,677		18,698							
25	338	47,705	149		14,165	9,866		12,536		15,750							
26	350	45,097	156		13,859	11,455		6,003		15,744							
27	513	55,758	116		25,596	15,455		8,087		21,547							
28	830	46,071	119		30,458	15,370		8,419		22,784							
29	547	54,161	123		18,506	15,671		6,667		20,311							
30	436	44,784	101		2,711	14,033		5,142		16,187							
Total	16,259	1,497,831	4,843		559,519	444,425		323,221	672,310	582,251							

SCHEDULE 3										Page 8 / 8
September 1999	US Postal Service	Cu. Ft.	Total Cu. Ft. / Day	Total Gals. / Day	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage			
1	20	160,044	1,200,330	9	941,830	1.27				
2	28	184,937	1,387,028	9	941,830	1.47				
3	19	185,815	1,393,613	9	941,830	1.48				
4	14	169,728	1,272,960	9	941,830	1.35				
5	8	168,573	1,264,298	9	941,830	1.34				
6	6	189,892	1,424,190	9	941,830	1.51				
7	34	183,505	1,376,288	9	941,830	1.46				
8	16	171,451	1,285,883	9	941,830	1.37				
9	160	182,984	1,372,380	9	941,830	1.46				
10	172	157,456	1,180,920	9	941,830	1.25				
11	13	147,194	1,103,955	9	941,830	1.17				
12	5	143,799	1,078,493	9	941,830	1.15				
13	166	177,546	1,331,595	9	941,830	1.41				
14	136	160,556	1,204,170	9	941,830	1.28				
15	55	150,488	1,128,660	9	941,830	1.20				
16	23	129,055	967,913	9	941,830	1.03				
17	37	98,301	737,258	8	686,927	1.07				
18	12	99,634	747,255	8	686,927	1.09				
19	11	91,244	684,330	8	686,927	1.00				
20	41	111,165	833,738	8	686,927	1.21				
21	35	101,620	762,150	8	686,927	1.11				
22	25	91,981	689,858	8	686,927	1.00				
23	218	97,005	727,538	8	686,927	1.06				
24	140	104,404	783,030	8	686,927	1.14				
25	13	100,522	753,915	8	686,927	1.10				
26	7	92,671	695,033	8	686,927	1.01				
27	207	127,279	954,593	8	686,927	1.39				
28	181	124,232	931,740	8	686,927	1.36				
29	96	116,082	870,615	8	686,927	1.27				
30	22	83,416	625,620	8	686,927	0.91				
Total	1,920	4,102,579	30,769,343							

		KAWC – CUSTOMER DEMAND STUDY														Page 1 / 4	
		SCHEDULE 4															
		INDUSTRIAL USER CLASS - COMPOSITE MAX DAY															
June 1999	Crest Products Inc	General Electric	Pepsi Cola	Proctor & Gamble	The Trane Co.	Toyota	Total		Total	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage	Ratios				
							Cu. Ft.	Cu. Ft.						Cu. Ft. / Day	Gals. / Day	Customers Monitored	Gals. / Day
1	1,148	45,430	15,043			261,847	323,468	2,426,010	4	1,976,986	1.23						
2	1,355	44,410	13,632			324,144	383,541	2,876,558	4	1,976,986	1.46						
3	2,242	38,520	11,041			311,763	363,566	2,726,745	4	1,976,986	1.38						
4	2,008	37,895	11,179			313,558	364,640	2,734,800	4	1,976,986	1.38						
5	203	44,071	1,228		27,201	169,738	242,441	1,818,308	5	2,130,346	0.85						
6	162	40,385	5		25,644	169,577	235,773	1,768,298	5	2,130,346	0.83						
7	2,816	48,383	14,400		29,505	277,374	372,478	2,793,585	5	2,130,346	1.31						
8	3,188	48,465	13,681	5,236	32,782	326,282	429,634	3,222,255	6	2,162,679	1.49						
9	2,165	51,310	14,130	6,131	31,817	363,806	469,359	3,520,193	6	2,162,679	1.63						
10	1,225	44,657	14,068	5,907	31,286	336,540	433,683	3,252,623	6	2,162,679	1.50						
11	2,769	50,468	13,555	5,997	30,708	365,846	469,343	3,520,073	6	2,162,679	1.63						
12	60	40,578	597	4,454	26,556	163,300	235,545	1,766,588	6	2,162,679	0.82						
13	24	32,928	91	4,732	21,249	99,128	158,152	1,186,140	6	2,162,679	0.55						
14	1,468	43,691	15,514	5,369	27,456	270,661	364,159	2,731,193	6	2,162,679	1.26						
15	1,591	27,292	13,993	4,971	29,704	303,050	380,601	2,854,508	6	2,162,679	1.32						
16	4,049	31,642	12,468	4,966	28,612	263,730	345,467	2,591,003	6	2,162,679	1.20						
17	3,054	32,114	13,557	5,343	27,636	300,625	382,329	2,867,468	6	2,162,679	1.33						
18	2,233	30,845	14,857	5,068	26,878	278,645	358,526	2,688,945	6	2,162,679	1.24						
19	145	32,627	37	4,878	24,854	109,417	171,958	1,289,685	6	2,162,679	0.60						
20	147	32,119	20	5,384	26,448	123,770	187,888	1,409,160	6	2,162,679	0.65						
21	1,570	30,256	13,534	5,121	27,934	293,238	371,653	2,787,398	6	2,162,679	1.29						
22	2,271	36,773	13,787	6,743	29,759	369,199	458,532	3,438,990	6	2,162,679	1.59						
23	1,965	38,836	15,143	6,892	29,770	356,039	448,645	3,364,838	6	2,162,679	1.56						
24	1,571	36,023	10,864	5,783	30,182	313,176	397,599	2,981,993	6	2,162,679	1.38						
25	1,229	21,823	10,430	6,224	29,888	340,316	409,910	3,074,325	6	2,162,679	1.42						
26	73	12,366	44	6,526	29,470	165,355	213,834	1,603,755	6	2,162,679	0.74						
27	21	18,195	39	5,818	25,980	129,029	179,082	1,343,115	6	2,162,679	0.62						
28	1,356	23,698	12,453	4,291	29,358	288,556	359,712	2,697,840	6	2,162,679	1.25						
29	1,375	23,724	10,998	6,093	29,793	309,043	381,026	2,857,695	6	2,162,679	1.32						
30	1,292	18,884	17,064	6,303	30,442	314,561	388,546	2,914,095	6	2,162,679	1.35						
Total	44,775	1,058,408	297,452	128,230	740,912	8,011,313	10,281,090	77,108,175									

		KAWC -- CUSTOMER DEMAND STUDY														Page 2 / 4	
		SCHEDULE 4															
		INDUSTRIAL USER CLASS - COMPOSITE MAX DAY															
July 1999	Crest Products Inc	General Electric	Pepsi Cola	Proctor & Gamble	The Trane Co.	Toyota		Total Cu. Ft. / Day	Total Gals. / Day	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage Ratios					
						Cu. Ft.	Cu. Ft.										
1	1,283	22,312	18,507	6,397	30,574	323,963	403,036	3,022,770	6	2,162,679	1.40						
2	845	27,074	13,435	6,241	20,524	329,523	397,642	2,982,315	6	2,162,679	1.38						
3	72	35,148	3,521	3,440	13,646	182,734	238,561	1,789,208	6	2,162,679	0.83						
4	48	37,438	8	2,899	15,972	126,037	182,402	1,368,015	6	2,162,679	0.63						
5	155	31,649	7	4,486	15,580	122,836	174,713	1,310,348	6	2,162,679	0.61						
6	164	32,945	16,795	7,399	29,964	315,092	402,359	3,017,693	6	2,162,679	1.40						
7	466	42,246	16,580	7,455	31,445	383,859	482,051	3,615,383	6	2,162,679	1.67						
8	204	44,332	13,898	7,614	30,010	335,086	431,144	3,233,580	6	2,162,679	1.50						
9	220	50,793	13,340	7,483	28,688	350,184	450,708	3,380,310	6	2,162,679	1.56						
10	43	47,978	1,483	7,203	22,147	170,947	249,801	1,873,508	6	2,162,679	0.87						
11	44	39,349	10	7,010	16,035	76,114	138,562	1,039,215	6	2,162,679	0.48						
12	1,894	44,414	16,986	5,561	27,175	276,557	372,587	2,794,403	6	2,162,679	1.29						
13	2,995	40,336	13,724	5,719	29,656	291,051	383,481	2,876,108	6	2,162,679	1.33						
14	3,310	37,589	11,618	7,022	31,692	339,990	431,221	3,234,158	6	2,162,679	1.50						
15	2,337	39,076	13,424	7,858	31,228	360,287	454,210	3,406,575	6	2,162,679	1.58						
16	1,293	45,576	17,728	6,850	30,670	357,373	459,490	3,446,175	6	2,162,679	1.59						
17	183	39,742	671	6,976	29,673	127,021	204,266	1,531,995	6	2,162,679	0.71						
18	157	40,697	5	6,999	26,284	105,985	180,127	1,350,953	6	2,162,679	0.62						
19	1,510	44,459	11,883	6,086	31,263	123,254	218,455	1,638,413	6	2,162,679	0.76						
20	2,580	49,132	12,448	6,420	33,915	162,474	266,969	2,002,268	6	2,162,679	0.93						
21	3,686	38,407	12,457	6,747	32,397	166,869	260,563	1,954,223	6	2,162,679	0.90						
22	3,722	47,444	13,787	6,703	35,215	186,062	292,933	2,196,998	6	2,162,679	1.02						
23	3,334	47,369	13,454	6,728	33,880	141,795	246,560	1,849,200	6	2,162,679	0.86						
24	2,159	46,323	1,138	6,907	32,056	165,452	254,035	1,905,263	6	2,162,679	0.88						
25	2,097	35,090	35	7,063	29,472	165,871	239,628	1,797,210	6	2,162,679	0.83						
26	3,401	49,450	14,768	6,339	33,881	340,976	448,815	3,366,113	6	2,162,679	1.56						
27	3,477	44,916	12,906	6,947	37,318	359,357	464,921	3,486,908	6	2,162,679	1.61						
28	3,682	46,190	13,473	6,965	36,136	371,250	477,696	3,582,720	6	2,162,679	1.66						
29	3,518	49,060	17,332	7,330	34,383	350,130	461,753	3,463,148	6	2,162,679	1.60						
30	2,376	50,672	13,895	7,643	37,317	393,923	505,826	3,793,695	6	2,162,679	1.75						
31	161	53,047	252	7,699	30,457	235,275	326,891	2,451,683	6	2,162,679	1.13						
Total	51,416	1,300,253	309,568	204,189	898,653	7,737,327	10,501,406	78,760,545									

		KAWC -- CUSTOMER DEMAND STUDY												Page 3 / 4	
		SCHEDULE 4													
		INDUSTRIAL USER CLASS - COMPOSITE MAX DAY													
August 1999	Crest Products Inc Cu. Ft.	General Electric Cu. Ft.	Pepsi Cola Cu. Ft.	Proctor & Gamble Cu. Ft.	The Trane Co.		Toyota		Total Cu. Ft. / Day	Total Gals. / Day	Number of Customers Monitored	Tot. Average Usage for Customers Monitored	Max Day Usage Ratios		
					Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.							
1	126	42,959	11	3,581	28,756	158,157	233,590	1,751,925	6	2,162,679	0.81				
2	1,466	40,321	12,635	3,592	34,646	303,206	395,866	2,968,995	6	2,162,679	1.37				
3	1,917	46,225	17,033	7,109	32,111	313,000	417,395	3,130,463	6	2,162,679	1.45				
4	2,374	46,855	13,794	7,238	34,588	332,900	437,749	3,283,118	6	2,162,679	1.52				
5	3,466	49,214	15,520	7,491	32,340	291,013	399,044	2,992,830	6	2,162,679	1.38				
6	1,924	45,645	13,518	7,524	30,737	350,362	449,710	3,372,825	6	2,162,679	1.56				
7	187	50,422	46	7,556	31,452	126,186	215,849	1,618,868	6	2,162,679	0.75				
8	50	45,105	44	6,605	27,676	93,474	172,954	1,297,155	6	2,162,679	0.60				
9	1,235	42,079	13,211	5,029	31,127	258,613	351,294	2,634,705	6	2,162,679	1.22				
10	2,244	43,721	16,584	6,788	37,097	325,690	432,124	3,240,930	6	2,162,679	1.50				
11	2,782	46,527	17,402	7,453	35,721	375,246	485,131	3,638,483	6	2,162,679	1.68				
12	1,564	47,494	11,871	7,395	34,573	323,026	425,923	3,194,423	6	2,162,679	1.48				
13	1,409	52,766	16,713	7,316	36,250	371,488	485,942	3,644,565	6	2,162,679	1.69				
14	52	33,461	33	5,621	24,830	141,111	205,108	1,538,310	6	2,162,679	0.71				
15	18	19,519	27	5,596	18,158	97,248	140,566	1,054,245	6	2,162,679	0.49				
16	1,719	31,984	11,511	4,584	26,815	295,036	371,649	2,787,368	6	2,162,679	1.29				
17	1,244	41,348	14,295	6,747	29,065	344,702	437,401	3,280,508	6	2,162,679	1.52				
18	823	40,990	16,151	6,556	25,130	310,047	399,697	2,997,728	6	2,162,679	1.39				
19	940	38,753	12,611	5,810	24,858	322,806	405,778	3,043,335	6	2,162,679	1.41				
20	1,276	37,850	13,589	5,978	20,551	249,018	328,242	2,461,815	6	2,162,679	1.14				
21	231	31,398	1,706	6,708	13,410	120,655	174,108	1,305,810	6	2,162,679	0.60				
22	195	28,448	11	4,886	7,617	58,882	100,039	750,293	6	2,162,679	0.35				
23	1,162	34,510	13,789	4,307	20,478	265,605	339,851	2,548,883	6	2,162,679	1.18				
24	970	31,684	15,002	6,243	20,232	305,981	380,112	2,850,840	6	2,162,679	1.32				
25	1,021	28,605	20,602	6,205	19,167	237,061	312,661	2,344,958	6	2,162,679	1.08				
26	1,039	30,967	15,978	6,973	19,857	241,079	315,893	2,369,198	6	2,162,679	1.10				
27	1,286	35,009	10,525	6,799	18,259	257,349	329,227	2,469,203	6	2,162,679	1.14				
28	332	27,953	93	6,591	11,914	148,035	194,918	1,461,885	6	2,162,679	0.68				
29	300	20,523	7	6,387	12,505	109,420	149,142	1,118,565	6	2,162,679	0.52				
30	1,168	25,849	12,014	4,800	16,063	236,395	296,289	2,222,168	6	2,162,679	1.03				
31	1,202	29,274	12,050	6,825	16,019	254,765	320,135	2,401,013	6	2,162,679	1.11				
Total	35,722	1,167,458	318,356	192,293	772,002	7,617,556	10,103,387	75,775,403							

		KAWC -- CUSTOMER DEMAND STUDY												Page 4 / 4		
		SCHEDULE 4														
		INDUSTRIAL USER CLASS - COMPOSITE MAX DAY														
September 1999	Crest Products Inc Cu. Ft.	General Electric		Pepsi Cola		Proctor & Gamble		The Trane Co.		Toyota		Total Cu. Ft. / Day	Total Gals. / Day	Number of Customers Monitored	Customers Monitored Gals. / Day	Max Day Usage Ratios
		Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.					
1	1,123	28,731	8,919	7,039	20,931	285,590	352,333	2,642,498	6	2,162,679	1.22					
2	993	24,764	11,319	7,419	19,185	285,259	348,939	2,617,043	6	2,162,679	1.21					
3	1,259	28,670	11,745	7,591	20,295	308,141	377,701	2,832,758	6	2,162,679	1.31					
4	238	34,776	7	7,514	11,636	123,042	177,213	1,329,098	6	2,162,679	0.61					
5	184	24,857	5	6,736	9,746	85,936	127,464	955,980	6	2,162,679	0.44					
6	226	31,172	18	1,496	13,165	43,235	89,312	669,840	6	2,162,679	0.31					
7	1,166	26,744	11,088		20,617	234,867	294,482	2,208,615	5	2,130,146	1.04					
8	1,962	25,621	13,161	1,860	21,224	304,697	368,525	2,763,938	6	2,162,679	1.28					
9	2,822	21,185	11,064	4,057	18,743	299,800	357,671	2,682,533	6	2,162,679	1.24					
10	2,099	25,358	11,553	5,989	20,900	285,457	351,356	2,635,170	6	2,162,679	1.22					
11	92	21,016	14	6,326	15,057	134,358	176,863	1,326,473	6	2,162,679	0.61					
12	68	23,389	4	6,461	17,343	68,468	115,733	867,998	6	2,162,679	0.40					
13	942	21,454	11,513	5,348	18,516	220,917	278,690	2,090,175	6	2,162,679	0.97					
14	1,123	26,881	14,172	6,802	20,174	260,217	329,369	2,470,268	6	2,162,679	1.14					
15	1,021	25,768	12,004	7,234	15,733	270,877	332,637	2,494,778	6	2,162,679	1.15					
16	1,130	27,230	11,019	6,124	15,997	261,152	322,652	2,419,890	6	2,162,679	1.12					
17	1,072	26,821	10,901	6,657	17,501	251,136	314,088	2,355,660	6	2,162,679	1.09					
18	82	25,139	172	6,163	12,665	109,872	154,093	1,155,698	6	2,162,679	0.53					
19	65	17,384	6	6,234	8,690	90,579	122,958	922,185	6	2,162,679	0.43					
20	978	18,202	10,192	4,799	19,895	221,762	275,828	2,068,710	6	2,162,679	0.96					
21	1,157	25,772	10,781	6,008	11,717	254,207	309,642	2,322,315	6	2,162,679	1.07					
22	1,397	28,655	11,955	5,687	12,684	236,958	297,336	2,230,020	6	2,162,679	1.03					
23	804	26,871	10,235	5,729	14,459	255,222	313,320	2,349,900	6	2,162,679	1.09					
24	789	27,624	1,683	6,563	18,527	291,470	346,656	2,599,920	6	2,162,679	1.20					
25	60	22,449	390	6,311	17,012	127,606	173,828	1,303,710	6	2,162,679	0.60					
26	19	15,592	4	5,463	18,393	98,555	138,026	1,035,195	6	2,162,679	0.48					
27	1,258	25,853	6,989	4,942	16,521	230,547	286,110	2,145,825	6	2,162,679	0.99					
28	1,472	26,663	15,158	5,977	22,053	325,146	396,469	2,973,518	6	2,162,679	1.37					
29	1,721	27,378	12,849	5,880	16,609	274,724	339,161	2,543,708	6	2,162,679	1.18					
30	1,871	28,504	13,171	5,861	18,530	225,818	293,755	2,203,163	6	2,162,679	1.02					
Total	29,193	760,523	232,091	170,270	504,518	6,465,615	8,162,210	61,216,575								

		KAWC -- CUSTOMER DEMAND STUDY										Page 1 / 4	
		SCHEDULE 5											
		OWU USER CLASS - COMPOSITE MAX DAY											
June 1999	380-0903 Lex South Elkhorn Cu. Ft.	380-0892 Lex South Elkhorn Cu. Ft.	Spears		Total		Total		Number of Customers Monitored		Tot. Average Usage for Customers Monitored		
			Water Dist.	Cu. Ft.	Cu. Ft. / Day	Gals. / Day	Cu. Ft. / Day	Gals. / Day	Customers Monitored	Gals. / Day	Customers Monitored	Gals. / Day	
1	58,863	105			58,968	442,260	2	504,721	0.88				
2	49,447	105			49,552	371,640	2	504,721	0.74				
3	65,707	94			65,801	493,508	2	504,721	0.98				
4	78,864	96			78,960	592,200	2	504,721	1.17				
5	92,886	109			92,995	697,463	2	504,721	1.38				
6	86,194	152			86,346	647,595	2	504,721	1.28				
7	104,576	115			104,691	785,183	2	504,721	1.56				
8	86,715	102			86,817	651,128	2	504,721	1.29				
9	106,649	133	16,078		122,860	921,450	3	625,546	1.47				
10	101,137	163	18,156		119,456	895,920	3	625,546	1.43				
11	92,772	147	19,407		112,326	842,445	3	625,546	1.35				
12	112,592	462	19,090		132,144	991,080	3	625,546	1.58				
13	113,037	90	20,791		133,918	1,004,385	3	625,546	1.61				
14	84,802	5	15,252		100,059	750,443	3	625,546	1.20				
15	57,833	46	15,176		73,055	547,913	3	625,546	0.88				
16	86,374	95	18,017		104,486	783,645	3	625,546	1.25				
17	81,604	70	15,764		97,438	730,785	3	625,546	1.17				
18	97,227	135	15,865		113,227	849,203	3	625,546	1.36				
19	89,278	200	19,403		108,881	816,608	3	625,546	1.31				
20	113,387	224	21,020		134,631	1,009,733	3	625,546	1.61				
21	100,859	421	20,545		121,825	913,688	3	625,546	1.46				
22	104,669	163	20,176		125,008	937,560	3	625,546	1.50				
23	116,681	66	18,032		134,779	1,010,843	3	625,546	1.62				
24	75,322	62	15,524		90,908	681,810	3	625,546	1.09				
25	65,231	69	12,895		78,195	566,463	3	625,546	0.94				
26	85,443	73	16,999		102,515	768,863	3	625,546	1.23				
27	85,530	70	14,685		100,285	752,138	3	625,546	1.20				
28	54,186	64	12,463		66,713	500,348	3	625,546	0.80				
29	80,266	70	12,765		93,101	698,258	3	625,546	1.12				
30	63,520	70	14,329		77,919	584,393	3	625,546	0.93				
Total	2,591,651	3,776	372,432		2,967,859	22,258,943							

		KAWC -- CUSTOMER DEMAND STUDY												Page 3 / 4	
		SCHEDULE 5													
		OWU USER CLASS - COMPOSITE MAX DAY													
August 1999	380-0903 Lex South Elkhorn Cu. Ft.	380-0892 Lex South Elkhorn Cu. Ft.	Spears		Total		Total		Number of		Tot. Average		Usage for		Max Day Usage Ratios
			Water Dist. Cu. Ft.	Cu. Ft. / Day	Gals. / Day	Gals. / Day	Customers Monitored	Customers Monitored	Customers Monitored	Customers Monitored	Gals. / Day	Gals. / Day			
1	119,745	218	22,658	142,621	1,069,658	3	625,546	1.71							
2	100,934	209	20,783	121,926	914,445	3	625,546	1.46							
3	110,356	222	21,277	131,855	988,913	3	625,546	1.58							
4	118,086	177	21,539	139,802	1,048,515	3	625,546	1.68							
5	112,327	109	21,484	133,920	1,004,400	3	625,546	1.61							
6	105,771	141	22,078	127,990	959,925	3	625,546	1.53							
7	117,854	191	22,056	140,101	1,050,758	3	625,546	1.68							
8	97,037	135	18,749	115,921	869,408	3	625,546	1.39							
9	97,933	127	18,601	116,661	874,958	3	625,546	1.40							
10	86,335	270	20,333	106,938	802,035	3	625,546	1.28							
11	108,214	126	21,331	129,671	972,533	3	625,546	1.55							
12	116,335	218	21,164	137,717	1,032,878	3	625,546	1.65							
13	93,103	142	20,734	113,979	854,843	3	625,546	1.37							
14	115,959	278	19,369	135,606	1,017,045	3	625,546	1.63							
15	108,755	153	17,572	126,480	948,600	3	625,546	1.52							
16	107,219	95	13,537	120,851	906,383	3	625,546	1.45							
17	92,073	230	16,345	108,648	814,860	3	625,546	1.30							
18	109,200	184	20,593	129,977	974,828	3	625,546	1.56							
19	87,636	141	20,194	107,971	809,783	3	625,546	1.29							
20	91,967	169	19,171	111,307	834,803	3	625,546	1.33							
21	88,053	98	21,397	109,548	821,610	3	625,546	1.31							
22	104,900	254	22,257	127,411	955,583	3	625,546	1.53							
23	83,465	93	20,545	104,103	780,773	3	625,546	1.25							
24	56,296	111	19,069	75,476	566,070	3	625,546	0.90							
25	62,397	262	18,288	80,947	607,103	3	625,546	0.97							
26	77,058	279	18,943	96,280	722,100	3	625,546	1.15							
27	87,142	285	18,335	105,762	793,215	3	625,546	1.27							
28	72,518	294	18,858	91,670	687,525	3	625,546	1.10							
29	95,564	152	19,588	115,304	864,780	3	625,546	1.38							
30	39,636	0	18,547	58,183	436,373	3	625,546	0.70							
31	73,605	20	20,359	93,984	704,880	3	625,546	1.13							
Total	2,937,473	5,383	615,754	3,558,610	26,689,575										

KAWC -- CUSTOMER DEMAND STUDY																
SCHEDULE 4A																
INDUSTRIAL USER CLASS - COMPOSITE MAX HOUR - July 30, 1999																
Time	Crest Products Inc Cu. Ft.	General Electric		Pepsi Cola		Proctor & Gamble		The Trane Co.		Toyota		Total		Times 24 = Gals. / Day Rate	Tot. Average Usage for Customers Monitored Gals. / Day	Max Hour Usage Ratios
		Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft. / Hour	Gals. / Hour	Gals. / Day				
0.00	134.50	2223.69	202.66	311.37	1311.60	18975.85	23159.67	173.698	4,168,741	2,162,679	1.93					
1.00	140.84	1769.40	513.39	295.28	1394.73	19851.37	23965.01	179.738	4,313,702	2,162,679	1.99					
2.00	120.11	2243.27	474.29	293.96	1648.57	14854.86	19635.06	147.263	3,534,311	2,162,679	1.63					
3.00	119.78	1701.04	186.60	292.80	1541.44	7072.44	10914.10	81.856	1,964,538	2,162,679	0.91					
4.00	119.22	2108.69	22.18	307.71	1431.63	20598.97	24588.40	184.413	4,425,912	2,162,679	2.05					
5.00	135.42	1703.90	30.51	284.68	1452.00	7440.31	11046.82	82.851	1,988,428	2,162,679	0.92					
6.00	139.32	2033.37	466.29	296.35	1641.23	18337.40	22913.96	171.855	4,124,513	2,162,679	1.91					
7.00	119.27	1985.30	553.29	307.65	1483.33	7024.33	11473.17	86.049	2,065,171	2,162,679	0.95					
8.00	178.68	2259.71	651.91	311.77	1628.32	19093.06	24123.45	180.926	4,342,221	2,162,679	2.01					
9.00	172.11	2103.04	672.63	330.86	1594.45	21102.42	25975.51	194.816	4,675,592	2,162,679	2.16					
10.00	184.24	2017.13	807.73	300.83	1716.26	4965.71	9991.90	74.939	1,798,542	2,162,679	0.83					
11.00	136.15	2428.87	813.92	302.73	1591.62	23082.69	28355.98	212.670	5,104,076	2,162,679	2.36					
12.00	140.19	1837.89	1215.68	324.51	1416.21	10373.73	15308.21	114.812	2,755,478	2,162,679	1.27					
13.00	81.14	2360.34	961.63	302.33	1469.35	15994.14	21168.93	158.767	3,810,407	2,162,679	1.76					
14.00	51.38	1950.39	1139.87	300.91	1286.94	19281.55	24023.04	180.173	4,324,147	2,162,679	2.00					
15.00	60.84	2306.78	639.33	314.75	1373.73	18889.41	23584.84	176.886	4,245,271	2,162,679	1.96					
16.00	60.98	2019.38	582.01	333.05	1262.46	19535.27	23793.15	178.449	4,282,767	2,162,679	1.98					
17.00	60.59	1839.12	470.94	328.69	1352.05	18714.88	22766.27	170.747	4,097,929	2,162,679	1.89					
18.00	71.80	2318.82	434.77	343.86	1691.52	17873.86	22734.63	170.510	4,092,233	2,162,679	1.89					
19.00	61.77	2075.28	369.91	354.90	1924.33	18785.52	23571.71	176.788	4,242,908	2,162,679	1.96					
20.00	27.42	2509.16	394.90	355.09	1785.30	18305.18	23377.05	175.328	4,207,869	2,162,679	1.95					
21.00	12.82	2182.33	966.14	402.33	1761.96	16939.28	22284.86	167.136	4,011,275	2,162,679	1.85					
22.00	15.22	2298.74	793.27	330.96	1597.93	16832.67	21868.79	164.016	3,936,382	2,162,679	1.82					
23.00	32.22	2395.87	530.80	315.20	1748.46	19997.80	25020.35	187.653	4,503,663	2,162,679	2.08					
Total	2376.01	50671.51	13894.65	7642.57	37137.42	393922.70										

		KAWC -- CUSTOMER DEMAND STUDY										12/30/99
		SCHEDULE 5A										
		OWU USER CLASS - COMPOSITE MAX HOUR - July 18, 1999										
Time	Lex South Elkhorn Cu. Ft.	Spears Water Dist. Cu. Ft.	Total Cu. Ft. / Hour	Total Gals. / Hour	Times 24 = Gals. / Day	Rate	Customers Monitored Gals. / Day	Max Hour Usage Ratios	Tot. Average Usage for Customers			
0.00	4878.07	4.56	826.04	5708.67	42,815	1,027,561	625,546	1.64				
1.00	5005.81	4.05	628.24	5638.10	42,286	1,014,858	625,546	1.62				
2.00	5113.55	3.92	548.80	5666.27	42,497	1,019,929	625,546	1.63				
3.00	5004.04	2.90	500.15	5507.09	41,303	991,276	625,546	1.58				
4.00	4811.73	2.93	577.99	5392.65	40,445	970,677	625,546	1.55				
5.00	4844.46	3.01	696.88	5544.35	41,583	997,983	625,546	1.60				
6.00	5070.74	11.74	627.89	5710.37	42,828	1,027,867	625,546	1.64				
7.00	4961.40	50.03	736.34	5747.77	43,108	1,034,599	625,546	1.65				
8.00	4928.32	52.69	909.19	5890.20	44,177	1,060,236	625,546	1.69				
9.00	4998.03	54.00	948.11	6000.14	45,001	1,080,025	625,546	1.73				
10.00	4864.63	55.70	1019.58	5939.91	44,549	1,069,184	625,546	1.71				
11.00	5309.23	56.14	1112.64	6478.01	48,585	1,166,042	625,546	1.86				
12.00	5291.18	55.03	1132.81	6479.02	48,593	1,166,224	625,546	1.86				
13.00	4941.23	53.88	1103.44	6098.55	45,739	1,097,739	625,546	1.75				
14.00	4994.84	54.50	1042.23	6091.57	45,687	1,096,483	625,546	1.75				
15.00	5043.14	55.15	1050.19	6148.48	46,114	1,106,726	625,546	1.77				
16.00	4846.76	54.07	1062.22	5963.05	44,723	1,073,349	625,546	1.72				
17.00	4981.93	54.50	1105.21	6141.64	46,062	1,105,495	625,546	1.77				
18.00	4572.71	55.48	1138.47	5766.66	43,250	1,037,999	625,546	1.66				
19.00	5472.88	45.37	1169.79	6888.04	50,160	1,203,847	625,546	1.92				
20.00	5375.19	9.65	1167.49	6552.33	49,142	1,179,419	625,546	1.89				
21.00	5324.09	3.59	1255.95	6583.63	49,377	1,185,053	625,546	1.89				
22.00	5526.13	5.11	1309.20	6840.44	51,303	1,231,279	625,546	1.97				
23.00	5289.23	2.91	1005.25	6297.39	47,230	1,133,530	625,546	1.81				
Total	121449.32	750.91	22674.10									

RESIDENTIAL CLASS MAXIMUM DAY DEMAND

As previously stated, meters were read on a daily basis for 204 residential customers during the months of June, July, August and September in order to estimate the maximum day demand factor for the residential customer class. The number of customers whose meters were read on a daily basis varied from 188 to 204 but 204 customers were monitored on approximately 85 percent of the days and 188 customers were monitored approximately 5 percent of the days. The remaining number of customers monitored on 10 percent of the days were 202 or 203.

The information required to calculate the maximum day demands for the residential customers is shown on Schedule 6 which begins on report page 53. The maximum day demands for the months of June, July, August and September are calculated on pages 1, 2, 3, and 4 of Schedule 6. The total average annual daily usage for the customers that were monitored on each day from June through September is calculated on pages 5 and 6 of Schedule 6. The total annual usage for the year ending November 1999 for each of the 204 customers that were monitored is shown on pages 7 and 8 of Schedule 6. The account sequence number and the 12 months total usage are shown on pages 7 and 8 for each customer. The total annual usage for all 204 customers, 16,035 CCF, is shown on page 8. The total annual usage for the customers that were not monitored on various days during the months of June, July and August are shown on page 9 of Schedule 6. During the month of September, all 204 customers were monitored. The numbers on page 9 are used on pages 5 and 6 to calculate the average daily usage for the customers that were monitored.

The five highest maximum day demands for the residential customers occurred on June 8, July 19, August 5, June 22, and September 2. The maximum day usage ratios were 1.77, 1.66, 1.64, 1.59 and 1.57. The average of the five highest days is 1.65. The highest maximum day demand, 1.77 on June 8, was calculated as follows.

The number of customer monitored on June 8 was 188 as shown on Schedule 6 page 1/9. The total usage on June 8 for the 188 monitored customers, 7,297 cu. ft./day, was provided by KAWC and was calculated based on daily meter readings. The total average annual daily usage for the 188 monitored customers, 4,120 cu. ft./day, was calculated on page 5/9 as follows. The total 12 month usage for the 204 customers that were monitored is 16,035 CCF as shown on page 8/9. The annual usage, 998 CCF for the 16 (204-188) customers that were not monitored on June 8 is shown on page

9/9. The balance for the customers that were monitored on June 8 is 15,037 CCF (16,035 - 998). The average daily usage for the monitored customers is 4,120 cu. ft./day ($15,037/365 \times 100$). The maximum day usage ratio on June 8, 1.77 as shown on page 1/9 was calculated by dividing the total usage on June 8 for the 188 monitored customers by the average annual daily usage for the 188 monitored customers ($7,297/4,120 = 1.77$).

As previously stated on page 1 of the report, water use restrictions during the summer of 1999 actually lowered the maximum day demands for the residential customers. Therefore, you can justify increasing the 1999 residential customer class maximum day demand factor in a range of 10 to 20 percent. As previously stated, the average of the five highest maximum day demand factors was 1.65 which is equal to 165 percent and if the average was increased by 15 percent the maximum day demand would be 190 percent (165×1.15). As we previously stated, normally the residential customer class maximum day demand is about 200 percent.

		KAWC -- CUSTOMER DEMAND STUDY						Page 3 / 9	
		SCHEDULE 6						12/28/99	
		RESIDENTIAL USER CLASS - MAX DAY DEMAND							
		Tot. Average Annual		Average Usage for		Avg. Annual			
		Usage for		Monit. Custs		Usage for			
		Monit. Custs		Cu. Ft. / Day		Monit. Custs			
		Cu. Ft. / Day		Ratios		Gals. / Day			
		Pg. 6/9							
		Usage for		Max Day		Usage for			
		Monit. Custs		Usage		Monit. Custs			
		Cu. Ft. / Day		Ratios		Gals. / Day			
		Number of							
		Customers							
		Monitored							
		August							
		1999							
1	204	5,885	4,393	1.34		216		162	
2	204	6,002	4,393	1.37		221		162	
3	204	5,879	4,393	1.34		216		162	
4	204	5,577	4,393	1.27		205		162	
5	204	7,187	4,393	1.64		264		162	
6	204	6,810	4,393	1.55		250		162	
7	204	5,935	4,393	1.35		218		162	
8	204	5,206	4,393	1.19		191		162	
9	204	4,244	4,393	0.97		156		162	
10	204	4,650	4,393	1.06		171		162	
11	203	5,250	4,393	1.20		194		162	
12	204	6,295	4,393	1.43		231		162	
13	204	4,431	4,393	1.01		163		162	
14	204	4,189	4,393	0.95		154		162	
15	204	3,715	4,393	0.85		137		162	
16	204	5,027	4,393	1.14		185		162	
17	204	4,094	4,393	0.93		151		162	
18	204	4,261	4,393	0.97		157		162	
19	204	4,149	4,393	0.94		153		162	
20	204	3,702	4,393	0.84		136		162	
21	204	3,478	4,393	0.79		128		162	
22	204	4,397	4,393	1.00		162		162	
23	204	5,119	4,393	1.17		188		162	
24	204	3,606	4,393	0.82		133		162	
25	204	3,572	4,393	0.81		131		162	
26	204	3,632	4,393	0.83		134		162	
27	204	3,966	4,393	0.90		146		162	
28									
29									
30									
31	204	4,656	4,393	1.06		171		162	

RESIDENTIAL USER CLASS - MAX DAY DEMAND													Page 5 / 9
SCHEDULE 6													12/28/99
June 1999	Number of Customers Monitored	Tot. 12 Mo. Usage , 204 Customers	Deduct Custs. Not Monitored	Average Usage	July 1999	Number of Customers Monitored	Tot. 12 Mo. Usage , 204 Customers	Deduct Custs. Not Monitored	Average Usage	July 1999	Number of Customers Monitored	Tot. 12 Mo. Usage , 204 Customers	Average Usage
													Cu. Ft. / Day
1					1	204							16035
2	188	16035	998	4120	2	204							16035
3	188	16035	998	4120	3								
4	188	16035	998	4120	4								
5					5								
6					6								
7					7	203							15982
8	188	16035	998	4120	8	203							15982
9	204	16035	0	4393	9	203							15982
10	204	16035	0	4393	10	202							15952
11	204	16035	0	4393	11	203							16005
12	204	16035	0	4393	12	204							16035
13	204	16035	0	4393	13	204							16035
14	204	16035	0	4393	14	204							16035
15	204	16035	0	4393	15	204							16035
16	204	16035	0	4393	16	204							16035
17	204	16035	0	4393	17	203							15967
18	204	16035	0	4393	18	203							15967
19					19	204							16035
20					20	204							16035
21					21	204							16035
22	204	16035	0	4393	22	204							16035
23	204	16035	0	4393	23	204							16035
24	204	16035	0	4393	24	204							16035
25	204	16035	0	4393	25	204							16035
26	204	16035	0	4393	26	204							16035
27	204	16035	0	4393	27	204							16035
28	204	16035	0	4393	28	204							16035
29	203	16035	190	4341	29	204							16035
30	203	16035	190	4341	30	204							16035
					31	204							16035

RESIDENTIAL USER CLASS - MAX DAY DEMAND SCHEDULE 6														Page 6 / 9
August 1999	Number of Customers Monitored	Tot. 12 Mo. Usage , 204 Customers		Deduct Csts. Not Monitored	September 1999	Average Usage		Number of Customers Monitored	Tot. 12 Mo. Usage , 204 Customers	Deduct Csts. Not Monitored	Balance CCF	Average Usage Cu. Ft. / Day	Page 6 / 9	
		CCF	Pg. 8/9			CCF	Pg. 8/9							CCF	Pg. 8/9
1	204	16035	0	0	1	16035	4393	204	16035	0	16035	4393	4393	
2	204	16035	0	0	2	16035	4393	204	16035	0	16035	4393	4393	
3	204	16035	0	0	3	16035	4393	204	16035	0	16035	4393	4393	
4	204	16035	0	0	4	16035	4393	204	16035	0	16035	4393	4393	
5	204	16035	0	0	5	16035	4393	204	16035	0	16035	4393	4393	
6	204	16035	0	0	6	16035	4393	204	16035	0	16035	4393	4393	
7	204	16035	0	0	7	16035	4393	204	16035	0	16035	4393	4393	
8	204	16035	0	0	8	16035	4393	204	16035	0	16035	4393	4393	
9	204	16035	0	0	9	16035	4393	204	16035	0	16035	4393	4393	
10	204	16035	0	0	10	16035	4393	204	16035	0	16035	4393	4393	
11	203	16035	23	0	11	16012	4387							
12	204	16035	0	0	12	16035	4393							
13	204	16035	0	0	13	16035	4393							
14	204	16035	0	0	14	16035	4393	204	16035	0	16035	4393	4393	
15	204	16035	0	0	15	16035	4393	204	16035	0	16035	4393	4393	
16	204	16035	0	0	16	16035	4393	204	16035	0	16035	4393	4393	
17	204	16035	0	0	17	16035	4393	204	16035	0	16035	4393	4393	
18	204	16035	0	0	18	16035	4393							
19	204	16035	0	0	19	16035	4393							
20	204	16035	0	0	20	16035	4393							
21	204	16035	0	0	21	16035	4393	204	16035	0	16035	4393	4393	
22	204	16035	0	0	22	16035	4393	204	16035	0	16035	4393	4393	
23	204	16035	0	0	23	16035	4393	204	16035	0	16035	4393	4393	
24	204	16035	0	0	24	16035	4393	204	16035	0	16035	4393	4393	
25	204	16035	0	0	25	16035	4393							
26	204	16035	0	0	26	16035	4393							
27	204	16035	0	0	27	16035	4393							
28					28			204	16035	0	16035	4393	4393	
29					29			204	16035	0	16035	4393	4393	
30					30			204	16035	0	16035	4393	4393	
31	204	16035	0	0			4393							

RESIDENTIAL USER CLASS - MAX DAY DEMAND											
SCHEDULE 6											
Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF
100	60	560	29	1190	30	1730	90				
110	52	570	48	1200	44	1740	190				
120	23	580	178	1210	39	1750	41				
130	9	590	2	1220	23	1760	76				
150	49	600	58	1230	44	1770	22				
160	127	800	98	1240	130	1780	266				
170	106	810	115	1250	91	1790	47				
180	113	820	262	1260	67	1800	63				
190	36	830	196	1270	53	1810	96				
200	60	840	103	1280	106	1820	75				
210	119	850	142	1290	28	1830	102				
220	29	860	304	1400	113	1840	75				
230	3	870	116	1410	26	1850	133				
240	3	880	242	1420	59	1860	68				
250	121	890	211	1430	82	1870	22				
260	63	900	143	1440	61	1880	106				
270	35	910	182	1450	69	1890	58				
280	31	920	56	1460	103	1900	69				
290	67	930	135	1470	56	1910	95				
400	160	940	248	1480	90	1920	21				
410	94	950	227	1490	85	1930	30				
420	97	960	214	1500	60	1940	58				
430	30	970	123	1510	71	1950	14				
440	41	980	125	1520	60	1960	128				
450	159	990	218	1530	94	1970	79				
470	70	1100	17	1540	112	1980	137				
480	18	1110	236	1550	53	1990	12				
490	23	1120	53	1560	44	2000	28				
500	86	1130	82	1570	114	2010	23				
510	23	1140	98	1580	92	2020	25				
520	42	1150	30	1590	74	2030	25				
530	32	1160	53	1700	134	2040	31				
540	31	1170	50	1710	67	2050	26				
550	19	1180	35	1720	121	2060	22				
Sub. Total	2031	Sub. Total	4429	Sub. Total	2495	Sub. Total	2353				

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Linda C. Bridwell

- 43.** RD - Please provide a breakdown of Late Payment Fee contributions, by customer class, for the twelve months ended (a) December 31, 2011, and (b) December 31, 2012.

Response:

The Company did not start charging a Late Payment Fee until November 2012.

Class Description	2012
Residential	\$31,597.41
Commercial	\$12,387.56
Industrial	\$6.77
OPA	\$1,177.81
Sale For Resale	\$1,026.78
Private Fire	\$2,409.12
Public Fire	\$272.35
Total	\$48,877.80

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Paul R. Herbert**

- 44.** RD - Reference Exhibit 36 at page 39 of 46. Please explain why Collecting & Impounding Reservoirs are allocated differently from other sources of supply (e.g., Supply Structures & Improvements and Lake, River and Other Intakes).

Response:

Collecting and impounding reservoirs are allocated to base costs to recognize the fact that such facilities are sized principally to meet annual supply requirements in total, whether or not daily needs vary. However, intakes and other source of supply structures are sized to meet maximum day demands so that treatment facilities have sufficient supplies to meet such demands.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Paul R. Herbert

- 45.** RD - Reference Exhibit 36 at page 20 of 46. Please provide workpapers in support of the Average Daily Consumption figures of 89 and 108, respectively, for the Private Fire Protection and Public Fire Protection classes.

Response:

Exhibit 36, page 16 of 42, shows Average Daily Consumption figures of 89 and 108 for Private Fire Projection and Public Fire Protection respectively for a total of 197 thousand gallons. The total Average Daily Consumption of 197 is estimated at one half of one percent of the average day delivery for the system of 39,283 thousand gallons (Exhibit No. 36, page 19 of 42). The 197 is then allocated to private and public fire based on the allocation factors on Schedule E, page 39 of 42. See detail below:

39,283 thousand gallons (Average day system Delivery) X 0.5% = 197 thousand gallons (rounded).

197 thousand gallons X .4519 = 89 thousand gallons for Private Fire Protection (rounded).

197 thousand gallons X .5481 = 108 thousand gallons for Public Fire Protection (rounded).

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Paul R. Herbert**

46. RD - Reference Exhibit 36 at page 41 of 46.

- a. Over what time period were net charge-offs compiled to develop Factor 20?
- b. Please provide the net charge-offs, by customer class, for each of the calendar years 2010 through 2012.

Response:

- a. Net charge-offs were calculated using a three year average of charge-offs based on data from 2010 through 2012.
- b. See attached net charge-offs, by customer class for the years ended 9/30/2010, 9/30/2011 and 9/30/2012 and the calculation of the average net charge-offs used to develop Factor 20.

KENTUCKY AMERICAN WATER

NET CHARGE OFFS BY CLASS

	<u>9/30/2010</u>	<u>9/30/2011</u>	<u>9/30/2012</u>	<u>Average</u>
Residential	\$312,693	\$347,599	\$327,577	\$329,290
Commercial	\$46,057	\$42,579	\$99,381	\$62,672
Industrial	\$0	\$0	\$0	\$0
OPA	\$32	(\$32)	\$0	\$0
Sale for Resale	\$0	\$0	\$0	\$0
Private Fire	\$9,900	\$6,079	\$12,256	\$9,412
Total	\$368,683	\$396,225	\$439,214	\$401,374

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Paul R. Herbert**

- 47.** RD - Reference Exhibit 36 at page 27 of 46. Please provide a derivation for the total Fire Protection gallons of 30,380,000 that is used to determine the Fire Protection weighting factor of 0.1975.

Response:

Exhibit No. 26, on page 23 of 42, the 30,380,000 is the total storage capacity of the system not the total Fire Protection gallons. See attached page from the Company's 2011 PSC Report outlining the Company's storage capacity in million gallons.

KENTUCKY-AMERICAN WATER COMPANY
 PLANT STATISTICS (ITEM 9b)
 AS OF December 31, 2011
 RICHMOND ROAD STATION - CONDENSED SYSTEM DATA

K. SYSTEM STORAGE

TANK	MG	YEAR
Greater Fayette System		
Tates Creek Road Elevated	0.50	1954
Cox Street Elevated	1.00	1955
Cox Street Ground	1.00	1948
York Street Ground	1.00	1948
Mercer Road Elevated	2.00	1964
Parkers Mill Road Ground	3.00	1968
Sadieville Standpipe	0.38	1975
Hall Standpipe	0.21	1965
Muddy Ford Hydropillar	0.75	1988
Hume Road Ground	3.00	1987
Briar Hill Tank	0.75	1999
Clays Mill Tank 1	3.00	1996
Clays Mill Tank 2	3.00	2004
Eastland Tank	2.00	2005
Russell Cave Trnk	1.00	2005
Woodlake	3.00	2010
Owen County System		
Long Ridge	0.10	1965
Brombley	0.18	1993
Sparta	0.05	1965
Glencoe	0.10	1965
New Wheatley	0.19	1999
Hesler	0.23	1995
Monterey	0.12	1995
Elk Lake	0.10	1965
New Columbus	0.23	2002
Perry Street	0.10	1959
Fairground	0.40	1989
TOTAL TANK STORAGE	30.38	

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Paul R. Herbert**

- 48.** RD - Reference Exhibit 36 at page 28 of 46. Please provide workpapers in support of the calculations used to determine the horsepower of pumps associated with the referenced functional cost categories.

Response:

See attached workpaper to support the calculations used to determine the horsepower of pumps associated with the functional cost categories.

KENTUCKY-AMERICAN WATER COMPANY

DEVELOPMENT OF PUMP STATION EQUIPMENT TOTAL HORSEPOWER BY DESIGNATION

<u>Pump Station Name</u>	<u>Type of Pump</u>	<u>Horsepower</u>	<u>Designation</u>
<u>Kentucky River Station</u>			
Kentucky River Intake			
Pump No. 1	Intake - Low Service	1,250	Maximum Day
Pump No. 2	Intake - Low Service	1,250	Maximum Day
Pump No. 3	Intake - Low Service	1,250	Maximum Day
Pump No. 4	Intake - Low Service	1,250	Maximum Day
Pump No. 5	Intake - Low Service	1,250	Maximum Day
Pump No. 6	Intake - Low Service	1,250	Maximum Day
Raw Water Transfer Station			
Pump No. 8	Raw Water Transfer Station	1,000	Maximum Day
Pump No. 9	Raw Water Transfer Station	1,000	Maximum Day
Chemical Rapid Mix Basins	High Energy Mix Tank		Maximum Day
Chemical Rapid Mix Basins	Low Energy Mix Tank		Maximum Day
Filters			Maximum Day
Clearwell Transfer Pump			Maximum Day
<u>Richmond Road Station</u>			
Jacobson Reservoir - Intake			
L.S. Pump Unit No. 1	Low Service	100	Maximum Day
L.S. Pump Unit No. 2	Low Service	100	Maximum Day
L.S. Pump Unit No. 3	Low Service	400	Maximum Day
Lake Ellerslie Reservoir - Intake			
L.S. Pump Unit No. 5	Low Service	60	Maximum Day
L.S. Pump Unit No. 4	Low Service	40	Maximum Day
Total Maximum Day		10,200	
<u>Kentucky River Station</u>			
High Service Pumps			
H.S. Pump No. 10	High Service	700	Maximum Day and Fire
H.S. Pump No. 11	High Service	700	Maximum Day and Fire
H.S. Pump No. 12	High Service	700	Maximum Day and Fire
H.S. Pump No. 13	High Service	800	Maximum Day and Fire
H.S. Pump No. 14	High Service	800	Maximum Day and Fire
H.S. Pump No. 15	High Service	900	Maximum Day and Fire
Standby Equipment			
Standby Pump No. 15	High Service	765	Maximum Day and Fire
High Service Pumps			
H.S. Pump No. 8,	High Service	200	Maximum Day and Fire
H.S. Pump No. 7,	High Service	500	Maximum Day and Fire
H.S. Pump No. 6,	High Service	250	Maximum Day and Fire
H. S. with Standby Diesel Equipment			
H.S. Diesel Driven No. 9	High Service with Standby	372	Maximum Day and Fire
H.S. Diesel Driven No. 11	High Service with Standby	180	Maximum Day and Fire
H.S. Diesel Driven No. 10	High Service with Standby	580	Maximum Day and Fire
Total Maximum Day and Fire		7,447	

KENTUCKY-AMERICAN WATER COMPANY

DEVELOPMENT OF PUMP STATION EQUIPMENT TOTAL HORSEPOWER BY DESIGNATION

<u>Pump Station Name</u>	<u>Type of Pump</u>	<u>Horsepower</u>	<u>Designation</u>
<u>Booster Pumps</u>			
Parkers Mill Booster Station Pump No. 1		200	Maximum Hour
Parkers Mill Booster Station Pump No. 2		200	Maximum Hour
Cox St. Elevated Booster Station Pump No. 1		40	Maximum Hour
Cox Street Ground Booster Station Pump No.1		100	Maximum Hour
Mercer Booster Station Pump No. 1		75	Maximum Hour
Leestown Booster Station Pump No. 1		20	Maximum Hour
Leestown Booster Station Pump No. 2		20	Maximum Hour
York Booster Station Pump No. 1		100	Maximum Hour
Hume Booster Station Pump No. 1		300	Maximum Hour
Hume Booster Station Pump No. 2		150	Maximum Hour
Hume Booster Station Pump No. 3		150	Maximum Hour
Mount Horeb Booster Station Pump No. 1		25	Maximum Hour
Mount Horeb Booster Station Pump No. 2		25	Maximum Hour
Newtown Booster Station Pump No. 1		15	Maximum Hour
Newtown Booster Station Pump No. 2		50	Maximum Hour
Newtown Booster Station Pump No. 3		50	Maximum Hour
Hall Booster Station Pump No. 1		10	Maximum Hour
Hall Booster Station Pump No. 2		10	Maximum Hour
Delaplain Booster Station Pump No. 1		40	Maximum Hour
Clays Mill Booster Station Pump No. 1		500	Maximum Hour
Clays Mill Booster Station Pump No. 2		500	Maximum Hour
Russell Cave Booster Station Pump No. 1		200	Maximum Hour
Russell Cave Booster Station Pump No. 2		200	Maximum Hour
Russell Cave Booster Station Pump No. 3		40	Maximum Hour
Briar Hill Booster Station Pump No. 1		125	Maximum Hour
Briar Hill Booster Station Pump No. 2		125	Maximum Hour
Mallard Point Booster Station Pump No. 1		8	Maximum Hour
Mallard Point Booster Station Pump No. 2		8	Maximum Hour
US 60 Booster Pump Station Pump No. 1		10	Maximum Hour
US 60 Booster Pump Station Pump No. 2		10	Maximum Hour
Woodlake Booster Station Pump #1		1,000	Maximum Hour
Woodlake Booster Station Pump #2		1,000	Maximum Hour
Woodlake Booster Station Pump #3		1,000	Maximum Hour
Total Maximum Hour		6,305	
Total Horsepower		23,952	

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION**

Witness: **Paul R. Herbert**

49. RD - Reference Exhibit 36 at page 29 of 46. Please provide workpapers in support of the referenced breakdown of total footage of mains.

Response:

See attached workpaper for the detail supporting the breakdown of footage of mains.

KENTUCKY AMERICAN WATER
FOOTAGE OF MAINS BY SIZE

FOOTAGE OF MAINS BY SIZE

<u>Transmission Mains Size (inches)</u>	<u>Footage</u>
36	624
30	156,017
24	332,773
20	64,100
14	3,450
16	283,491
12	1,267,082
10	<u>25,753</u>
Total Transmission Mains	2,133,290
<u>Distribution Mains Size (inches)</u>	<u>Footage</u>
8	4,194,350
6	2,375,831
4	859,960
3	464,005
2.5	43,160
2.2	77,194
2	224,465
1.2	1,532
1	<u>11</u>
Total Distribution Mains	<u>8,240,508</u>
Total Footage of Mains	10,373,798

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2012-00520
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: **Paul R. Herbert**

- 50.** RD - Reference Exhibit 36 at page 19 of 46. Please explain in detail why AFUDC in the amount of \$491,629 should be included in Other Water Revenues in the Company's COSS. Provide a source for the referenced AFUDC amount.

Response:

In Company Exhibit 37, Schedule C-1, AFUDC of \$491,629 is included under the category Operating Revenues as a separate line item apart from Water Revenues and Other Revenues. Therefore, it is considered a source of revenue other than "water revenues" which reduces the revenues required from rates.

In the cost of service allocation study, Other Revenues and AFUDC were deducted from the total cost of service to determine the cost of service related to sales of water or "water revenues".