

# NYSSA Student Research

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Industry: Water Utility

**Aqua America, Inc.**

March 17, 2006

**Ticker: WTR** (NYSE)

**Recommendation: SELL**

**Price: \$27.49** (close 3/15/2006)

**Price Target: \$19**



Bryn Mawr, PA

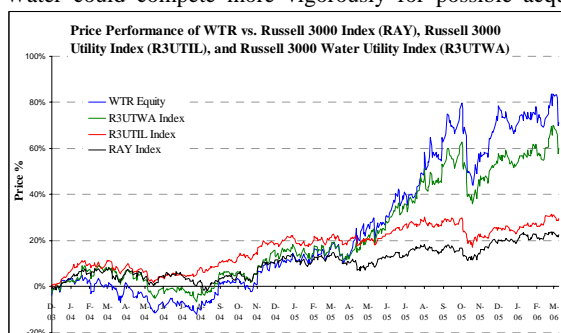
www.aquaamerica.com

Earnings/Share	Mar.	Jun.	Sept.	Dec.	Year	P/E Ratio
2004A	0.13	0.14	0.20	0.18	0.64	43.0x
2005A	0.15	0.17	0.22	0.17	0.71	38.7x
2006E	0.16	0.18	0.25	0.22	0.81	33.9x
2007E	0.17	0.19	0.26	0.23	0.85	32.3x

## Highlights

- **SELL recommendation based on valuation concerns.** Our two-stage discounted cash flow (DCF) and dividend discount models (DDM), assuming a cost of equity of 8.35% and a long-term sustainable earnings per share (EPS) growth rate of 5.4%, lead to a twelve-month price target of \$19. This represents a 31% discount to the current price of \$27.49. The high forward price-earnings ratio (P/E) of 33.9, well ahead of its peer group, also supports this recommendation.
- **Capital-intensive growth strategy puts pressure on cash flows.** WTR's aggressive growth-by-acquisition strategy has led to a large gap between cash flows from operations and the cash required for investing. Although the dividend payout ratio has been reduced from 75% to 57% within the past ten years, only 60% of the cash used in investing is financed with internally generated capital. The company finances the balance with debt and incremental equity issuance, causing equity dilution. In the long run, WTR will generate more cash flows, but these future cash flows are not large enough to justify the current stock price.
- **Regulated ROE caps long-term sustainable growth.** We have conducted extensive research and interviews to understand the water utility regulatory environment and rate-setting process. In all states where WTR operates, the public utility commissions set water rates that allow for a return on equity (ROE) in the range of 9% to 13%. We do not believe that this regulated model allows for a sustainable ROE in excess of 13%. The company's five-year average ROE of 12.5% and retention ratio of 43% imply a long-term sustainable EPS growth of 5.4%. We believe this long-term growth rate is too low to support WTR's current multiple.
- **Insider sales support valuation concerns.** Recent insider sales signal top management's belief that the stock is overvalued at its current price. From January of 2005 to February of 2006, the CEO liquidated over 500,000 shares through stock option exercises (absent any evidence of option expiration or initial vesting). During the same period, 50% of the designated insiders decreased their holdings by more than 20%.
- **Potential American Water IPO poses threat to WTR valuation.** WTR currently represents 50% of the water utility industry's market capitalization. A possible IPO of American Water, currently a subsidiary of German-based RWE with four times the annual revenue of WTR, could lead to a shift in asset allocation away from WTR to American Water, and a correction to WTR's overvaluation. Additionally, American Water could compete more vigorously for possible acquisition targets, driving acquisition costs higher.

TEAM F



Market Profile	
52 Week Price Range	\$17.64-29.79
Average Daily Volume	413,361
Beta	0.59
Dividend Yield (Estimated)	1.46%
Shares Outstanding	129m
Market Capitalization	\$3.54b
Institutional Holdings	30%
Insider Holdings	3%
Book Value per Share (12/31/05)	\$6.30
LT Debt to Total Capital	52%
Return on Equity	11.7%

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**Important disclosures appear at the back of this report**

## Investment Summary

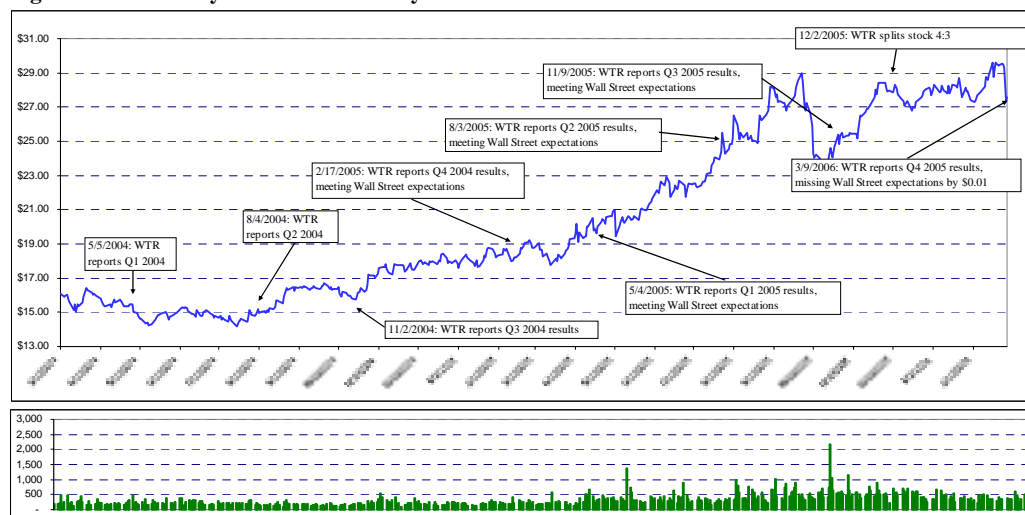
We initiate coverage of Aqua America Inc. (WTR) with a SELL rating. Our fundamental analysis, which includes discounted cash flow (DCF), dividend discount model (DDM), and relative valuation (RV) methods, leads us to conclude that the twelve-month price target for WTR’s stock is \$19, a significant discount to the \$27.49 at which its stock is currently priced. We conclude that justifying its current stock price requires unreasonable assumptions for its cost of equity and/or the long-term growth rate (see the sensitivity analysis in Appendices F and H).

We find that the long-term EPS growth rate of 5.4% is limited by a regulated, five-year average ROE of 12.5% multiplied by the retention rate of 43%. Because revenue growth from existing assets is limited by population growth and inflation-related rate increases, the company must engage in a growth-by-acquisition strategy to enhance revenue beyond these natural limitations. Although the company can continue to grow top-line revenue through acquisitions in the short term, the cash required to finance required capital improvements and acquisitions beyond the short run far exceeds the company’s internally generated capital at the current dividend payout rate. Thus, additional external financing is required if the company hopes to realize a sustainable growth rate greater than the 5.4%.

The regulated rate-setting structure provides an incentive to utilize equity financing. But issuing new equity is dilutive to EPS, limiting bottom-line, per-share growth potential. Moreover, as a regulated utility, the company has access to tax-advantaged, low-cost debt financing and maintains a capital structure that carries a debt-equity ratio of approximately “50/50.” Any departure from the current capital structure would be subject to regulatory scrutiny. Considering all of the facts, we find it difficult, if not impossible, to justify the high forward P/E of 33.9 for WTR’s stock, a multiple in the water utility industry suggesting that the stock is “priced to perfection.”

Recent insider sales indicate top management’s beliefs that the current stock price may be overvalued. As evidence, in the fourteen months ending February of 2006, the CEO and Chairman, Mr. Nicholas DeBenedictis, liquidated the equivalent of more than six years worth of stock option compensation. In addition, the CFO, Mr. David Smeltzer, also decreased his holdings by 36%. During the same period, nine of WTR’s fourteen designated insiders decreased their holdings, with seven of these insiders reducing their holdings by more than 20%. (see Appendix M, Insider Transactions, for details)

**Figure 1: WTR Daily Stock Price History**



Source: Capital IQ

Although WTR is the largest U.S.-based publicly-traded water utility, it is not the largest investor-owned water utility. American Water, a wholly owned subsidiary of German-based RWE, operates utilities that serve 18 million residents in the U.S. and has operating revenues four times larger than those of WTR. It is widely anticipated that RWE will dispose of its ownership in American Water through an IPO. Although we cannot rule out the possibility of either a private equity transaction or the sale of assets to another water utility, we think the probability that either of these events will occur is low. For one thing, the capital intensity of the business and the regulated ROE limit the return on private equity. As another thing, because American Water is much larger than WTR, we do not believe that WTR could acquire more than a small percentage of American Water’s asset base. Moreover, an American Water IPO has the potential to double

the current market capitalization of the water utility industry. This could potentially result in a shift in asset allocation away from WTR, the current market leader, to American Water, the new market leader. This decreased demand for WTR’s shares will correct its overvaluation. If American Water emerges as a stand-alone company, it would need to pursue a similar growth-by-acquisition strategy as WTR to realize a significant return on investment. This could increase the price paid by both companies for acquisition targets, ultimately reducing profitability for WTR.

Despite the overvalued stock price, we believe that the company is strong and is in a stable industry that enjoys the following highly desirable characteristics: predictable rate increases, regulated ROE, low price elasticity of demand, and no threat of emerging substitutes (see Appendix K for a SWOT analysis of the company). Notwithstanding these positive characteristics, we believe that WTR’s stock is significantly overvalued when examined with a realistic assessment of its fundamentals and potential for sustainable growth.

## Valuation

We value WTR by using three approaches: discounted cash flow to equity (DCF), dividend discount model (DDM), and relative valuation (RV). All three approaches provide the same conclusion: the company’s stock price is significantly overvalued.

### Cost of Equity (COE) and Long-term Growth Rate Determination

We estimate WTR’s cost of equity (COE) through two major methods: the capital asset pricing model (CAPM) and the cost of debt plus risk premium, as shown in the following table. (see Appendix D, Cost of Equity Determination, for detailed calculations and explanations.)

To estimate WTR’s COE by using the CAPM, we first estimate WTR’s beta. As seen in Appendix D, its betas are insignificant when estimated from either five years or ten years of monthly data. When using weekly data, we obtain significant betas that vary greatly, from 0.44 for a beta estimated from historical data without adjustments to the beta of 0.74 estimated by using Value Line’s method with adjustments. This calls into question the use of a single beta computation in determining the COE of WTR. Therefore, we use these two significant betas. As a third alternative, we also estimate the COE of WTR by adding an equity risk premium of 3% to its cost of debt of 5.5%. By equally weighting these three possibilities, we arrive at a COE of 8.35%. We believe that this COE is conservative, leading to a higher valuation because we include the unadjusted beta of 0.44 and because a significant portion of the company’s debt is tax-advantaged.

#### Cost of Equity (COE) Determination

Approach 1 Using Adjusted (Value Line) Beta		Approach 2 Using Unadjusted Beta		Approach 3 Using Cost of Debt + Equity Risk Premium	
Beta	0.74	Beta	0.44	WTR Weighted Average Cost of Debt	5.50%
Expected market risk premium	6.00%	Expected market risk premium	6.00%	Equity Risk Premium above the	3.00%
Risk-free Rate*	4.73%	Risk-free Rate*	4.73%	Cost of Debt	
k (using CAPM)	9.17%	k (using CAPM)	7.37%	k (cost of debt + equity risk premium)	8.50%

\*Risk-free rate using 10-year Treasury yield

Equally Weighted Cost of Equity (COE) of 3 Approaches 8.35%

Source: Student Estimates

The long-term sustainable growth rate of 5.4% is derived through multiplying WTR’s five-year average ROE of 12.5% with five-year average retention ratio of 43%.

### Discounted Cash Flow (DCF) Valuation

The DCF analysis of WTR reveals the delicate balance that the company is maintaining with respect to its cash flows. The capital-intensive nature of the business, coupled with the growth-by-acquisition strategy, poses challenges when modeling the forward free cash flows to equity (FCFE). The challenge stems from the company’s extensive use of external debt and equity sources. The DCF approach yields not only a valuation but also highlights the major challenges that WTR faces in executing its growth-by-acquisition strategy.

The company has simplified its long-term strategy into easily quoted “3-4-7-10-5” targets. It claims to strive for 3% annual revenue growth through price, 4% customer growth (organic and acquisition), 7% total revenue growth, 10% net income growth, and 5% EPS growth.

During the first stage of the DCF analysis, which runs from 2006 through 2010, we assume that revenue growth is 9%. From 2011 onward, we assume that terminal revenue growth is 7%, which is in line with the company’s long-term growth target. The 9% revenue growth in the first stage is achieved in three parts: 2% from organic customer growth, 3% from rate increases, and 4% from acquisitions. In the terminal stage, we

assume that acquisition growth will slow to 2%, and that organic and price-related growth will remain the same. These growth rates appear to be achievable, especially in light of the industry trends and legislation that are driving consolidation. These stages are influenced by the company's growth during two periods, 1991-1998 and 1999-2005. The earlier period has slower growth in customers, average revenue per unit (ARPU), and operating revenue (see Appendix E, DCF Assumptions and Valuation)

The operational efficiency ratio of WTR, which is its operating and maintenance expense as a percentage of operating revenue, has deteriorated from 36% in 2001-2002 to nearly 41% in 2004-2005, suggesting a significant drop in efficiency. The table below displays the last five years of data regarding these expenses.

	2001	2002	2003	2004	2005
Operating Revenue	\$307,280	322,028	367,233	442,039	496,779
Operations & Maintenance Expense	111,885	117,735	140,602	180,687	203,088
Operational Efficiency Ratio	36.4%	36.6%	38.3%	40.9%	40.9%
Annual Change %	-2%	0.4%	4.7%	6.8%	0.0%

Note: \$ in thousands. Source: Company 10-Ks<sup>1</sup>

This decline in efficiency can be attributed to the company's rapid expansion into the South through the acquisition of AquaSource in 2003 and Heater and Florida Water in 2004. For operational efficiency, we assign a value of 40% in the first stage and 39% in the terminal growth period. We assign these values in anticipation of operational efficiency improvements having enough time to be realized in the newly acquired units. However, as the CFO stated in the presentation to the NYSSA IRC teams on February 8, 2006, WTR will probably never be able to improve the operational efficiency ratio to its initial level.

Operational efficiency is important to the company's short-run financial performance. In the long run, however, its impact may not be easily measured. To explain, in an unregulated setting, a company can realize significant increases in net income and free cash flows by decreasing operational expenses as a percentage of revenue. However, for a regulated water utility company like WTR, reductions in these expenses are eventually given back in the rate setting process because regulators set rates only to cover them. Regulators determine rates by focusing on expenses and equity investments. They set rates to approximate cost recovery and allow for a regulated ROE. In the short run, any surprises in operational expenses not considered in the rate setting process, which typically occurs every other year, will affect earnings. In the long run, operational expenses are neutral to earnings because all costs are matched with regulated rates. Nonetheless, operational efficiency is an important issue in the rate-setting process because regulators hold water utilities accountable for inefficiencies. This allows a utility company to use operational efficiency gains as a bargaining chip with regulators. During a hypothetical rate case, a decrease in the utility's operational expense would allow for the regulator to keep rates unchanged, while providing for a possible higher ROE. This is favorable to both parties. The regulator can show that consumers have been protected from higher rates and the utility can realize higher profits with an increased return on invested capital. In other words, the reduction in operating expense is rewarded with a higher return on invested equity. Thus, the company retains the financial benefits of a reduced cost structure while maintaining a strong and positive relationship with regulators.

Appendix E presents a summary of DCF assumptions and the details of the two-stage DCF valuation. We reach a twelve-month target price of \$19.78, using a COE of 8.35% and terminal growth rate of 5.4%. The chart below shows the highlights of the DCF modeling.

**Discounted Cash Flow to Equity (DCF) Valuation for WTR**

Fiscal Year	Stage 1: 2006-2010					Stage 2: after 2010
	2006	2007	2008	2009	2010	2011
Operating Revenues	\$541,489	\$590,223	\$643,343	\$701,244	\$764,356	\$817,861
Net Income	106,330	115,879	125,227	135,679	148,421	167,562
Cash Flow from Operations	223,105	244,393	265,158	287,734	314,175	344,897
Free Cash Flow to Equity (FCFE)	4,210	16,062	27,592	40,593	56,679	112,579
Shares Outstanding (mil.)	133.08	137.07	141.19	145.42	149.79	149.79
FCFE/Share	0.03	0.12	0.20	0.28	0.38	-
Terminal Value beyond 2010	-	-	-	-	-	25.48
Discount Factors	0.92	0.85	0.79	0.73	0.67	0.67
<b>Present Value (PV) of FCFE/Share</b>	<b>0.03</b>	<b>0.10</b>	<b>0.15</b>	<b>0.20</b>	<b>0.25</b>	<b>17.06</b>
Sum of PV FCFE per share as of Year-end 2005	\$17.80					
Cash Balance (CB) at Year-end 2005 (per share)	\$0.09					
<b>12 - Month (March 2007) Price Target</b>	<b>\$19.78</b> = [CB + Sum of PV (FCFE / Share)] * [(1+k) <sup>1.25</sup> ]					

Note: \$ in thousands except for per share data. Source: Student Estimates

<sup>1</sup> Operations and Maintenance expense for 2004 as reported in the company 10-K was \$178,345k and included \$2,343k that was the result of a one-time gain from the sale of assets. In the table, we add this back to reflect the expense prior to the gain.

See Appendix F for the DCF sensitivity analysis using different values of the COE and the terminal FCFE growth rate.

**Dividend Discount Model (DDM) Valuation**

The company has paid dividends consistently for 61 consecutive years and has maintained a stable dividend payout ratio of around 57% for the past five years. Therefore, the DDM is an appropriate way to value its stock. Considering the company’s acquisition strategy and rate increase history, we assume, for the first stage, that WTR’s dividend per share would grow by 9% from 2006 to 2010. We follow this by assuming a long-term sustainable growth rate of 5.4% in the terminal stage, which begins in 2011. By discounting the five-year dividend yield and the terminal stock value as of year-end 2010, respectively, back to March of 2007, we reach our target price of \$18.62 (see Appendix G for the detailed DDM valuation). This is fairly close to our twelve-month target price of \$19.78 from the DCF valuation. Comparing our DDM valuation with WTR’s current price of \$27.49 as of March 15, 2006, we find that WTR is significantly overvalued.

In the second stage, the long-term sustainable growth rate and COE are the two key factors that can significantly alter the target price. Therefore, we perform a sensitivity analysis on the valuation with respect to these two variables (see Appendix H for the DDM sensitivity analysis). To match the market price of \$27.49, as of March 15, 2006, WTR would have to either lower its COE to 7.38% while maintaining a long-term growth rate 5.4% or boost its long-term growth rate to 6.4% while keeping its COE at 8.35%. Knowing that WTR’s strategy has been to fund acquisitions through external debt and equity, it is not likely that WTR will be able to lower its COE to 7.38%. Since WTR’s ROE is regulated, it can only increase its long-term growth rate by reducing the dividend payout ratio from 57% to 49%. However, lowering the dividend payment further reduces the valuation associated with the DDM.

**Relative Valuation**

Among eleven U.S.-based publicly traded water companies, WTR’s market capitalization is higher than the sum of that of the other ten companies. For our relative valuation, we select the next seven largest water companies as the “Water Utility Peer Group” and introduce seven additional companies from the public utility sector as the “Other Public Utility Peer Group.” As a result, we have a total of 14 companies in the “All Peer Group” to perform a relative valuation on WTR.

Relative Valuation Summary				
	Trailing Price/Earnings	Forward Price/Earnings	Price/Book Value	Price/Sales
<b>Aqua America (WTR)</b>	<b>38.7 x</b>	<b>33.9 x</b>	<b>4.7 x</b>	<b>8.0 x</b>
Water Utility Peer Group Median	20.2 x	29.2 x	2.6 x	3.0 x
Other Public Utility Peer Group Median	16.9 x	15.7 x	2.2 x	1.8 x
All Peer Group Median	22.6 x	18.0 x	2.4 x	2.3 x
Russell 3000 Water Utility Index (R3UTWA)	36.2 x	-	3.4 x	4.0 x
Russell 3000 Public Utility Index (R3UTIL)	16.2 x	-	2.1 x	1.4 x
Russell 3000 Index (RAY)	16.6 x	-	2.8 x	1.5 x

Source: Bloomberg, Students Estimates

As shown in the Appendix I, Relative Valuation, the company’s forward P/E is 33.9 as of March 15, 2006, the second highest. However, its twelve-month dividend yield is the third lowest while its dividend payout ratio is the fourth lowest. Although WTR has the second highest ROE among the eight water companies, its ROE ranks only fifth compared to the “All Peer Group.” Its aggressive acquisition strategy contributes to it having the third highest geometric growth in net sales and net income, and the second highest geometric growth in dividend per share and EPS after extraordinary items. In addition, WTR has the fourth highest profit margin but its P/B of 4.7 and P/S of 8.0 are high compared to 2.4 and 2.3, the respective median values of the “All Peer Group.” In line with our previously discussed fundamental analysis, WTR’s high P/E, P/B and P/S demonstrate that WTR is overvalued relative to its peers.

**Business Description**

**Company Background**

Aqua America is the largest publicly traded water utility in the United States. It was created on January 16, 2004, when Philadelphia Suburban Corporation (PSC) changed its name to “Aqua America.” At that time, Aqua America changed its ticker symbol on the NYSE and Philadelphia Stock Exchange to “WTR.” Prior to this, PSC had operated as a utility in Pennsylvania for 120 years and had been publicly traded since 1971.

**Acquisitive Business Model**

The company has been significantly growing through acquisitions of small, municipally-owned water systems. There are over 50,000 such systems in the U.S., ranging from remote rural systems serving low populations to the New York City water system that serves millions. Approximately 22,000 of these municipal systems are located in states where WTR has operations. Upon their acquisition, these systems are integrated into WTR's operations and synergies are created by taking advantage of existing resources within WTR. In addition to growth-by-acquisition, WTR aggressively seeks rate increases in all states by petitioning each state's regulatory agency.

**Aqua America Geographic Presence and Customer Base**

The company owns water and waste water utilities in 13 states: Pennsylvania, Ohio, Illinois, Texas, New Jersey, North Carolina, Indiana, Florida, Maine, Virginia, New York, Missouri, and South Carolina (see Appendix J). Its operations in Pennsylvania account for approximately 56% of its revenue in fiscal year 2005 and its top four states, Pennsylvania, Ohio, Illinois, and Texas, account for close to 80% of its revenue for the same year. Throughout these states, WTR serves more than 2.5 million people. Approximately 60% percent of its revenue comes from residential customers, 15% from commercial customers, and 4% from industrial customers. The remainder flows from other services, such as waste water treatment and fire protection.

**Industry Overview and Competitive Positioning****Key Players in the Water Utility Industry****Government-Owned Water Systems**

Government-owned water systems vary greatly in size. Some serve a small number of customers in remote rural locations; others serve millions in highly populated areas. There are approximately 50,000 of these systems in the U.S., with the majority having only a few thousand customers. Many of these systems provide significant amounts of cash to the governments that own them. However, because of their small size, these water systems have a hard time making the capital improvements needed to keep up with ever-changing government regulations. Additionally, they do not have the resources to manage complex tasks, such as filing rate cases with state regulators and forecasting capital expenditures. As a result, the governments that own these systems are usually open to hearing from interested buyers.

**Investor-owned Water Systems**

There are only eleven U.S.-based, publicly traded water utility companies in the U.S., of which WTR is the dominant player. These companies have the expertise necessary to manage complex water systems and most of them have been doing it for the better part of a century. As a result, these companies are very stable and pay dividends consistently, and therefore have attracted interest from investors who are looking for a safe, stable, and growing sector in which to invest.

**Subsidiaries of Foreign Utility Conglomerates**

This group has the largest water utility company in the U.S., American Water. It also includes the second largest water utility company, United Water Resources. These companies are owned by German utility conglomerate, RWE, and French water utility, Suez, respectively. Because of the sheer size and bureaucracy involved with a multi-national corporation, these companies are at a disadvantage relative to WTR in the regulatory space. This may change, however, as RWE announced in November of 2005 that it plans to divest itself of American Water. If this occurs, and American Water becomes a publicly traded firm again, it could significantly change the competitive landscape of the U.S. water utility industry.

**Competitive Positioning**

Although WTR may be the dominant player among the eleven U.S.-based publicly traded companies, it is not the largest investor-owned water utility company. By serving 2.5 million residents in 13 states and realizing \$497 million in revenue, it is the third largest investor-owned water utility company. The largest one is American Water, which serves 18 million people in 20 states and enjoys \$2.1 billion in revenue. The second-largest is United Water Resources, which serves seven million residents in eight states and takes in \$500 million in revenue. Though smaller than American Water and United Water Resources, WTR is the largest and one of the most profitable U.S.-based investor-owned water utility companies (see Appendix N).

The company is clearly pursuing a growth-by-acquisition strategy, while United Water Resources is focused more on “public-private” partnerships and contract management of outsourced water and waste water systems. American Water’s growth strategy was similar to that of WTR before its purchase by RWE in 2002. Following RWE’s planned divestiture of American Water, American Water may return aggressively to its growth-by-acquisition strategy. Because each firm would have a similar growth strategy, WTR could face heightened competition in particular within the eight states in which both firms operate.

### **Water Utility Industry Outlook and Risks**

The outlook for the water utility industry is positive. The U.S. population is expanding and so is the amount of water demanded. Additionally, much of this expansion has been occurring, and will likely continue to occur, in suburban and “ex-urban” areas where individuals rely on water systems instead of their own wells. In addition to growth in the demand for water, investor-owned water companies have increasingly been able to acquire municipal systems, leading to growth acquisitively and organically. This growth-by-acquisition is a consequence of the need for municipalities to upgrade aging water systems and embrace increasingly complex regulatory requirements. As a result, many municipalities are willing to sell their water systems to an investor-owned utility for a discounted rate in exchange for the needed upgrading of their facilities. This provides an excellent, though very capital intensive, way for companies in this industry to increase their revenues and profits.

On the downside, the water utility industry is facing the following risks:

*Customer Conservation and Weather Risk:* The high fixed-cost structure of water utilities makes earnings vulnerable to significant variations in customer usage caused by weather or customer conservation efforts.

*Capital Expenditure Risk:* Water utility companies are required to make intensive capital investment. If they are awarded smaller rate increases from the utility commissions they operate under, or experience a severe drop in customer usage caused by the weather or conservation efforts, these large expenditures may become more burdensome.

*Home Land Security Risk:* Water utility companies are operating on heightened alert and have undertaken significant steps to protect water supplies from terrorist attacks. Compared to the regular infrastructure requirements of the industry, these expenditures are minimal. Still, the risk of a terrorist attack against the water supply remains.

*Interest Rate Risk:* Water utility companies’ risk exposure to changes in interest rates is a result of their heavy reliance on external debt. This exposure is usually related to financing between rate increases.

## **Water Utility Regulation**

The water utility industry is regulated by state public utility commissions that have the power to determine rates and charges, set franchise areas and conditions of service, approve acquisitions, and authorize the issuance of securities. Water utilities like WTR are affected greatly by the timeliness and adequacy of rate allowances within the states in which they operate.

Aqua Pennsylvania, the largest subsidiary of WTR and which accounts for about 56% of WTR’s operating revenues in 2005, is regulated by the Pennsylvania Public Utility Commission (PUC). Upon interviewing an analyst from the PUC’s Bureau of Fixed Utility Services, we found that the approval process for WTR’s rate increase applications is predictable. It begins with Aqua Penn proposing a large rate increase. The Office of the Consumer Advocate counters with a small increase. A third-party mediator then offers PUC its opinion. The PUC commissioners use the information usually to choose a rate increase that equals about 50% of what Aqua Penn asked for (see Appendix L for complete rate increase steps and a table of historical rate increases). The analyst indicated that Aqua Penn has a strong relationship with the PUC because it has often acquired troubled municipal water systems that need major capital improvements, moving the PUC to grant, on average, a high ROE on the scale used by the PUC’s commissioners.

Although Aqua Penn appears to have a good working relationship with the PUC, its success at obtaining rate increases is not equal to that of its main competitor, Pennsylvania American Water, which is a subsidiary of American Water. Penn American has garnered a cumulative rate increase of 48.03% from the PUC during the ten-year period between 1995 and 2004, as compared to Aqua Penn’s 38.12%; and has enjoyed a ten-year annualized rate increase of 4.00%, as compared to Aqua Penn’s 3.28%. These are additional reasons why a re-emerging, publicly traded American Water could pose a significant threat to WTR’s growth-by-acquisition strategy.

Nonetheless, Aqua Penn's ten-year increase of 3.28%, although below that of Penn American, stands in line with the stated goal of WTR to increase top-line revenue by 7%, in part through 3% rate increases. The 3.28% has more than offset the effects of inflation. During the same ten-year period, annualized inflation, as measured by the Consumer Price Index, rose from 86.9 in 1995 to 110.76 in 2004, an increase of 2.46%. In addition, according to the Bureau of Labor Statistics' Water Price Index, water prices increased by 36.47% during this ten-year period. Aqua Penn's ten-year rate increase of 38.12% slightly exceeds this number, making its rate growth in-line with that of national water prices.

### **Regulatory Lag**

As a regulated enterprise, WTR charges rates set by the relevant utility commissions to provide for recovery of costs and a return on its investment. Recovery of the effects of inflation through higher water rates depends on receiving adequate and timely rate increases. Spikes in inflation or a series of longer-than-expected lags in rate increase approvals could hurt WTR's profitability.

### **Water Quality Regulation**

Water quality has come under increasing scrutiny nationwide. This has posed problems for many poorly managed municipal water utilities, which have had difficulty meeting new regulations, such as the EPA's Enhanced Surface Water Treatment Rule that was passed in December of 2005. However, these problems have presented growth opportunities for investor-owned water utility companies like WTR. A key feature of WTR's strategy has been to purchase small municipal systems to grow through acquisitions; in effect rescuing utilities that cannot meet the capital improvement standards necessary to keep pace with new regulations. When the EPA approved more stringent regulations in December of 2005, the average expenses associated with the required ultraviolet disinfection systems are estimated to be about \$244,000 in initial capital costs, and a yearly expense of about \$19,000. It is estimated that this new requirement will cost water systems and states from \$73 to \$111 million more per year, helping to fuel a strong desire by municipally owned systems to be acquired by investor-owned companies like WTR. Therefore, this requirement, and future ones like it, creates opportunities for WTR to continue to expand through acquisitions by purchasing these systems at attractive prices.

## **Insider Trades**

An examination of recent insider transactions shows that WTR's top management has significantly reduced its holdings in the company from January of 2005 to February of 2006. We believe this shows that management's own actions support the SELL recommendation. The largest insider position is held by CEO and Chairman Mr. Nicholas Debenedictis. Although he has increased his position by 3% over this period, it does not reflect the large number of shares he liquidated through the execution and sale of various stock options. As seen in Appendix M - Insider Transactions, Mr. Debenedictis sold a net of 431,824 shares in the 14 months ending February of 2006. To put this into perspective, his position as of February of 2006 consists of 565,636 shares, not including stock options.

From 1999 through 2004, Mr. Debenedictis accumulated 346,249 stock options as part of his executive compensation package. He liquidated the equivalent of more than six years of stock option accumulation since January of 2005. As seen in the graph in Appendix M, Mr. Debenedictis began aggressively to sell options beginning in September of 2005, executing and liquidating over 381,000 shares of WTR stock for a net gain of over \$7 million. None of the options executed and liquidated over this period was recently vested, nor was any set to expire (see the chart in Appendix M for details).

Overall, since January of 2005, WTR's insiders sold a net of 511,385 shares. Making adjustments for the stock split in December of 2005, we find that the insiders' total position decreased by 120,302 shares, or 12.39%. Of WTR's 14 designated insiders, nine decreased their holdings, with seven of those insiders decreasing their holdings by more than 20% (see Appendix M for a table of these transactions).

## **Financial Analysis**

### **Income Statement**

Since 2001, WTR's profitability margins have been slowly declining. Its net income margin has dropped from 19.6% in 2001 to 18.3% in 2005. Operating income margin has also been on a steady decline because of decreasing operational efficiency, dropping from 43.7% in 2001 to 39.6% in 2005. Operations have become less efficient since WTR's expansion into the South, as depicted by a rising operational efficiency

ratio from 36.4% in 2001 to 40.9% in 2005. Total revenues have grown at a compounded five-year rate of 12.6%, which can be attributed to a 9.3% customer growth rate and a 3.3% of annual rate increase. For the past five years, net income and EPS have a CAGR of 11.6% and 8.3%, respectively (see Appendix O, Financial Ratio Analysis, for the historical and projected financial ratios from 2001 through 2008).

Selected Growth Rates	5-Year CAGR	2001	2002	2003	2004	2005
Customer Growth	9.3%	0.5%	23.8%	11.5%	6.1%	6.0%
Revenue Growth	12.6%	12.1%	4.8%	14.0%	20.4%	12.4%
Net Income Growth	11.6%	15.7%	11.1%	6.6%	10.1%	15.0%
EPS Growth Rate	8.3%	11.5%	12.6%	-3.4%	9.7%	12.1%

Source: Company 10-Ks

**Return on Assets and Return on Equity**

With WTR’s expansion into southern states, operational efficiency has not only declined but WTR’s return on assets (ROA) has fallen from 4.0% to 3.6%, a drop of 10%. In addition, during the same period, its ROE has dropped from 13.3% to 11.7%. These declines support the conclusion reached from our DCF, DDM, and RV methods that WTR’s stock price is overvalued.

**Cash Flows and Balance Sheet**

An analysis of the company’s cash flows provides additional insight into the challenges WTR currently faces in executing its strategy. The five-year average of internally generated capital (i.e., cash flows from operations minus dividend payments) divided by the sum of CAPEX and acquisition costs is only 50% (ranging from 29% in 2003 to 60% in 2005). This means that the company must raise the other 50% of cash needed for investing through external financing. The heavy use of external capital puts pressure on cash flows and causes equity dilution. Although our forecast of free cash flows shows reduced reliance on external equity financing, it is based on conservative growth assumptions. Any attempt to increase WTR’s growth by acquisitions would result in additional dependence on external sources of financing, putting additional pressure on free cash flows.

	2001	2002	2003	2004	2005
CAPEX	\$124.09	\$136.16	\$163.32	\$195.74	\$237.46
Acquisition Costs	9.52	8.91	192.33	54.30	11.63
Dividends Paid	34.23	36.79	39.92	45.81	51.14
Dividend Payout Ratio	57%	55%	56%	59%	57%
CAPEX+Acquisition Costs+Dividends	167.84	181.87	395.57	295.84	300.23
Cash Flow from Operations (CFO)	102.17	121.56	143.37	173.60	199.67
Internally Generated Capital (=CFO-Dividends)	\$67.93	\$84.77	\$103.46	\$127.80	\$148.54
External Financing Needed for Investing Activities & Dividends	65.67	60.31	252.20	122.24	100.56
Net Proceeds from Debt	63.91	81.52	91.68	42.43	127.47
Net Proceeds from Equity	8.93	(14.49)	133.29	55.11	19.67
CFO/(CAPEX+Acquisition Costs+Dividends)	61%	67%	36%	59%	67%
(CFO-Dividends)/(CAPEX+Acquisition Costs)	51%	58%	29%	51%	60%

Note: \$ in millions. The "External Financing Needed" and the "Net Proceeds from Debt" + "Net Proceeds from Equity" do not tie exactly due to the timing of cash flows and the company's use of short-term debt to supplement their cash flow needs. Eventually, the company refinances short-term debt with equity and/or long-term debt.

Source: Company 10-Ks

The company’s ongoing effort to expand by acquisitions and the increasingly stringent regulatory requirements on water quality have led to higher capital spending. For example, since 2001 CAPEX has nearly doubled, growing from \$124 million to \$238 million. Although WTR’s dividend payout ratio has been stable, averaging 57% from 2001 through 2005, it is 10% lower than the water utility industry average and 20% lower than its payout ratio ten years ago. Thus, it is conceivable that continued capital spending will lead to further declines in this ratio, making the stock less attractive to many risk-averse investors and leading to downward pressure on the stock price.

Subject to regulatory approval, WTR’s capital structure is evenly divided between debt and equity. The company enjoys an “A+” rating from Standard & Poors, which translates to a cost of debt of approximately 5.5%. Thus, it appears to have little difficulty arranging additional debt financing. In addition, the company’s interest coverage ratio stands at 3.84 in 2005, up from 3.71 in 2004 and 3.49 in 2001. The industry benchmark for this ratio is 2, so WTR is, at this time, in a favorable position. As a regulated utility company, WTR also has ready access to tax-advantaged loans and bonds, of which it makes frequent use.

**Investment Risks to the Sell Recommendation**

Although the fundamental analysis is compelling, with consistent agreement among all three valuation techniques, some risks exist to our SELL recommendation. Specifically, we identify four major risk categories below.

**Acquisitions:** The EPA has been imposing increasingly stringent regulations on water utilities. The costs associated with compliance can cause municipalities to divest their water assets rather than invest to upgrade them. Investor-owned utilities may have the opportunity to acquire these cash-strapped utilities at a discount. In addition, WTR is skilled at investor relations, using press releases about numerous small acquisitions that emphasize the addition of new customers and penetration of new markets with little mention of the acquisition cost and capital expenditure needed to maintain these acquired systems. As long as investors perceive that its acquisition strategy will be successful, WTR may experience ongoing investor support.

**Abnormal Regulatory Success:** It appears that WTR has developed a good working relationship with its regulators. Our research indicates that the company is highly regarded by the regulatory body in Pennsylvania, where it derives 56% of its revenues. Our review of Aqua Pennsylvania’s rate increase requests in 2004 and 2005, for example, reveals its skill at presenting compelling evidence that justifies a high COE (e.g., 12%), such as its use of Value Line’s relatively high betas and its emphasis on the risk of its acquisitions. If the company were to achieve even greater success at “working” the regulatory system for rate increases, the stock price could remain high.

**Regulatory Change:** If the current regulatory structure is altered in a way that allows for long-term EPS growth to exceed current expectations, the company’s value could rise. Deregulation has occurred in many utility markets, with significant disruption to existing business models. Although there is little indication of any deregulation of the water utility industry, any change to the regulatory structure could significantly affect the industry. If this change is positively viewed by investors, then it is not likely that the share price will fall in line with our forecast.

**Continued Market Inefficiency:** We believe that WTR’s current P/E, P/B, and P/S ratios reflect the fact that the company’s share price is bolstered by unfounded optimism among investors about the company. At 70%, WTR has a high retail ownership, and retail investors seem more prone to equate a “good company” with a “good stock” than institutional investors. Although the fundamental analysis does not support WTR’s current share price, the desire of investors to at least hold the stock could support the stock price beyond what we expect.

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**Appendix A: Pro Forma Income Statement**

\$ in thousands except for per share data

	2001	2002	2003	2004	2005	2006E	2007E	2008E	2009E	2010E
Operating revenues	\$ 307,280	\$ 322,028	\$ 367,233	\$ 442,039	\$ 496,779	\$ 541,489	\$ 590,223	\$ 643,343	\$ 701,244	\$ 764,356
Costs and expenses:										
Operations and maintenance	111,885	117,735	140,602	178,345	203,088	216,596	236,089	257,337	280,498	305,742
Depreciation	37,979	41,424	48,522	54,564	60,747	68,054	74,353	80,819	87,476	95,497
Other	23,076	22,365	24,548	31,896	36,437	38,701	41,881	45,778	50,307	54,787
<b>Operating Income</b>	<b>134,340</b>	<b>140,504</b>	<b>153,561</b>	<b>177,234</b>	<b>196,507</b>	<b>218,138</b>	<b>237,900</b>	<b>259,409</b>	<b>282,964</b>	<b>308,330</b>
<i>Operating Income Growth</i>	15%	5%	9%	15%	11%	11%	9%	9%	9%	9%
Other expense (income):										
Interest expense, net	39,859	40,396	44,662	48,679	52,062	56,748	61,855	67,422	73,490	80,104
AFUDC	(1,222)	(1,389)	(2,127)	(2,304)	(2,447)	(2,655)	(2,971)	(3,300)	(3,534)	(3,833)
Other	(3,384)	(7,755)	(5,692)	(1,272)	(1,177)	(5,394)	(5,792)	(5,101)	(4,841)	(5,734)
Income before income taxes	99,087	109,252	116,718	132,131	148,069	169,440	184,808	200,388	217,849	237,793
Provision for income taxes	38,976	42,046	45,923	52,124	56,913	62,035	67,618	73,704	80,337	87,568
<b>Net income</b>	<b>60,111</b>	<b>67,206</b>	<b>70,795</b>	<b>80,007</b>	<b>91,156</b>	<b>107,405</b>	<b>117,190</b>	<b>126,684</b>	<b>137,512</b>	<b>150,225</b>
Other income (expense):	(94)	(611)	118	(1,913)	(1,340)	(1,074)	(1,311)	(1,457)	(1,833)	(1,804)
Comprehensive income	\$ 59,911	\$ 66,543	\$ 70,903	\$ 78,094	\$ 89,816	\$ 106,330	\$ 115,879	\$ 125,227	\$ 135,679	\$ 148,421
<i>Net Income Growth</i>	16%	11%	7%	10%	15%	18%	9%	8%	8%	9%
<b>EPS</b>	<b>0.53</b>	<b>0.59</b>	<b>0.57</b>	<b>0.63</b>	<b>0.71</b>	<b>0.81</b>	<b>0.85</b>	<b>0.90</b>	<b>0.95</b>	<b>1.00</b>
<i>EPS Growth</i>	12%	13%	-3%	10%	12%	14%	6%	5%	5%	6%

Source: Company 10-Ks, and Student Estimates

**Appendix B: Pro Forma Balance Sheet**

\$ in thousands except for per share data

	2001	2002	2003	2004	2005	2006E	2007E	2008E	2009E	2010E
<b>Assets</b>										
Property, plant and equipment, at cost	\$ 1,677,061	\$ 1,836,892	\$ 2,302,304	\$ 2,626,151	\$ 2,900,585	3,186,045	3,472,924	3,761,278	4,051,166	4,342,649
Less accumulated depreciation	308,946	346,051	478,013	556,339	620,635	688,689	763,043	843,862	931,337	1,026,834
Net property, plant and equipment	1,368,115	1,490,841	1,824,291	2,069,812	2,279,950	2,497,356	2,709,881	2,917,416	3,119,828	3,315,815
Current assets	64,641	70,908	83,969	90,127	89,956	98,400	118,730	139,385	162,217	188,901
Other Assets	122,352	155,320	161,476	180,309	256,819	241,974	258,592	275,294	292,086	308,970
<b>Total Assets</b>	<b>1,555,108</b>	<b>1,717,069</b>	<b>2,069,736</b>	<b>2,340,248</b>	<b>2,626,725</b>	<b>2,837,730</b>	<b>3,087,202</b>	<b>3,332,095</b>	<b>3,574,131</b>	<b>3,813,685</b>
<b>Liabilities and Stockholders' Equity</b>										
<b>Stockholders' equity:</b>										
Stockholders' equity	472,717	493,097	659,030	748,468	811,923	914,044	1,013,860	1,111,495	1,206,580	1,298,323
Long-term debt, excluding current portion	516,520	582,910	696,666	784,461	878,438	988,925	1,096,919	1,202,552	1,305,427	1,404,685
Current liabilities	197,404	226,531	232,001	217,382	263,339	296,461	328,835	360,502	391,342	421,098
Deferred credits and other liabilities	236,667	270,420	272,314	312,129	368,894	311,415	291,965	273,712	259,067	250,271
Contributions in aid of construction	130,684	143,939	209,725	277,808	302,580	326,886	355,624	383,834	411,714	439,309
<b>Total Liabilities &amp; Stockholder Equity</b>	<b>1,555,108</b>	<b>1,717,069</b>	<b>2,069,736</b>	<b>2,340,248</b>	<b>2,626,725</b>	<b>2,837,730</b>	<b>3,087,202</b>	<b>3,332,095</b>	<b>3,574,131</b>	<b>3,813,685</b>

Source: Company 10-Ks, and Student Estimates

**Appendix C: Pro Forma Statement of Cash Flows**

\$ in thousands except for per share data

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006E	2007E	2008E	2009E	2010E
Net income	19,799	22,993	28,624	38,404	51,796	59,911	66,543	70,903	78,094	89,816	106,330	115,879	125,227	135,679	148,421
Depreciation and amortization	13,333	14,580	16,089	31,903	34,100	40,168	44,322	51,463	58,864	65,488	72,830	79,701	86,653	93,935	102,479
Deferred income taxes	3,287	4,331	5,016	6,342	10,885	14,935	18,470	26,741	40,577	44,305	48,293	52,639	57,376	62,540	68,169
Change in WC	(1,232)	(1,354)	(1,630)	(6,174)	(2,916)	(4,149)	(1,838)	(3,003)	(3,954)	(3,559)	(4,348)	(3,825)	(4,098)	(4,420)	(4,893)
Other	2,895	1,827	7,106	3,628	(6,893)	(8,700)	(5,937)	(2,732)	22	3,624	-	-	-	-	-
<b>Cash Flow from Operations</b>	<b>38,082</b>	<b>42,377</b>	<b>55,205</b>	<b>74,103</b>	<b>86,972</b>	<b>102,165</b>	<b>121,560</b>	<b>143,373</b>	<b>173,603</b>	<b>199,674</b>	<b>223,105</b>	<b>244,393</b>	<b>265,158</b>	<b>287,734</b>	<b>314,175</b>
Capex	(31,389)	(38,960)	(58,922)	(96,383)	(129,740)	(124,088)	(136,164)	(163,320)	(195,736)	(237,462)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)
Acquisitions	(42,122)	(1,226)	(24,498)	(39,164)	(3,546)	(9,517)	(8,914)	(192,331)	(54,300)	(11,633)	(35,460)	(36,879)	(38,354)	(39,888)	(41,483)
Other	24	(535)	(965)	(5,069)	223	(10,768)	(5,972)	25,498	17,540	(50,027)	-	-	-	-	-
<b>Cash Flow from Investing Activities</b>	<b>(73,487)</b>	<b>(40,721)</b>	<b>(84,385)</b>	<b>(140,616)</b>	<b>(133,063)</b>	<b>(144,373)</b>	<b>(151,050)</b>	<b>(330,153)</b>	<b>(232,496)</b>	<b>(299,122)</b>	<b>(285,460)</b>	<b>(286,879)</b>	<b>(288,354)</b>	<b>(289,888)</b>	<b>(291,483)</b>
Dividends	(14,795)	(16,129)	(18,313)	(29,217)	(30,406)	(34,234)	(36,789)	(39,917)	(45,807)	(51,139)	(60,289)	(65,703)	(71,003)	(76,930)	(84,155)
Net Proceeds from Debt	39,267	9,463	24,043	87,198	40,427	63,911	81,516	91,679	42,430	127,472	66,565	58,548	50,787	42,747	33,987
Net Proceeds from Equity	12,387	6,243	23,909	3,711	32,701	8,930	(14,494)	133,291	55,111	19,667	56,080	49,641	43,412	36,336	27,476
Net Change in Cash from Customer Advances	(2,332)	(1,989)	(429)	1,268	2,961	523	5,196	3,924	9,339	9,936	-	-	-	-	-
Other	(167)	(82)	(46)	(36)	(163)	1	(1,034)	2,645	179	(8,808)	-	-	-	-	-
<b>Cash Flow from Financing Activities</b>	<b>34,360</b>	<b>(2,494)</b>	<b>29,164</b>	<b>62,924</b>	<b>45,520</b>	<b>39,131</b>	<b>34,395</b>	<b>191,622</b>	<b>61,252</b>	<b>97,128</b>	<b>62,355</b>	<b>42,486</b>	<b>23,196</b>	<b>2,154</b>	<b>(22,692)</b>
Net decrease in cash and cash equivalents	(869)	(838)	(16)	(3,589)	(571)	(3,077)	4,905	4,842	2,359	(2,320)	-	-	-	-	-
Cash and cash equivalents at beginning of year	2,387	1,518	680	8,247	4,658	4,087	1,010	5,915	10,757	13,116	10,796	10,796	10,796	10,796	10,796
Cash and cash equivalents at end of year	1,518	680	664	4,658	4,087	1,010	5,915	10,757	13,116	10,796	10,796	10,796	10,796	10,796	10,796

Source: Company 10-Ks, and Student Estimates

**Appendix D: Cost of Equity Determination**

We use two methods to estimate WTR’s cost of equity (COE): the capital asset pricing model (CAPM) and the cost of debt plus the risk premium.

For the CAPM, we calculate the ten-year monthly, ten-year weekly, five-year monthly, and five-year weekly betas for Value Line water utility industry members, which consist of WTR and the seven biggest publicly traded water utility companies.

**Betas of WTR and Its Water Utility Peers**

WTR and its peer group are Value Line water industry members (8 Largest Publicly Traded Water Utility Companies)

Ticker	Ten Years Monthly			Five Years Monthly		
	Beta	P-value	Significant?	Beta	P-value	Significant?
<b>WTR</b>	<b>-0.07</b>	<b>0.666</b>	<b>No</b>	<b>0.08</b>	<b>0.655</b>	<b>No</b>
CWT	0.27	0.054	Yes	0.13	0.484	No
AWR	0.16	0.261	No	0.06	0.725	No
SJW	0.55	0.000	Yes	0.64	0.001	Yes
SWWC	0.05	0.780	No	0.33	0.125	No
MSEX	0.24	0.057	Yes	0.39	0.022	Yes
CTWS	0.02	0.887	No	0.11	0.585	No
YORW	0.09	0.555	No	0.28	0.276	No
Risk-free Rate: Ten-year Treasury Yield (Federal Reserve)				Risk-free Rate: Ten-year Treasury Yield (Federal Reserve)		
Market Return: Russell 3000 Monthly Closing Price (Bloomberg)				Market Return: Russell 3000 Monthly Closing Price (Bloomberg)		
Stock Return: Monthly Closing Price (Bloomberg)				Stock Return: Monthly Closing Price (Bloomberg)		
Ticker	Unadjusted Five Years Weekly			Adjusted Value Line Five Years Weekly		
	Beta	P-value	Significant?	Beta	P-value	Significant?
<b>WTR</b>	<b>0.44</b>	<b>0.000</b>	<b>Yes</b>	<b>0.74</b>	<b>0.000</b>	<b>Yes</b>
CWT	0.48	0.000	Yes	0.73	0.000	Yes
AWR	0.53	0.000	Yes	0.75	0.000	Yes
SJW	0.58	0.000	Yes	0.75	0.000	Yes
SWWC	0.47	0.000	Yes	0.73	0.000	Yes
MSEX	0.54	0.000	Yes	0.73	0.000	Yes
CTWS	0.35	0.000	Yes	0.60	0.000	Yes
YORW	0.19	0.131	No	0.50	0.089	Yes
Risk-free Rate: Ten-year Treasury Yield				Market Return: NYSE Composite Weekly Closing Price		
Market Return: Russell 3000 Weekly Closing Price (Bloomberg)				Stock Return: Weekly Closing Price (Bloomberg)		
Stock Return: Weekly Closing Price (Bloomberg)				<b>Adjusted Beta = 0.35 + 0.67 * Unadjusted Beta</b>		

Note: We consider Beta as significant when the probability value (P-Value) is less than 0.10.

Company Information		
Ticker	Company Name	Current Market Cap
<b>WTR</b>	<b>AQUA AMERICA INC</b>	<b>\$3,537,193,280</b>
CWT	CALIFORNIA WATER SERVICE GRP	\$799,881,300
AWR	AMERICAN STATES WATER CO	\$608,469,600
SJW	SJW CORP	\$962,516,280
SWWC	SOUTHWEST WATER CO	\$376,291,960
MSEX	MIDDLESEX WATER CO	\$215,268,320
CTWS	CONNECTICUT WATER SVC INC	\$206,537,500
YORW	YORK WATER CO	\$185,786,480

Source: Bloomberg, Federal Reserve, and Value Line

We select the beta that is statistically significant based on five years of weekly data: 0.44. The returns on the Russell 3000 measure the overall stock market's returns. In addition and for completeness, considering that WTR reportedly used a higher beta, as taken from Value Line, to calculate the COE when it presented its rate cases to regulators, we also use Value Line's method (Value Line Adjusted Beta =  $0.35 + 0.67 * \text{Unadjusted Beta}$ ) and find a statistically significant beta using five years of weekly data: 0.74. In this case, the returns on the New York Stock Exchange Composite Index measure the market's returns. By using the ten-year Treasury yield of 4.73% as the risk-free rate, as of March 15, 2006, and 6% as the expected market risk premium, we obtain a COE 7.37% when using the beta of 0.44 and 9.17% when using the beta of 0.74.

Knowing that WTR's weighted average cost of debt is 5.5%, we assign an equity risk premium of 3% expected by WTR stockholders according to the riskiness of WTR's stock and obtain a COE of 8.5%.

Assuming equal probabilities of market participants using any of the above methods to estimate WTR's COE, we obtain a blended COE of 8.35% by assigning a weight of 33% to each of the three approaches.

**Cost of Equity (COE) Approaches**

<b>Approach 1: Using Adjusted (Value Line) Beta</b>	
(Significant Five-year Weekly Adjusted Beta of WTR using value line method)	
Beta	0.74
Expected market risk premium (Rm-Rf)	6.00%
Risk-free Rate (Ten-year Treasury Yield)	4.73%
k (COE using CAPM)	<b>9.17%</b>
<b>Approach 2 : Using Unadjusted Beta</b>	
(Significant Five-year Weekly Beta of WTR on Russell 3000)	
Beta	0.44
Expected market risk premium (Rm-Rf)	6.00%
Risk-free Rate (Ten-year Treasury Yield)	4.73%
k (COE using CAPM)	<b>7.37%</b>
<b>Approach 3: Using Cost of Debt + Equity Risk Premium</b>	
(Using Cost of Debt + Equity Risk Premium to compute Cost of Equity)	
WTR Weighted Average Cost of Debt	5.50%
Equity Risk Premium above the Cost of Debt	3.00%
k (COE = cost of debt + equity risk premium)	<b>8.50%</b>
<b>Equally Weighted Cost of Equity (COE) of Three Approaches</b>	<b>8.35%</b>

Source: Student Estimates

**Appendix E: Two-Stage Discounted Cash Flow (DCF) Assumptions and Valuation**

**Discounted Cash Flow (DCF) Stage Assumption**

	1991-1998	1999-2005	Stage 1	Stage 2
Customers	3.0%	6.5%	6.0%	4.0%
ARPU	2.8%	3.2%	3.0%	3.0%
Operating Revenue	6.8%	9.9%	9.0%	7.0%

Source: Company 10-Ks

**Discounted Cash Flow (DCF) Analysis - Key Assumptions**

**Equally Weighted Cost of Equity (COE) of Three Approaches 8.35%**  
**Terminal FCFE Stable Growth 5.4%**

Fiscal Year	2006	2007	2008	2009	2010	Terminal
Operational Efficiency	40%	40%	40%	40%	40%	39%
Revenue Growth	9%	9%	9%	9%	9%	7%
Annual Capex (\$000)	250,000	250,000	250,000	250,000	250,000	200,000
Customer Growth	4%	4%	4%	4%	4%	2%
Cost Per Customer Acquired (\$)	1,000	1,000	1,000	1,000	1,000	1,000
Customers	921,967	958,845	997,199	1,037,087	1,078,571	1,100,142
New Customers	35,460	36,879	38,354	39,888	41,483	21,571
LT Debt to Total Cap	52%	52%	52%	52%	52%	52%
Dividend Payout Ratio	57%	57%	57%	57%	57%	57%
Annual LT Debt Due for Repayment	5%	5%	5%	5%	5%	5%
Equity Dilution	3%	3%	3%	3%	3%	0%

Note: Since the company is maintaining a fairly stable capital structure of a "50/50" debt-to-equity ratio, we discount the free cash flow to equity (FCFE) instead of free cash show to the firm (FCFF) in the DCF valuation.

Source: Student Estimates

**Discounted Cash Flow to Equity (DCF) Valuation for WTR**

Fiscal Year	Stage 1: 2006-2010					Stage 2: after 2010
	2006	2007	2008	2009	2010	2011
Operating Revenues	\$541,489	\$590,223	\$643,343	\$701,244	\$764,356	\$817,861
Total Costs & Expenses	323,351	352,323	383,934	418,280	456,027	479,894
Operating Income	218,138	237,900	259,409	282,964	308,330	337,967
Other Expenses	111,808	122,021	134,182	147,285	159,908	170,405
Net Income	106,330	115,879	125,227	135,679	148,421	167,562
add depreciation and amortization	72,830	79,701	86,653	93,935	102,479	109,934
add deferred income taxes	48,293	52,639	57,376	62,540	68,169	72,941
add change in working capital	(4,348)	(3,825)	(4,098)	(4,420)	(4,893)	(5,540)
Cash Flow from Operations	223,105	244,393	265,158	287,734	314,175	344,897
less capital expenditures	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(200,000)
less cash used for acquisitions	(35,460)	(36,879)	(38,354)	(39,888)	(41,483)	(21,571)
less net change in cash from other investmen	-	-	-	-	-	-
plus cash inflow from new debt	110,487	107,994	105,633	102,875	99,258	59,488
less cash repayments of debt	(43,922)	(49,446)	(54,846)	(60,128)	(65,271)	(70,234)
Free Cash Flow to Equity (FCFE)	4,210	16,062	27,592	40,593	56,679	112,579
Shares Outstanding (mil.)	133.08	137.07	141.19	145.42	149.79	149.79
FCFE/Share	0.03	0.12	0.20	0.28	0.38	-
Terminal Value beyond 2010	-	-	-	-	-	25.48
Discount Factors	0.92	0.85	0.79	0.73	0.67	0.67
<b>Present Value (PV) of FCFE/Share</b>	<b>0.03</b>	<b>0.10</b>	<b>0.15</b>	<b>0.20</b>	<b>0.25</b>	<b>17.06</b>

Sum of PV FCFE per share as of Year-end 2005 \$17.80

Cash Balance (CB) at Year-end 2005 (per share) \$0.09

**12 - Month (March 2007) Price Target \$19.78** = [CB + Sum of PV (FCFE / Share)] \* [(1+k)^1.25]

Note: \$ in thousands except per share data. Source: Student Estimates

**Appendix F: Two-Stage Discounted Cash Flow (DCF) Sensitivity Analysis**

The values represent the twelve-month target price per share of WTR using the discounted cash flow (DCF) model for different inputs for the Cost of Equity (COE) and terminal growth rate. The COE assumptions are in the first column on the left side and the terminal growth assumptions are in the first row at the top.

**Discounted Cash Flow (DCF) Sensitivity Analysis - COE (k) vs. Terminal Growth Rate**

<b>DCF Target Price as of March 2007</b>									
		Terminal Growth Rate / Long-term sustainable EPS growth rate starting from 2011							
		3.0%	4.0%	5.0%	5.4%	6.0%	7.0%	8.0%	9.0%
C O E (k)	5.00%	32.28	63.57	nm	nm	nm	nm	nm	nm
	6.00%	21.10	31.17	61.37	101.64	nm	nm	nm	nm
	7.00%	15.52	20.38	30.10	37.39	59.26	nm	nm	nm
	8.00%	12.19	15.00	19.70	22.59	29.08	57.24	nm	nm
	8.35%	11.32	13.71	17.53	19.78	24.59	42.13	159.89	nm
	9.00%	9.97	11.79	14.51	16.02	19.04	28.11	55.31	nm
	10.00%	8.40	9.65	11.40	12.32	14.03	18.41	27.18	53.46
	11.00%	7.23	8.13	9.34	9.95	11.04	13.58	17.81	26.28
	12.00%	6.32	7.00	7.88	8.30	9.05	10.69	13.14	17.24

NM: Not Meaningful. Source: Student Estimates

**Appendix G: Two-Stage Dividend Discount Model (DDM) Valuation**

<b>Equally Weighted Cost of Equity (COE) of 3 Approaches</b>	<b>8.35%</b>
First Stage High Growth Rate	9% First 5-year EPS high growth rate up to year 2010
Dividend Payout Ratio (5-year average Dividend payout ratio ending 2005)	57%
ROE (5-year average ROE ending 2005)	12.5%
<b>Terminal Stable Growth Rate</b>	<b>5.4%</b> Long-term sustainable EPS growth rate after 2010
Div0 (2005 Annual Dividend)	\$0.40

<b>High-Growth Period Dividends (2006-2010)</b>		PV of Dividends as of Year-end 2005		Calendar Year	Relative Year
Div1	\$0.44	PVD1	\$0.40	2006	1
Div2	\$0.48	PVD2	\$0.40	2007	2
Div3	\$0.52	PVD3	\$0.41	2008	3
Div4	\$0.56	PVD4	\$0.41	2009	4
Div5	\$0.62	PVD5	\$0.41	2010	5
<b>Stable Growth after 2010</b>					
Div 6	\$0.65			2011	6

Terminal Multiple	\$34.08
Terminal Price at the Year-end of 2010	\$22.11
PV of Terminal Price as of Year-end 2005	\$14.81

**Intrinsic Value as of Year-end 2005** **\$16.85** (Sum of PV of High Growth Period Dividends and PV of Terminal Price)

**Target Price as of March 2007** **\$18.62** = Intrinsic Value as of Year-end 2005 \* [(1+k)^1.25]

Source: Student Estimates

**Appendix H: Two-Stage Dividend Discount Model (DDM) Sensitivity Analysis**

In the second stage, the long-term sustainable growth rate and COE are the two key factors that can significantly alter the target price. Therefore, we perform a sensitivity analysis on the valuation with respect to these two variables (see Appendix H for the DDM sensitivity analysis). To match the market price of \$27.49 per share, as of March 15, 2006, WTR would have to either lower its COE to 7.38% while maintaining a long-term growth rate 5.4% or boost its long-term growth rate to 6.4% while keeping its COE at 8.35%. Knowing that WTR’s strategy has been to fund acquisitions through external debt and equity, it is not likely that WTR will be able to lower its COE to 7.38%. Since WTR’s ROE is regulated, it can only increase its long-term growth rate by reducing the dividend payout ratio from 57% to 49%. However, lowering the dividend payment further reduces the valuation associated with the DDM.

**Two-stage Dividend Discount Model (DDM) Sensitivity Analysis - COE(k) vs. Terminal Growth Rate**

**Assumption:**

First Stage High Growth Rate 9%

**From WTR Financial Report:**

2005 Annual Dividend per Share (Div0) \$0.40

Target Price as of March 2007										
		Terminal Growth Rate / Long-term sustainable growth rate starting 2011								
		3.0%	4.0%	5.0%	5.4%	6.0%	6.4%	7.0%	8.0%	9.0%
C O E (k)	5.00%	28.78	55.69	NM	NM	NM	NM	NM	NM	NM
	6.00%	19.32	28.06	54.28	91.09	NM	NM	NM	NM	NM
	7.00%	14.60	18.86	27.37	34.01	52.92	90.69	NM	NM	NM
	7.38%	13.36	16.77	23.05	27.49	38.40	54.63	133.92	NM	NM
	8.00%	11.76	14.25	18.40	21.05	26.71	33.43	51.61	NM	NM
	8.35%	11.03	13.15	16.55	18.62	22.83	27.49	38.46	144.20	NM
	9.00%	9.88	11.49	13.92	15.32	17.97	20.64	26.06	50.34	NM
	10.00%	8.53	9.65	11.23	12.08	13.60	15.01	17.55	25.44	49.12
	11.00%	7.52	8.34	9.44	10.01	10.98	11.84	13.29	17.14	24.84
	12.00%	6.73	7.36	8.16	8.56	9.23	9.81	10.74	12.99	16.75

NM: Not Meaningful (when k=g or k<g); if k<g, the result would be negative.

Source: Student Estimates

**Appendix I: Relative Valuation**

Among eleven U.S.-based publicly traded water utility companies, WTR's market capitalization is higher than that of the sum of the other ten companies. For our relative valuation, we choose the next seven largest water utility companies as the "Water Utility Peer Group" and introduce additional seven companies from the public utility sector as the "Other Public Utility Peer Group." As a result, we have a total of 14 companies in the "All Peer Group" to perform a relative valuation on WTR.

Order	Group	Ticker	Company Name	Market Cap (mil)	Forward P/E (P/2006E)	Trailing P/E (P/2005E)	P/2004E	P/B	P/S	EV/ EBITDA	Profit Margin (%)	EBITDA Margin (%)	ROE (%)	Long Term Debt/Total Capital (%)	Div Yield (%)	Dividend Payout Ratio (%)	5-year Geometric Growth - Dividend Per Share (%)	5-year Geometric Growth - Net Sale (%)	5-year Geometric Growth - Net Income (%)	5-year Geometric Growth - EPS (%)
0	<b>Water Utility</b>	<b>WTR</b>	<b>Aqua America</b>	<b>3,537</b>	<b>33.9</b>	<b>38.7</b>	<b>44.2</b>	<b>4.7</b>	<b>8.0</b>	<b>13.8</b>	<b>18.1</b>	<b>53.4</b>	<b>11.4</b>	<b>47.0</b>	<b>1.3%</b>	<b>57.3</b>	<b>6.5</b>	<b>11.4</b>	<b>17.0</b>	<b>13.5</b>
1	Water Utility	CWT	California Water Service Group	800	25.4	29.6	30.7	2.8	2.5	11.2	8.2	26.8	9.7	48.5	2.6%	77.1	0.8	6.1	3.4	0.1
2	Water Utility	AWR	American States Water Co.	608	25.0	22.9	32.8	2.4	2.7	10.9	8.1	28.4	8.0	43.5	2.5%	74.8	0.8	5.6	2.9	-0.1
3	Water Utility	SJW	SJW Corp.	963	<i>N/A</i>	22.2	48.6	2.6	5.8	8.6	11.9	32.5	11.3	43.7	1.9%	47.1	5.0	7.4	4.5	4.6
4	Water Utility	SWWC	Southwest Water Co.	376	38.8	67.2	83.0	2.8	2.0	18.2	2.4	11.1	4.4	47.2	1.0%	78.1	11.8	18.4	-4.9	-11.0
5	Water Utility	MSEX	Middlesex Water Co.	215	23.4	25.6	25.5	2.2	3.0	14.7	11.9	32.9	9.4	50.9	3.5%	90.0	2.2	5.8	1.4	-0.8
6	Water Utility	CTWS	Connecticut Water Service Inc.	207	<i>N/A</i>	19.1	22.0	2.3	4.3	14.7	19.4	40.1	10.9	41.2	3.3%	73.0	1.2	2.6	4.5	2.6
7	Water Utility	YORW	York Water Co.	186	29.2	32.0	35.1	3.8	8.3	15.8	23.6	52.1	12.2	35.6	2.2%	73.9	4.6	5.1	10.9	8.8
8	diversified Utility	EXC	Exelon Corp.	37,418	16.9	40.1	20.0	3.9	2.6	7.8	13.2	38.4	20.7	52.4	2.2%	44.4	N/A	N/A	N/A	N/A
9	Electric Utility	D	Dominion Resources Inc.	25,309	14.1	24.3	20.0	2.2	1.8	9.7	9.1	29.7	11.4	53.2	3.6%	68.1	0.2	20.4	28.3	19.6
10	diversified Utility	SO	Southern Co.	25,011	15.5	15.8	16.0	2.4	2.1	9.7	13.1	33.6	15.4	50.4	4.2%	68.1	1.1	5.0	1.2	2.2
11	diversified Utility	PEG	Public Service Enterprise Group Inc.	17,032	18.1	19.1	23.3	2.8	1.5	10.0	6.6	23.8	12.9	65.4	3.2%	72.4	0.4	11.2	123.8	N/A
12	diversified Utility	PCG	PG & E Corp.	13,813	16.4	17.1	3.1	2.0	1.2	6.1	40.6	33.6	70.1	43.9	0.0%	3.0	N/A	-11.9	N/A	N/A
13	diversified Utility	ED	Consolidated Edison Inc.	11,028	15.0	15.1	20.1	1.5	1.1	10.2	5.6	18.2	8.0	45.4	5.0%	96.4	1.1	5.4	-5.2	-6.2
14	diversified Utility	AEE	Ameren Corp.	10,304	15.7	16.1	19.0	1.7	2.0	9.5	10.5	32.3	10.4	42.4	5.0%	89.3	0.0	7.9	6.3	0.2
	Water Utility Peer Group Median			376	29.2	20.2	24.8	2.6	3.0	14.7	11.9	32.5	9.7	43.7	2.5%	74.8	2.2	5.8	3.4	0.1
	Water Utility Peer Group Mean			479	29.6	25.7	34.1	2.7	4.1	13.4	12.2	32.0	9.4	44.4	2.4%	73.4	3.8	7.3	3.3	0.6
	Water Utility Peer Group Standard Deviation			315	25.8	19.1	33.5	0.5	2.2	3.3	7.2	12.6	2.6	5.1	0.8%	13.0	3.9	5.1	4.7	6.1
	Water Utility Peer Group High			963	30.8	22.2	37.3	3.8	8.3	18.2	23.6	52.1	12.2	50.9	3.5%	90.0	11.8	18.4	10.9	8.8
	Water Utility Peer Group Low			186	38.8	67.2	83.0	2.2	2.0	8.6	2.4	11.1	4.4	35.6	1.0%	47.1	0.8	2.6	-4.9	-11.0
	Other Public Utility Peer Group Median			17,032	15.7	16.9	18.0	2.2	1.8	9.7	10.5	32.3	12.9	50.4	3.6%	68.1	0.4	6.7	6.3	1.2
	Other Public Utility Peer Group Mean			19,988	15.9	19.7	12.4	2.4	1.8	9.0	14.1	30.0	21.3	50.4	3.3%	63.1	0.5	6.4	30.9	4.0
	Public Utility Peer Group Standard Deviation			9,817	14.6	19.6	3.6	0.8	0.5	1.5	12.1	6.8	21.9	7.8	1.8%	31.3	0.5	10.6	53.4	11.1
	Other Public Utility Peer Group High			37,418	14.1	20.5	5.6	3.9	2.6	10.2	40.6	38.4	70.1	65.4	5.0%	96.4	1.1	20.4	123.8	19.6
	Other Public Utility Peer Group Low			10,304	15.5	24.1	16.0	1.5	1.1	6.1	5.6	18.2	8.0	42.4	0.0%	3.0	0.0	-11.9	-5.2	-6.2
	All Peer Group Median			5,633	18.0	22.6	23.8	2.4	2.3	10.1	11.2	32.4	11.1	46.3	2.9%	73.4	1.1	5.8	4.0	0.2
	All Peer Group Mean			10,234	17.7	21.6	16.3	2.5	2.9	11.2	13.2	31.0	15.3	47.4	2.9%	68.3	2.4	6.9	14.8	1.8
	All Peer Group Standard Deviation			12,124	12.2	17.0	5.3	0.7	2.0	3.4	9.6	9.8	16.2	7.1	1.4%	23.7	3.4	7.7	35.4	7.9
	All Peer Group High			37,418	14.1	20.5	5.6	3.9	8.3	18.2	40.6	52.1	70.1	65.4	5.0%	96.4	11.8	20.4	123.8	19.6
	All Peer Group Low			186	38.8	67.2	83.0	1.5	1.1	6.1	2.4	11.1	4.4	35.6	0.0%	3.0	0.0	-11.9	-5.2	-11.0

Note: Those highlighted with *Italic* are Student Estimates. Since two companies (SJW and CTWS) in the water utility peer group have not reported their 2005 Q4 earnings as of March 15, 2006, we use the financial data for 2004 to ensure consistency in the relative valuation. Price data are as of March 15, 2006.

Source: Bloomberg, Reuters, and Student Estimates

**Appendix J: Demographics**

State	Revenue Growth by State in Thousand Dollars					Percent of 2005 Revenues	Average Per Year Population Growth 2000 - 2004	Average Per Year Housing Unit Growth 2000 - 2004
	2001	2002	2003	2004	2005			
Florida	-	-	4,282	12,672	15,286	3.08%	<b>2.08%</b>	<b>2.21%</b>
Illinois	28,571	29,420	30,007	32,134	35,300	7.11%	<b>0.52%</b>	<b>0.99%</b>
Indiana	-	-	6,292	15,344	16,867	3.40%	<b>0.58%</b>	<b>1.43%</b>
Maine	8,675	8,969	9,279	9,403	9,418	1.90%	<b>0.68%</b>	<b>0.88%</b>
New Jersey	15,584	16,743	18,078	20,908	22,588	4.55%	<b>0.67%</b>	<b>0.72%</b>
North Carolina	2,053	2,968	3,769	17,846	29,840	6.01%	<b>1.45%</b>	<b>2.16%</b>
Ohio	34,662	38,848	36,584	37,679	39,839	8.02%	<b>0.18%</b>	<b>0.88%</b>
Pennsylvania	210,643	225,080	240,628	254,034	279,691	56.30%	<b>0.23%</b>	<b>0.60%</b>
Texas	-	-	12,289	30,334	37,953	7.64%	<b>1.76%</b>	<b>1.92%</b>
Virginia	-	-	3,096	7,882	8,337	1.68%	<b>1.27%</b>	<b>1.68%</b>
Other States*	-	-	2,929	3,803	1,660	0.33%	<b>0.69%</b>	<b>1.12%</b>

\*Other States include: Missouri, New York, and South Carolina

Source : U.S. Census Bureau, and Company 10-Ks

Note: The table shows WTR’s revenue growth by state from 2000 through 2005, whether by means of acquisition or from population and housing growth. The company has shown positive revenue growth in each state year over year with the exception of Ohio in 2003. The negative growth in Ohio can be attributed to the reduction of customers by the sale of particular water systems. Among the states in which WTR conducts business, Ohio has the lowest average population growth and housing unit growth. In addition, WTR’s revenues within the states it has entered by way of its growth-by-acquisition strategy have been growing rapidly during the past four years. The two states with the highest revenue growth between 2003 and 2005 were North Carolina and Florida. The high revenue growth was a result of two acquisitions: Heater Utilities and Florida Water Services.

It is important to note the rate at which housing units have grown within WTR’s jurisdiction. It is evident that WTR strategically entered each of the five states over the past four years. In each of these states, the housing unit growth per year is above the national average of 1.39%. Again, Florida and North Carolina have the highest growth rates, with each above 2.0%. The entrance into high-growth housing markets provides WTR with a supplemental source of organic growth by way of new customers in addition to rate increases.

Although WTR has been able to increase its revenues in each of the states in which it operates, Pennsylvania is the only state that contributes more than 10% of revenues. However, Pennsylvania’s percentage of overall revenues has decreased significantly from 2002 through 2005, dropping from approximately 70% in 2002 to 56% in 2005, a sign of the growing presence of WTR in other states.

**Appendix K: SWOT Analysis of Aqua America**

SWOT Analysis of Aqua America	
Strengths	Weaknesses
Over 100 years of experience in water business Track record of profitability and growth Strong regulatory relationships	High capital intensity Heavy dependence on external financing to grow Declining operating efficiency
Opportunities	Threats
Predictable rate increase and stable regulated ROE Municipalities increasingly looking to divest water systems because of more stringent water quality regulations Growing population, especially in the South Low price elasticity and no threat of a substitute for water	Limited long-term sustainable EPS growth due to regulated ROE A possible American Water IPO Competition for low-cost acquisition targets Increasing consumer sensitivity to rate increases Lower water consumption due to customer conservation efforts Home land security risk Local resistance to non-local ownership Possible eminent domain actions Limited population growth within the largest subsidiary

Source: Student Estimates

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**Appendix L: Water Utility Regulatory Issues based on Research and Interview with Pennsylvania PUC**

Below is an outline of the steps involved in the Rate Increase Approval Process in Pennsylvania, the largest operating division of Aqua America (WTR). This process is similar to the one used in the majority of states in which the company operates:

**Step 1:** The company puts forth a request for a rate increase with the expectation that the rate will be reduced by the Pennsylvania Public Utilities Commission (PUC).

**Step 2:** Exceptions to the request are made by PUC's Office of Trial Staff and the Office of Consumer Advocate (OTS and OCA, respectively). Individual towns or citizens may also rebut certain claims made by WTR. This step is critical, as the OTS and OCA examine WTR's rate increase in search of items to rebut. For example, WTR's proposed rate increase is based on proposed revenues and expenses that center on the following variables: rate base, revenues, expenses, depreciation accrual and taxes, rate of return, rate structure, and quality of service. From the costs associated with these variables and the proposed revenue intake, WTR arrives at the total proposed rate increase. Within each of the above topics, however, are many subtopics, from which arise the challenges from the OTS and OCA, whose job is to find more favorable rates for consumers.

**Step 3:** Any dispute is presented before the Office of Administrative Law Judge (ALJ) for Alternative Dispute Resolution, resulting in hearings culminating in a "Recommended Decision" put forth by the ALJ. The ALJ can side wholly with one party or find a middle ground.

**Step 4:** Based upon ALJ's decisions regarding the disputes, it arrives at its own "Recommended Decision."

**Step 5:** Any party may "except" any of the ALJ's decisions. The PUC is charged with resolving these exceptions. For undisputed points, in which the ALJ makes a decision that no party disputes, the PUC will adopt them without further study.

**Step 6:** For the disputed points, the PUC makes a final decision, choosing either to accept the recommendation of the ALJ, accept the recommendation of any individual party, or choose a middle ground between the two.

**Step 7:** Having the contested items resolved, the PUC arrives at a final decision regarding the proposed rate increase. It usually allows one that provides a ROE of approximately 11%.

**Below is the paraphrased transcript of an interview between a team member and an analyst within the Pennsylvania Public Utility Commission (PUC)**

**Q: From the rate case you sent to me, it seems that, as of 2004, Aqua Pennsylvania (Aqua Penn) has had a pretty good relationship with PUC. Is this still the case?**

A: Yes, we like them because they take over troubled municipal systems. Aqua Penn and PA American (i.e., Pennsylvania American Water) take a lot of problems off their hands, and the commissioners reward them through allowing them higher ROEs.

**Q: I saw that the case shows some give-and-take regarding the cost of equity. I gather there is no set number for a regulated ROE in Pennsylvania?**

A: Yes, there is no set regulated ROE number; rather the ROE we allow is based on barometer groups. It's up for debate. This is where the politicians can make their discretionary calls. If they want to reward a company, they can jack rates up. Technicians also give a range of ROE that the commissioners, who are five political appointees, use. They can raise or lower it based on how good the company is. Aqua Penn is usually rewarded with higher ROEs since they take problem municipalities off our hands.

**Q: Considering that water bills are a very small percentage of total household costs, are customers sensitive to rate increases?**

A: Yes. People see it as a free commodity that they shouldn't have to pay for. People are highly responsive to rate increases. If you look at the cases I sent you, many of the complainants are individual citizens. The EPA is putting stringent requirements on companies, such as new testing, which increase the expense and therein raise the costs for the customer. People don't understand this. PUC looks at \$500 a year for 60,000 gallons as the benchmark when we consider rate increases. That is the number we shoot for.

(In a subsequent discussion with this analyst, we were told that he took part in a study some years ago about the price elasticity of demand of water. The results were that the demand for water was found to be highly inelastic. This means that customers do not decrease their water usage significantly based on increases in water rates. He also told us that the benchmark of \$500 per 60,000 gallons is somewhat rough, acknowledging that the PUC realizes that rates will soon rise past this level.)

**Q: In reading WTR’s annual report, we find discussion of surcharges as a way to mediate “regulatory lag,” or the time between base rate increases. Is there an approval process for these surcharges also?**

A: There is an automatic approval every quarter. The company accumulates whatever distribution system improvements it has made, puts them into a formula, and comes out with a rate surcharge. Every year this number is reconciled by the PUC and brought back to zero following a rate increase. This was invented so that we could postpone rate increases. The cap is 5% and it is set back to zero when new rates come online.

**Q: WTR is a holding company that consists of subsidiaries that operate in different states. Does PUC allow the company to secure the debt of Aqua Penn with the assets of the holding company or subsidiaries in other states?**

A: No. We look at Aqua Penn as a stand-alone company, even as far as losses. Income taxes are figured on a stand-alone basis, too. That way, losses or gains WTR receives in other states don’t affect how we view Aqua Penn.

**Q: When PUC considers approving rate increases, are companies like WTR rewarded with higher rates to compensate them for all the capital improvements they made, or only those that were absolutely necessary?**

A: Rate increases are granted only for those capital improvements that are deemed necessary. The improvements must be “used and useful.” Long-term projects also fall under this heading because a new plant, for example, can’t be charged to the customer until it comes “on-line,” because until that time, it is not being “used.”

**Historical Water Rate Increases in Pennsylvania (1995-2004):**

**Private Water-Class "A": Ten Year History of Rate Increases - 50,000 customers or more**

Company	Filing Date	Date Final Order Entered	Requested Increase (\$)	Requested Increase %	Increase Allowed \$	Increase Allowed %	# of Customers in 2003	Rate increase award as a % of rate increase requested	10-year cumulative rate increase	10-year annualized rate increase
Aqua Penn	1/14/2003	8/5/2004	\$ 25,300,000	10%	\$ 13,794,205	6%	<b>383,851</b>	60.00%		
Aqua Penn	11/9/2001	8/1/2002	\$ 28,000,000	13%	\$ 21,225,941	7%		53.85%		
Aqua Penn	0/29/1999	4/27/1995	\$ 25,600,249	16%	\$ 17,000,000	9%		56.25%		
Aqua Penn	4/25/1997	10/23/1997	\$ 16,941,572	13%	\$ 9,300,000	7%		53.85%		
Aqua Penn	4/28/1995	10/27/1995	\$ 14,000,000	12%	\$ 6,150,438	5%		41.67%		
							<i>Average</i>	<b>53.12%</b>	38.12%	3.28%
Penn-American	4/30/2003	1/29/2004	\$ 64,946,533	18%	\$ 34,314,150	10%	<b>609,110</b>	55.56%		
Penn-American	4/27/2001	1/25/2002	\$ 38,706,315	12%	\$ 23,967,774	8%		66.67%		
Penn-American	4/30/1999	12/16/1999	\$ 40,001,890	13%	\$ 24,600,000	9%		69.23%		
Penn-American	4/4/1997	10/2/1997	\$ 40,400,000	16%	\$ 27,000,000	11%		68.75%		
Penn-American	0/28/1994	7/20/1995	\$ 16,981,106	10%	\$ 7,830,639	4%		40.00%		
Penn-American	0/28/1993	9/9/1994	\$ 11,363,030	7%	\$ 4,585,433	3%		42.86%		
							<i>Average</i>	<b>57.18%</b>	48.03%	4.00%
United Water	5/2/1997	3/12/1998	\$ 2,990,578	15%	\$ 2,050,000	11%	<b>51,039</b>	73.33%		
United Water	7/24/1994	2/9/1995	\$ 2,052,456	12%	\$ 900,000	5%		41.67%		
							<i>Average</i>	<b>57.50%</b>	16.55%	1.54%
York	4/28/2004	10/4/2004	\$ 4,869,970	22%	\$ 3,500,000	16%	<b>51,021</b>	72.73%		
York	1/24/2003	6/26/2003	\$ 2,979,856	14%	\$ 1,897,201	10%		71.43%		
York	3/20/2001	8/30/2001	\$ 2,307,877	12%	\$ 1,068,100	5%		41.67%		
York	4/22/1999	9/30/1999	\$ 1,535,946	10%	\$ 927,472	5%		50.00%		
York	5/9/1996	9/5/1996	\$ 1,534,393	10%	\$ 960,000	5%		50.00%		
York	4/29/1994	9/22/1994	\$ 999,725	5%	\$ 550,000	4%		80.00%		
							<i>Average</i>	<b>60.97%</b>	46.44%	3.89%

Note:

Class A constitutes companies with annual revenues of \$1,000,000+

From the Class A companies, only those with 50,000+ customers are illustrated

Source: Pennsylvania Public Utilities Commission

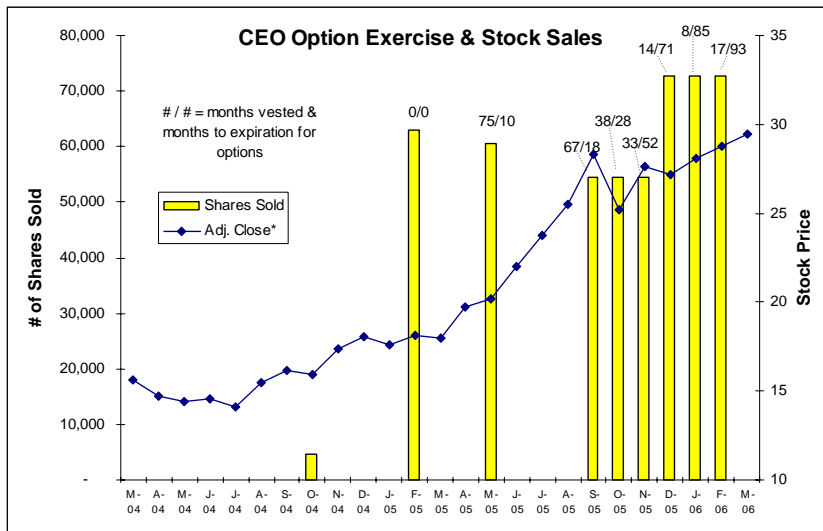
Appendix M: Insider Transactions

Insider Holdings										
Insider	Title	Last Transaction (2005)	Common Shares	Common Stock in IRA, 401K, Restricted	Indirect Shares Owned	Total Shares	Total Shares as of January 1, 2005 (Adjusted for 4:3 Stock Split)	Adjusted Increase (Decrease)	Adjusted % Increase (Decrease)*	Weight
DeBenedictis	Chair/CEO	Feb.15, 2006	546,545	16,360	2,731	565,636	548,431	17,205	3.14%	65.84%
Stahl	Exec. VP	Feb. 23, 2006	72,265	24,606	-	96,871	116,147	(19,276)	-16.60%	11.28%
Riegler	Sen. VP	Feb. 14, 2006	23,302	12,600	13,840	49,742	123,107	(73,365)	-59.59%	5.79%
Smeltzer	CFO	Sept. 16	25,607	13,769	-	39,376	61,868	(22,492)	-36.35%	4.58%
Rubin	CAO	Sept. 14	18,047	5,222	-	23,269	29,611	(6,342)	-21.42%	2.71%
McCaughan	Director	Jun. 1	20,776	902	-	21,678	27,701	(6,023)	-21.74%	2.52%
Liptak	Officer	Jan. 3, 2006	11,386	4,962	-	16,348	19,624	(3,276)	-16.69%	1.90%
Menario	Director	Jun. 27	13,221	1,202	-	14,423	18,183	(3,760)	-20.68%	1.68%
Carroll	Director	Jun. 1	6,658	902	2,225	9,785	11,847	(2,062)	-21.07%	1.14%
Smoot	Director	Jun. 1	8,670	902	-	9,572	11,560	(1,988)	-20.77%	1.11%
Hugus	Officer	Feb. 28	1,833	5,667	-	7,500	-	-	-	0.87%
Hankowsky	Director	Jun. 1	1,093	902	-	1,995	1,457	538	26.95%	0.23%
Glanton	Director	Jun. 1	1,093	902	-	1,995	1,457	538	26.95%	0.23%
Papadakis**	Director	Jun. 1	-	902	-	902	-	-	-	0.10%
			750,496	89,800	18,796	859,092	970,992	-120,302	-12.39%	-14.82%

\*% Increase (Decrease) is a weighted average of the individual percentage increases or decreases of each insider

\*\*Did not have a stake in the company until June 1, 2005

Source: SEC EDGAR, Yahoo Finance, and S&P Executive Compensation Database



Source: SEC EDGAR, Yahoo Finance, and S&P Executive Compensation Database

Breakdown of Individual Insider Net Transactions for January 2005 to February 2006

Insider	Title	Net Shares Bought (Sold)	Gross Gain or Expense	Net Gain or Expense
DeBenedictis	Chair/CEO	-431,824	\$14,937,459.86	\$9,679,210.08
Smeltzer	CFO	-8,627	436,552.58	
Rubin	CAO	-1,939	82,929.00	
Riegler	Senior VP	-50,101	1,477,021.24	
Stahl	Executive VP	-23,172	1,638,343.01	
Liptak	Officer	-9,176	280,159.00	
Menario	Director	806	(22,037.00)	
Glanton**	Director	8138	(24,976.00)	
Papadakis*	Director	902	(24,976.00)	
McCaughan*	Director	902	(24,976.00)	
Hankowsky*	Director	902	(24,976.00)	
Carroll*	Director	902	(24,976.00)	
Smoot*	Director	902	(24,976.00)	
		<b>-511,385</b>	<b>18,680,571.69</b>	

\*Included in the "Other Directors" transaction in June of 2005

\*\*Acquisition at \$0 per share of 7,236 shares

Source: SEC EDGAR, Yahoo Finance, and S&P Executive Compensation Database

**Cumulative Monthly Insider Transactions for WTR (January 2005 to February 2006)**

Month/Year	Net Shares Bought (Sold) For the Month	Gross Insider Gains or Expenses for the Month	Net Insider Gains or Expenses for the Month	Name	Title
Feb-06	-72,685	\$ 2,001,018.05	\$ 926,805.00	DeBenedictis	Chair/CEO
Jan-06	-72,861	\$ 2,029,314.69	\$ 1,122,256.00	DeBenedictis	Chair/CEO
Dec-05	-75,195	\$ 2,026,615.20	\$ 1,162,343.00	DeBenedictis	Chair/CEO
Nov-05	-54,511	\$ 1,829,645.36	\$ 1,196,279.00	DeBenedictis	Chair/CEO
Oct-05	-54,511	\$ 1,753,749.70	\$ 1,190,704.00	DeBenedictis	Chair/CEO
Sep-05	-54,561	\$ 1,978,166.03	\$ 1,555,706.00	DeBenedictis	Chair/CEO
Aug-05	2,117	\$ 132,902.38	\$ 32,885.83	DeBenedictis <sup>***</sup>	Chair/CEO
May-05	-60,668	\$ 1,659,124.20	\$ 1,311,497.00	DeBenedictis	Chair/CEO
Apr-05	-12	\$ 314.00	X	DeBenedictis	Chair/CEO
Feb-05	12897	\$ 1,526,610.25	\$ 1,180,734.25	DeBenedictis <sup>**</sup>	Chair/CEO
Jan-05	-1834	\$ -	\$ -	DeBenedictis <sup>****</sup>	Chair/CEO
<b>TOTAL</b>	<b>-431,824</b>	<b>\$ 14,937,459.86</b>	<b>\$ 9,679,210.08</b>	<b>DeBenedictis</b>	<b>Chair/CEO</b>
Sep-05	-1,702	\$ 63,895.08	X	Smeltzer	CFO
May-05	-10000	\$ 447,959.00	X	Smeltzer <sup>****</sup>	CFO
Mar-05	3,920	\$ (95,835.00)	X	Smeltzer	CFO
Feb-05	-845	\$ 20,533.50	X	Smeltzer	CFO
<b>TOTAL</b>	<b>-8,627</b>	<b>\$ 436,552.58</b>	<b>X</b>	<b>Smeltzer</b>	<b>CFO</b>
Feb-06	20,883	\$ (89,744.69)	\$ (89,744.69)	Stahl <sup>^*</sup>	Exec. VP
Nov-05	-3,983	\$ 133,549.99	\$ 89,896.31	Stahl	Exec. VP
Oct-05	-3,982	\$ 152,430.96	\$ 108,290.96	Stahl	Exec. VP
Sep-05	-14,215	\$ 525,288.02	X	Stahl	Exec. VP
May-05	-22,500	\$ 609,593.73	X	Stahl	Exec. VP
Mar-05	625	\$ 307,225.00	X	Stahl	Exec. VP
<b>TOTAL</b>	<b>-23,172</b>	<b>\$ 1,638,343.01</b>		<b>Stahl</b>	<b>Exec. VP</b>
Feb-06	-144	\$ 4,026.24	X	Riegler	Sen. VP
Jul-05	-35	\$ 1,094.00	X	Riegler	Sen. VP
Jun-05	-5,000	\$ 146,300.00	X	Riegler	Sen. VP
May-05	-44802	\$ 1,322,605.00	X	Riegler	Sen. VP
Apr-05	-40	\$ 1,051.00	X	Riegler	Sen. VP
Mar-05	-80	\$ 1,945.00	X	Riegler	Sen. VP
<b>TOTAL</b>	<b>-50101</b>	<b>\$ 1,477,021.24</b>		<b>Riegler</b>	<b>Sen. VP</b>
Jan-06	-2,876	\$ 78,681.00	X	Liptak	Officer
Dec-06	-100	\$ 3,715.00	X	Liptak	Officer
Nov-05	-200	\$ 7,213.00	X	Liptak	Officer
Oct-05	-2,000	\$ 76,500.00	\$ 45,940.00	Liptak	Officer
Jul-05	-2,000	\$ 60,050.00	X	Liptak	Officer
May-05	-2,000	\$ 54,000.00	\$ 29,490.00	Liptak	Officer
<b>TOTAL</b>	<b>-9,176</b>	<b>\$ 280,159.00</b>		<b>Liptak</b>	<b>Officer</b>
Sep-05	-30	\$ 1,107.00	X	Rubin	CAO
May-05	-3,000	\$ 82,000.00	\$ 32,880.00	Rubin	CAO
Apr-05	1,091	\$ (178.00)	X	Rubin	CAO
<b>TOTAL</b>	<b>-1,939</b>	<b>\$ 82,929.00</b>		<b>Rubin</b>	<b>CAO</b>
Jun-05	806	\$ (22,037.00)	X	Menario	Director
Jan-05	8138	\$ (24,976.00)	X	Glanton <sup>***</sup>	Director
Jun-05	4,510	\$ (124,880.00)	X	Other Directors*	
<b>FINAL TOTAL</b>	<b>-511,385</b>	<b>\$ 18,680,571.69</b>			

X is in place because if a disposition was not preceded by a stock option execution, then we have no way of knowing at what price the disposed of stock was purchased at

^ Includes executed stock options

<sup>^\*</sup>For Feb-06 executed an expiring option at \$4.2975 per share

<sup>\*\*\*</sup>For Aug-05 gained \$ despite a net increase in shares because of the execution of a 6,007 share option at \$16.65

\*"Other Directors" include Directors Papadakis, McCaughan, Hankowsky, Glanton, Carroll, Smoot

<sup>\*\*</sup>Insider's total shares increased without incurring a net expense because a 75,850 share option was exercised at \$4.56 per share, and was counterweighted with a 62,953 share disposition at about \$24.25

<sup>\*\*\*</sup>Acquisition at \$0 per share of 7,236 shares

<sup>\*\*\*\*</sup>Disposition at \$0 per share

Source: SEC EDGAR, Yahoo Finance, and S&P Executive Compensation Database

**Appendix N: Key Statistics of Aqua America and its Competitors**

**WTR vs. Water Peer Group (7 Next Largest Publicly Traded Water Companies) as of Year 2004**

Ticker	Company Name	No. of Residents Served by the Company (mil)	# of States of Operations	Sales Revenue (mil)	Net Income (mil)	Market Cap (mil)	EBITDA Margin (%)	Net Profit Margin (%)	Long Term Debt/Total Capital (%)	Return on Equity	Return on Assets	Dividend Payout (%)
<b>WTR</b>	<b>Aqua America Inc.</b>	<b>2.50</b>	<b>13</b>	<b>442.0</b>	<b>80.1</b>	<b>3591.3</b>	<b>53.4</b>	<b>18.1</b>	<b>47.0</b>	<b>11.4%</b>	<b>5.0%</b>	<b>57.3</b>
CWT	California Water Service Group	2.00	5	315.6	26.0	778.4	26.8	8.2	48.5	9.7%	2.8%	77.1
AWR	American States Water Co.	0.25	1	228.0	18.5	557.4	28.4	8.1	43.5	8.0%	2.4%	74.8
SJW	SJW Corp.	N/A	1	166.9	19.8	474.6	32.5	11.9	43.7	11.3%	3.7%	47.1
SWWC	Southwest Water Co.	2.00	4	188.0	4.5	335.4	11.1	2.4	47.2	4.4%	1.3%	78.1
MSEX	Middlesex Water Co.	0.06	2	71.0	8.4	212.8	32.9	11.9	50.9	9.4%	2.9%	90.0
CTWS	Connecticut Water Service Inc.	0.08	1	48.5	9.4	204.5	40.1	19.4	41.2	10.9%	3.3%	141.6
	Water Peer Group Mean	0.65	2.1	148.6	13.1	392.7	32.0	12.2	44.4	9.4%	2.9%	83.2

*Note : Since two companies (SJW and CTWS) in the water utility peer group have not reported their 2005 Q4 earnings as of March 15, 2006, we use the financial data for 2004 to ensure consistency in comparison.  
Source : Bloomberg (Financials as of Year 2004), Company Websites, and Yahoo-Finance*

**Appendix O: Financial Ratio Analysis**

	2001	2002	2003	2004	2005	2006E	2007E	2008E
Operational Efficiency Ratio	36.4%	36.6%	38.3%	40.9%*	40.9%	40.0%	40.0%	40.0%
Operating Profit Margin	43.7%	43.6%	41.8%	40.1%	39.6%	40.3%	40.3%	40.3%
Net Profit Margin	19.6%	20.9%	19.3%	18.1%	18.3%	19.8%	19.9%	19.7%
Customer Growth	0.5%	23.8%	11.5%	6.1%	6.0%	6.0%	6.0%	6.0%
Revenue Growth	12.1%	4.8%	14.0%	20.4%	12.4%	9.0%	9.0%	9.0%
Net Income Growth	15.7%	11.1%	6.6%	10.1%	15.0%	18.4%	9.0%	8.1%
EPS Growth Rate	11.5%	12.6%	-3.4%	9.7%	12.1%	14.4%	5.9%	5.0%
Total Asset Turnover	20.7%	19.7%	19.4%	20.0%	20.0%	19.8%	19.9%	20.0%
Return on Equity	13.3%	13.9%	12.3%	11.4%	11.7%	12.3%	12.0%	11.8%
Return on Assets	4.0%	4.1%	3.7%	3.5%	3.6%	3.9%	3.9%	3.9%
LT Debt to Equity	1.09	1.18	1.06	1.05	1.08	1.08	1.08	1.08
Interest Coverage Ratio	3.49	3.70	3.61	3.71	3.84	3.99	3.99	3.97
CAPEX	\$124.09	\$136.16	\$163.32	\$195.74	\$237.46	\$250.00	\$250.00	\$250.00
Acquisition Costs	9.52	8.91	192.33	54.30	11.63	35.46	36.88	38.35
Dividends Paid	34.23	36.79	39.92	45.81	51.14	60.29	65.70	71.00
Dividend Payout Ratio	57.1%	55.3%	56.3%	58.7%	56.9%	56.7%	56.7%	56.7%
CAPEX+Acquisition Costs+Dividends	167.84	181.87	395.57	295.84	300.23	345.75	352.58	359.36
Cash Flow from Operations (CFO)	102.17	121.56	143.37	173.60	199.67	223.11	244.39	265.16
Internally Generated Capital (=CFO-Dividends)	\$67.93	\$84.77	\$103.46	\$127.80	\$148.54	\$162.82	\$178.69	\$194.15
External Financing Needed for Investing & Dividends	65.67	60.31	252.20	122.24	100.56	122.64	108.19	94.20
Net Proceeds from Debt	64.02	119.35	154.54	130.26	147.01	110.49	107.99	105.63
Net Proceeds from Equity	16.45	-9.37	134.95	57.15	24.78	56.08	49.64	43.41
CFO/(CAPEX+Acquisition Costs+Dividends)	60.9%	66.8%	36.2%	58.7%	66.5%	64.5%	69.3%	73.8%
(CFO-Dividends)/(CAPEX+Acquisition Costs)	50.8%	58.4%	29.1%	51.1%	59.6%	57.0%	62.3%	67.3%

*Note: \$ in millions. The "External Financing Needed" and the "Net Proceeds from Debt" + "Net Proceeds from Equity" do not tie exactly due to the timing of cash flows and the company's use of short-term debt to supplement their cash flow needs. Eventually, the company refinances short-term debt with equity and/or long-term debt.  
Source: Company 10-Ks, and Students Estimates*

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