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INDUSTRY REPORT
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Water Utilities 101: A Primer for Investors

INVESTMENT CONCLUSION: The U.S. investor-owned water utility industry is a small sector within the broader water industry, with only 10 publicly-traded stocks currently, with a combined market capitalization of less than $7 billion. In the midst of change and growth, however, the industry is an interesting one, and we expect to see more investor attention drawn to the sector with the planned IPO of American Water Works, filed with the SEC in late August. The regulated water industry – small in itself, with only 15% market share in the U.S. – remains fragmented and ripe for consolidation, as economies of scale and access to capital will be an advantage for utilities facing ever more stringent operating standards and the huge need for investment in water infrastructure throughout the U.S. Meanwhile, the municipal utility segment, with its 85% market share, is gradually providing opportunities for private sector participation in both water and wastewater as they face similar challenges. In this report, we provide a basic overview of the industry, including its regulatory and financial structure, key growth drivers, and valuation parameters.

VALUATION SUMMARY: Water utility stocks do not look cheap right now, with strong performance in the group over recent weeks after a lull earlier in the year; accordingly, we have few BUY ratings in the sector at the moment. However, we are always looking for more attractive entry points in these names, as we like the long-term growth prospects and stable outlook for the industry. Current EV/EBITDA multiples for the sector are in the 9x-13x range, P/Es are in the mid-20s, and price/book is now 2x-3x, while dividend yields average 2.7%. We believe the sector will continue to maintain a premium valuation given the compelling growth fundamentals in the water industry.

Source: Mediaworks

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WATER UTILITY CHEATSHEET: 10 THEMES EVERY INVESTOR NEEDS TO KNOW

1. **Regulation, Regulation, Regulation:** Perhaps more so than other regulated utilities, water utilities are subject to a high degree of both environmental and economic regulation, given the importance of the availability and quality of their product for human survival, as well as their monopoly status within their given regions. While water quality standards are set at the federal level by the U.S. Environmental Protection Agency (EPA), the most important regulatory decisions impacting business success are made by state public utility commissions, which establish the rates that utilities may charge their customers under the return on equity model. We believe a fair and consistent regulatory environment is one of the most important factors in valuing the earnings potential of a regulated water utility.

2. **Investor-Owned Utilities Serve Only 15% of the Population**: According to the EPA and industry data, approximately 85% of the U.S. population is served by municipally-owned water systems. The remaining 15% of the population is served by private companies and investor-owned utilities. On the sewer side, municipal dominance is even more notable, with some 95% of the nation's wastewater systems owned by municipalities. There are currently only 10 publicly-traded water utilities in the U.S. (excluding Birmingham Utilities, which is currently being sold), though two of the largest investor-owned utilities (American Water and United Water) are owned by companies publicly-traded in Europe. In comparison to electric and gas utilities, the water utility sector is small, currently representing only about $6.5 billion in combined market capitalization.

3. **Industry Remains Highly Fragmented**: According to the EPA's survey data, there are more than 50,000 community water systems in the U.S. today, with over 80% serving less than 3,300 people (EPA's definition of "small"). Less than one percent of these systems are "large," serving more than 100,000 people, and the largest U.S. cities are almost always municipally-run. As operating requirements become more complex and capital spending needs rise, the inefficiencies created by this fragmentation have become more obvious in recent years with the regulatory agencies as well as industry leaders promoting the benefits of economies of scale and ongoing consolidation.

4. **Water Service Still Cheap**: Water and wastewater bills as a percentage of household income are significantly lower than other utility bills, each accounting for approximately 6% of a typical household utility budget, on average (though prices vary significantly from place to place). Generally, utilities provide water service for about $30-$35 per month, or around $1/day – under a penny a gallon, based on average home use of 4,000 to 5,000 gallons per month. While electricity bills have climbed sharply in many areas over the past two years, water and sewer bills have thus far risen more slowly in most locations, though prices are starting to accelerate as infrastructure investment needs become more acute. Ironically, though water is a far more critical household service, the typical monthly water and sewer bill remains well below the cost of cable, cell phone, and internet service.

5. **Infrastructure Investment Needs Rising:** An industry saying goes that "Water is free, but God forgot to lay the pipes." Five years ago, the EPA issued its seminal "Gap Analysis" report, indicating about $500 billion would need to be spent on water and wastewater infrastructure over the next 20 years. The agency's "Drinking Water Needs Survey," last updated in 2005, found that an estimated $277 billion would be needed for water utility systems alone. These costs are being driven by environmental regulations mandating more stringent treatment standards, as well as the rising costs to maintain and upgrade utility networks that deliver safe, reliable water to the tap. As infrastructure continues to age and many municipalities defer maintenance, well-capitalized utilities benefit from the public attention infrastructure needs have received.

6. **Water Quality and Supply Issues Also on the Rise:** As environmental rules have tightened and water supplies are degraded by pollution, treatment costs faced by utilities continue to trend upwards. Availability and pricing of water supplies are also becoming bigger issues for the industry, especially in the arid West, where utilities purchase a large share of water from wholesalers. While these costs are eventually passed through to customers, we believe utilities with efficient water management practices will have an advantage. Even in the Eastern U.S., periodic drought can cause water use restrictions, limiting sales volumes. Per capita water use in the U.S. has declined over the past decade, and while still the highest in the world, is likely to decline further in coming years, creating revenue challenges as infrastructure costs continue to rise.

7. **Capital Intensity is Critical Factor Underlying Business Model:** Investor-owned water utilities are the most asset intensive of all utilities, with $3 to $6 in net utility plant on the balance sheet for every dollar of annual revenue they generate and replacement costs continuing to rise. Water utilities, the only regulated utilities to avoid deregulation, are the last true monopoly. Earnings growth is fueled by high levels of capital investment as utilities expand their asset base by investing in system infrastructure and are then allowed to earn an equity return on that rate base (typically approximately 10%) via increases in customer water rates. While capital spending levels almost always exceed operating cash flow for water utilities, this has historically worked well under the regulated model, as utilities are allowed to recover approved capital investments as well as ongoing operating costs, including debt service. While debate is lively among the industry, investors, and regulators about levels of risk and appropriate ROEs, the simple fact remains that capital spending, well above depreciation levels across the sector, should support future earnings growth if companies prudently manage expenses and are able to manage rate cases effectively.

8. **Once-Sleepy Industry in the Midst of Change:** The challenges noted above are also driving structural change in the sector. Over the last decade, the industry has already seen significant ownership changes, with acquisitions by electric companies and European utility conglomerates. More recently, financial buyers having narrowed the field from approximately 25 publicly-traded companies to 10. Some of those buyers have since exited the sector, and more ownership changes appear likely in coming years, along with ongoing consolidation among smaller systems. Although private ownership and operation of water systems remains politically controversial in some quarters, we also expect to see a gradual rise in private sector participation in the municipal water and wastewater sector – "the other 85%" of the industry, as many smaller communities become overwhelmed with the operational and financial challenges facing the industry. In conjunction with this trend, we are seeing several water utilities become more active in unregulated contract services, with some shift in business mix to a less capital-intensive model.

9. **Valuation is Controversial**: Some investors have trouble understanding why a business with high capital intensity, negative free cash flow, 7-10% average annual EPS growth, and ROEs capped by regulators has given rise to stocks sporting mid-20's P/Es. To a certain extent, water utility valuations have been a self-fulfilling prophecy, with mid-teens annual total returns during 1995-2005 drawing more investor demand to this small group of stocks. On a P/E basis, valuations have come down since 2006 and are now more in line with gas utilities, though still higher than electrics. Meanwhile, as depreciation levels rise, investors are more focused on EV/EBITDA multiples, which range from about 9x-13x. Price to book value multiples appear high, at 2-3x across the sector, but we would argue that book value is artificially low, given the very high replacement cost of assets.

10. **Risks - Unique but Manageable**: Water utilities face a unique mix of risks, including their dependence on the regulatory environment, swings in sales and earnings caused by extreme weather conditions, water supply availability and cost, condemnation threats from municipalities, and competition for acquisitions as well as integration risk. While these risks can typically be mitigated over time through a variety of operating strategies and regulatory mechanisms, short-term results may be negatively impacted.

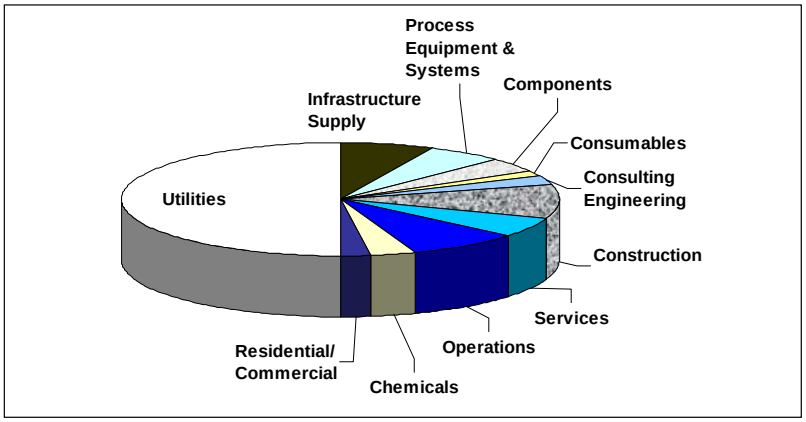
INDUSTRY AND OPERATIONAL STRUCTURE

DEFINING THE BROADER "WATER" SECTOR

The most widely used estimate of the size of the global water market over the last two years has been around $360 billion with an annual growth rate of 4%-5%, suggesting the market is currently about $375 billion. Within the water market, the key segments break down as follows:

- 50% of the total global market, or approximately $185 billion, is comprised of municipal utility services revenues, including both water and wastewater;
- 26%-27%, or $100 billion, comes from consulting, engineering, construction, operations and other services;
- 21%-22%, or $80 billion, stems from the sale of equipment, technology, and treatment chemicals;
- 2%-3%, or approximately $9 billion, is associated with residential and commercial water treatment produces and services;

Figure 1: Segments of the Global Water Industry



Source: Compiled from numerous industry sources & Janney estimates.

THE WATER UTILITY SECTOR

Within the $185 billion portion of the global water market that is broadly defined as utility services, an estimated $40 billion, or 21%-22%, is private sector utility revenue, while the remainder is in the hands of government entities, usually local municipal governments around the world. The U.S. investor-owned utility segment is a very small one within the broader structure of the global water industry. The 10 publicly-traded water utilities, plus a handful of larger utilities owned by other entities, generate approximately $5 billion in annual revenues, serving 10%-12% of the total U.S. population. Hundreds of smaller, private entities serve an additional 2%-3% of the population.

While the U.S. private sector serves only an estimated 13%-15% of the population, its share of total utility revenue is higher. This is generally because companies within the sector have taken a more proactive stance on infrastructure investment and are charging full cost of service, rather than embedding costs in a government finance structure. This trend toward full-cost pricing of water is beginning to take hold in some municipal governments as well, and we expect the overall price of water service to continue to rise.

Figure 2: Largest Investor-Owned Water Utilities

Water Utility or Subsidiary	Stock symbol or owner*	Population served	States of operation
American States Water	AWR	1.25 million	CA, AZ
American Water Works	RWE AG *	16.2 million	32 states
Aqua America	WTR	3 million	13 states
Aquarion	Macquarie Bank *	620,000	CT, MA, NH
Artesian Resources	ARTNA	245,000	DE, PA, MD
California Water Service Group	CWT	over 2 million	CA, WA, NM, HI
Connecticut Water	CTWS	275,000	CT
Middlesex Water	MSEX	437,000	NJ, DE
Pennichuck	PNNW	120,000	NH, MA
SJW Corp.	SJW	1 million	CA
Southwest Water	SWWC	over 2 million	10 states
United Water	Suez*	7 million	20 states
Utilities Inc.	AIG Highstar*	1.05 million	17 states
York Water	YORW	165,000	PA

Note: States of operation includes regulated and non-regulated services

Source: Company data & JMS estimates

THE WATER TREATMENT AND DISTRIBUTION PROCESS

The primary business of a regulated water utility is to collect, treat, and distribute drinking water and provide fire protection service to residential, commercial, and industrial customers within a given franchise territory. In most states, the public utilities commission issues a Certificate of Public Convenience and Necessity (CPCN), which provides the exclusive rights to serve all existing and new customers within a designated area (different states have slightly different names for this). Additionally, water utilities may have long-term contracts to serve water to surrounding communities that are in need of additional supply

Water is processed in treatment plants, which use increasingly sophisticated treatment technologies, stored in above-ground storage tanks and holding ponds, and distributed to customers through water mains and local distribution pipes. Many water utilities operate non-contiguous systems and manage many smaller systems that each need to have adequate supply and treatment capacity to serve their customers.

Water Supply: Raw water is typically collected from one of three sources:

- Surface water, including reservoirs, lakes, ponds, rivers, and streams
- Groundwater, drawn from wells and aquifers
- Purchased water, obtained from other water suppliers, typically another utility or a water wholesale agency

Permit restrictions usually limit how much water a utility can take from a given source. York Water, for example, needed the approval of the Pennsylvania Department of Environmental Protection Agency to pump additional water out of the Susquehanna River when it required an additional supply of water to maintain an appropriate water yield (the amount of water that is available for supply during a drought).

The amount of water in a surface water source is dependent on annual precipitation, and water restrictions may be implemented by state or local agencies if water levels drop below a predetermined amount. In some cases, a regional drought may cause authorities to implement water use restrictions throughout a jurisdiction impacting all utilities, even those whose supply is more than adequate. Utilities that derive their water from underground aquifers typically are less impacted by drought concerns, as the water recharge cycles take place over a longer period of time.

In general, East Coast utilities purchase less than 10% of their water supply, while California utilities generally purchase around 50% of their water supplies. As a result, operating costs are higher for California water utilities, but capital costs are lower, since the infrastructure cost of water supplies is (at least to a certain extent, excluding some government subsidies) embedded in the wholesale price. In the East, purchased water typically comes from interconnections with an adjacent water utility. In California, water is purchased from government water suppliers; the Hetch Hetchy water system in the San Francisco Bay area is a large supplier in Northern California and the Metropolitan Water District is the primary bulk water supplier in Southern California.

Water supply issues have moved up on the radar screen in California over the past year. It has been one of the driest on record, with only about three inches of rain in the Los Angeles area during the July 1, 2006 - July 1, 2007 water year. The state has an extensive system of dams and reservoirs, storing water from the Colorado River, the San Francisco Bay Delta region, and the Sierra Mountain snowpack, that has allowed residents to remain blissfully unaware of water shortage conditions. This seems likely to change in coming years, as supplies continue to tighten, driving the need for conservation. To compensate utilities, the state commission is considering decoupling water volume sales from revenue (more on this in the regulation section).

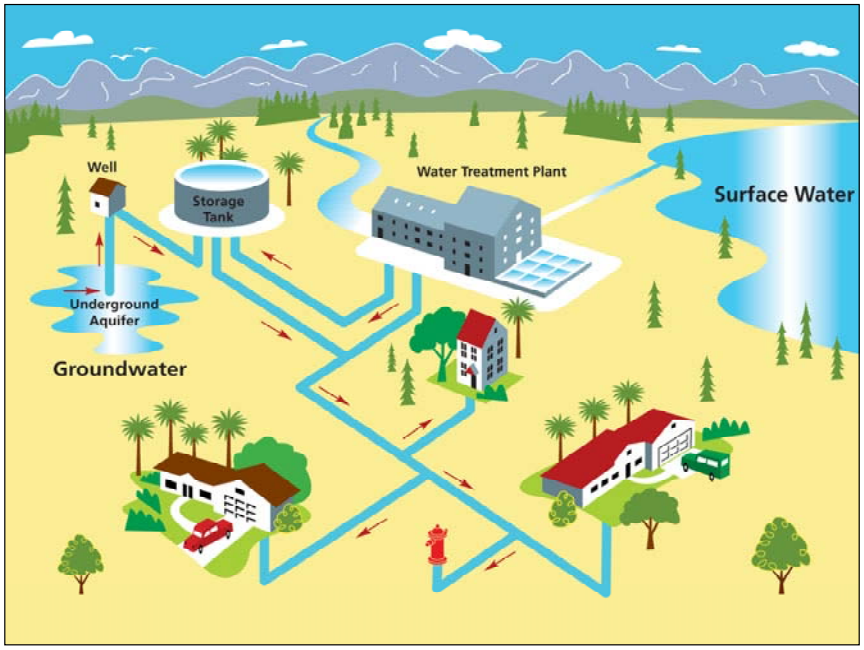
While desalination is a supply possibility, the cost is currently prohibitive and seldom used. As the cost of water increases and operating efficiencies of desalination plants makes the supply less expensive, this may become more of an option in coastal areas, particularly California, Texas, and Florida, where water shortages exist.

Water Treatment: Water is treated either in a centralized water treatment facility or at the wellhead before it is distributed to customers. The degree that water needs to be treated is dependent on the quality of the water source, which is monitored via analytical instruments that can now measure contaminants to microscopic parts per trillion levels. Historically, the primary form of water treatment was stacked sand and gravel filtration. Additionally coagulation chemicals were used to remove particles and chlorine disinfection was utilized to kill bacteria and other pathogens. Water treatment technologies have become increasingly sophisticated in recent years, shifting to greater use of microfiltration and ultrafiltration membranes, ozone and ultraviolet disinfection (UV), and ion exchange treatment. These treatment technologies are more effective but also more expensive, of course, and more complex to operate.

Water Distribution: Once treated, the water is pumped to storage facilities and tanks, and then distributed throughout the system based on user demand. The energy needed to power the pumps can create a sizable electricity bill; for example, the California Energy Association estimates that 6.5% of the total energy use in the state goes to pumping and treating water supplies. Water pipes are also pressurized via pumping systems, creating the water pressure required by end users. This causes stress on water mains and pipes, which may crack or break.

Most large water mains are made of cast iron or ductile iron, though steel and plastic pipes are becoming more common. Smaller water distribution pipes that deliver water to homes and businesses are more commonly made of PVC plastic. As pipes age, water main breaks and distribution leaks become more common, exacerbated by severe weather changes that may freeze or expand the pipes. Leakage rates in some older municipal systems may be as high as 50%, though typically lower for investor-owned utilities, which have a more active program of pipe repair and replacement. Still, the issue of effective leak detection will likely become more prominent, as water supplies become more constrained in some areas and water prices continue to rise. The chart below shows the basics of the water-treatment cycle.

Figure 3: Water Treatment Cycle



Source: California Water Services

RELATED WATER BUSINESSES

Wastewater: Not shown in the chart is the wastewater cycle, which typically works in reverse. Wastewater is piped through a separate but similar distribution network to a sewage treatment plant. The effluent is treated to meet environmental requirements and then typically returned to the water source. Historically, publicly-traded water utilities have had little involvement in the wastewater side of the business, focusing instead on providing drinking water service. Even in municipal government, these two ends of the water cycle have typically been handled by different agencies. This is beginning to change; however, as infrastructure needs for sewer systems are driving similar trends in consolidation and capital investment. In addition, treated wastewater is increasingly viewed as a source of water supply, gradually driving integration between the two types of systems in some areas. While this trend toward fully integrated water and wastewater management is still in the early stages of development throughout the U.S., more investor-owned utilities are turning to the wastewater business as a growth opportunity, either through regulated ownership of systems or via operating contracts for municipal customers.

Non-regulated Operating Subsidiaries: In addition to their regulated water businesses, many investor-owned utilities have complementary, non-regulated businesses. Utility participation in this sub-segment varies widely, with Southwest Water at one end of the spectrum, deriving approximately 60% of its revenue from non-regulated operating contracts, and York Water at the other end, with less than 5% of sales generated from these businesses.

Figure 4: Non-regulated Businesses and Participants

Non-regulated Business	Business Function	Participants
Land sales	Sale of non-watershed land	All
O&M Contracts	Contract where the utility operates and maintains another water purveyor's system over a specific time period	All
Linecare	A maintenance and protection program that covers all parts, material and labor required to repair or replace the customer's water service line	ARTNA, CTWS, CWT, MSEX, PNNW, WTR
Billing and Lab Services	The utility provides its billing and technical laboratory services to other utilities	AWR, CTWS, CWT, PNNW, SWWC, WTR
Construction Projects	Contract where the utility designs and builds another water purveyor's system, usually paired with an O&M contract	ARTNA, AWR, MSEX, SWWC
Antenna Revenues	The leasing of space on water towers for the placement of antennas such as cellular phone antennas	CWT, PNNW, WTR
Commercial Real Estate	Real estate development and ownership of commercial buildings and undevelopted land	SJW, PNNW
Military Contracts	O&M contracts for military bases	AWR
Septage Hauling	The collection, transport, and treatment of wastewater septage from customer septic tanks as well as septic system design, planning, and implementation	WTR

Source: Company Filings

We believe that the operations & maintenance (O&M) contracts business, in various forms, will become an increasingly important part of business for a number of water utilities in coming years. Municipalities, "the other 85%" of the U.S. water utility market, continue to face the challenges of rising infrastructure investment needs and limited funding sources, as does the federal government, which is beginning to privatize the operation of water and wastewater services for military bases.

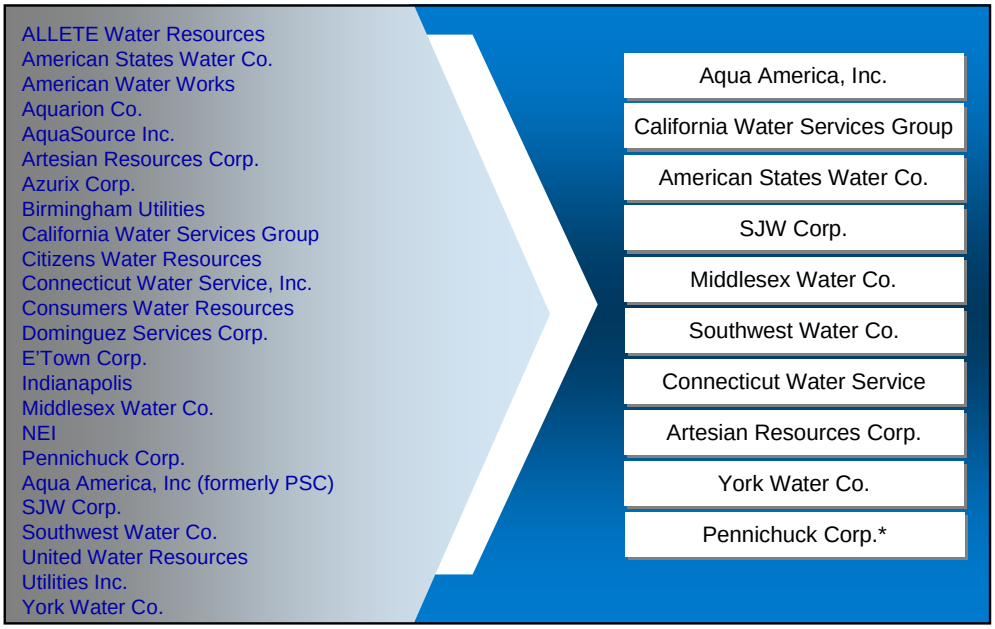
While private sector ownership or operation of water utilities continues to generate vocal opposition from "anti-privatization" activists, it seems inevitable that the rise in availability of private sector capital – with billions of investment dollars flowing into new "infrastructure funds" – will eventually find its way into the water sector via public-private partnerships (PPPs), which are more likely to be structured around services contracts rather than acquisitions or full asset ownership. Private sector participation in the wastewater market is often less controversial than drinking water and could be the fastest-growing part of this market.

EVOLUTION OF THE WATER UTILITY INDUSTRY

The water utility industry is one of the oldest in the U.S., with several companies in continual operation for more than 100 years. Companies were formed to provide service to growing populations outside major cities, and by far the bulk of population served by investor-owned water utilities is still in suburban areas or smaller towns. With the acceleration of population growth and housing developments since World War II, many small private water companies were formed, owned by developers or local business interests.

With the amount of systems in existence, consolidation within the industry seemed inevitable. Though the process was initially slow, it has accelerated during the past decade. Aqua America changed its name from Philadelphia Suburban in January 2004 to reflect expansion via acquisition into multiple states outside its original Mid-Atlantic service territory. As the chart indicates, investor-owned water utilities have already undergone substantial consolidation, with some 25 publicly-traded stocks in the 1980s now down to only 10 (ranked approximately by size). Most recently, Birmingham Utilities (BIW) disappeared after selling its assets to a local water authority and Connecticut water.

Figure 5: Consolidation of Publicly Traded U.S. Water Industry



•Note: The City of Nashua is attempting to acquire Pennichuck through eminent domain.

Source: Aqua America, Inc.

INTERNATIONAL ENTRY INTO THE U.S.

A notable event in the history of the U.S. water industry was the entry of international water utilities. The two large French water companies began including the U.S. in their international expansion plans in the 1980s and 1990s. During this time UK water companies, privatized by Prime Minister Margaret Thatcher in 1989, quickly generated excess capital that they looked to deploy abroad, viewing the U.S. as an attractive investment environment in the early stages of consolidation. Other European utilities followed suit, and by 2000 some of the largest investor-owned utility assets in the U.S., along with other water-related companies, had been acquired by foreign firms. These include:

- Aquarion, acquired by the Kelda Group (UK)
- American Water Works, acquired by RWE AG (German)
- United Water Resources, acquired by Suez Lyonnaise (France)
- E'Town Water, acquired by Thames Water (UK), which was in turn acquired by RWE
- Utilities Inc., acquired by Nuon (Dutch)
- U.S. Filter, acquired by Veolia Environnement (France)
- Nalco Chemical, acquired by Suez

A couple of electric utilities also got into the act, buying into the "multi-utility" concept, and assuming that their regulatory experience in electricity would be applicable to the water utility sector. The two main players in this trend were:

- AquaSource, DQE's subsidiary, was based on a roll-up model created by a series of small acquisitions, primarily in Texas and the southern U.S.
- ALLETE Water Services was created via acquisitions in Florida, North Carolina, and Georgia.

Interestingly, almost all of these transactions have since been unwound. The French firms decided fairly quickly that the water treatment business wasn't core to them and U.S. Filter and Nalco were sold, with Nalco re-emerging as a public company nearly three years ago. Two firms were re-sold to private equity firms - Aquarion to Macquarie

and Utilities Inc. to AIG, while Aqua America purchased the bulk of the AquaSource and Allete subsidiaries from their electric utility owners. E'Town was merged with American Water, which filed for an IPO spin-off from RWE in Aug. 2007. Only United Water remains with Suez, which is undergoing its own corporate transformation – a pending merger with Gaz de France SA, the French national gas utility, which will in turn generate a spin-off of the global water and waste services assets called Suez Environment.

The key lesson learned from this round-trip foray by outside interests seems to be that the water utility industry in the U.S. has unique characteristics – heavy doses of local politics and regulation, combined with high capital intensity – that make it best suited to firms with knowledge and experience. Looking ahead, we expect to see the industry continue to consolidate within its existing leadership structure, with the largest half-dozen investor-owned firms likely to dominate the landscape in the next five years.

PRIVATE EQUITY GETS INTO THE GAME

Water utilities have not been immune from the explosion of private equity investment in the past five years. As noted above, Aquarion and Utilities Inc. have been acquired by private equity players in the past two years, purchased from foreign owners looking to exit the U.S. water business. **The entrance of private equity has been controversial in the water industry, with the fear among some regulators and industry participants that typical financial buyers are poorly suited to the needs of water utilities, which have high ongoing capital spending requirements and limited capability for high debt leverage under regulated capital structure models.**

However, with the rise of a new class of private equity – long-term investors backed by pension funds looking for modest but stable and dependable returns over time – this form of investment ownership appears here to stay. Australia's Macquarie Bank, now the largest global infrastructure investor, exemplifies this trend, but other infrastructure funds are also looking at opportunities in water utilities. To date, they have been more successful in the U.K. than the U.S. Given current valuations in the sector, their opportunities here appear to be limited for now, but we expect to see private equity investors that have a long-term view and an understanding of the underlying value of utility assets in a rising price environment to continue to exhibit an interest in this sector. (For more details, see Appendix 2 on page 37).

EMINENT DOMAIN STILL A THREAT

As we noted above, some municipalities are becoming more interested in working with the private water utility sector to help them meet rising costs and more stringent operational demands. However, a few communities are moving in the opposite direction.

Eminent domain is the power of the state to seize, or take control of private property for the "public good" without the owner's consent. Condemnation is the act of exercising this power to take control of the property. Many water utility systems established by property developers over the years have been annexed by local governments, and the investor-owned water utility industry currently faces eminent domain battles in various jurisdictions throughout the U.S., most notably in New Hampshire, where the city of Nashua has been fighting for nearly five years to take over Pennichuck Water, unsuccessfully to date.

Investor-owned water utilities have faced condemnation threats throughout their history because their product is viewed as a public service, and some local governments or community activists object to having their water service provided by a for-profit private company, believing (usually incorrectly) that they can provide the service more cheaply. Foreign ownership (which may include, in the eyes of a local community, ownership interests outside the state, not just outside the nation) may be a catalyst for such actions, as could periodic rate increases needed to cover the cost of system upgrades. The view that private sector capital is more expensive than municipal bonds, generating a higher cost of service, also plays a role – ignoring the fact that private sector utilities pay taxes that flow back into the community, which municipal utilities obviously don't.

By law, government entities that condemn private property must pay "market value," the definition of which is almost always a point of controversy. The price to be paid may be negotiated, determined by appraisers, computed using a formula determined by state laws, and/or litigated in court proceedings. Beyond eminent domain itself – which most investor-owned utilities oppose, since their business plans target expansion of their asset base rather than monetization – valuation is the major point of contention. ***Local municipalities often believe that systems are valued well below the utility's assessment, and the municipality typically doesn't want to include the value of investment upgrades that have been made to a system beyond its initial purchase price.*** Because of these arguments, many eminent domain cases are ultimately dropped by the city that brings them, but some are successful, resulting in an asset sale and, typically, an investment gain for the utility. (For recent examples, please refer to Appendix 2 on page 37).

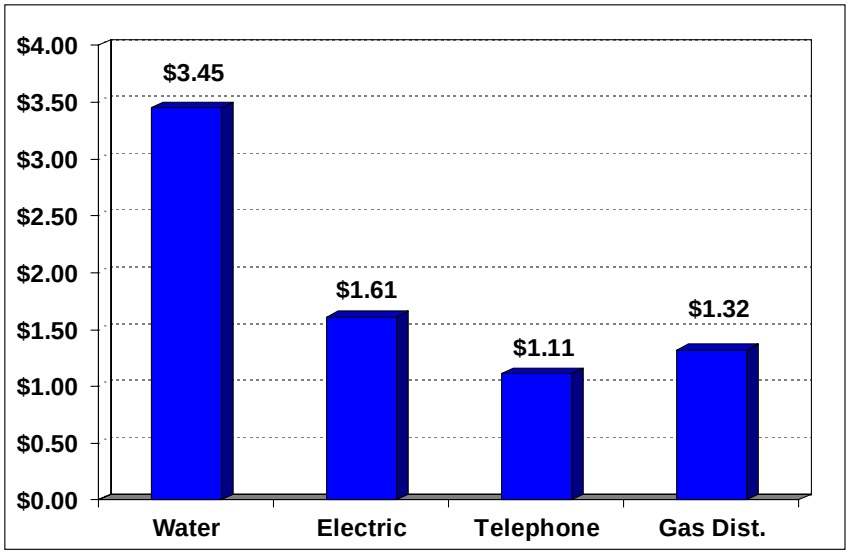
CAPITAL INVESTMENT NEEDS

DRILLING DOWN ON CAPITAL INVESTMENT NEEDS

The water utility industry is highly capital intensive, relative to other utilities and to other industries. This is a critical factor underlying the business model for the sector, since it is the key driver for earnings under the regulated return on equity model. While water treatment requirements are expensive, the biggest cost is the pipes in the ground, which are far more expensive to maintain and replace than electric or telephone lines. Water is an expensive commodity to transport, due to its weight and volume.

With low customer rates and high capital spending, the level of asset investment required to generate revenue is much higher for water utilities than for other utility sectors; approximately $3.45 of net investment per $1 in revenues, based on 2005 data gathered by industry consultant C.A. Turner. And the number keeps going up, as replacement costs for water infrastructure continue to escalate.

Figure 6: Capital Invested per Dollar of Revenue



Source: CA Turner Report, (2005)

Measured by net utility plant, the level of capital spending for the largest investor-owned water utilities is even higher than in the broader water utility industry. The average ratio of net utility plant in service to revenues for the 10 publicly-traded water utilities was $4.20 to $1, based on 2006 data. As noted in figure 7, the net utility plant/revenue numbers range significantly by company, from $6.06 for York Water, which has just undergone a major pipeline expansion, to $1.70 for Southwest Water, which derives 60% of its revenues from the far less capital intensive contract services business.

Generally, the East Coast water utilities, which generate almost all of their supplies by storing and transporting their own surface water or groundwater and have a higher level of pipe replacement needs due to infrastructure age and severe weather conditions, have higher relative levels of capital requirements, while West Coast water utilities, which purchase a much larger proportion of their water supplies from wholesalers (approximately 50% on average for California water companies) and generally operate under milder weather conditions, have a lower level of capital investment needs but higher operating costs. This is apparent in the net plant/revenue and capital spending/operating cash flow ratios noted in figure 7.

Nevertheless, despite these differences, all of the publicly-traded water utilities have annual capital spending requirements that significantly exceed their operating cash flow and their depreciation and amortization. While the rule of thumb for sustainable enterprise typically decrees that capital spending should be approximately in line with Depreciation and Amortization (D&A) and less than operating cash flow, thereby generating free cash flow that can be reinvested in growth initiatives, this is far from true in the water utility industry. Rather, capital spending averages about 4.6x D&A and more than 1.9x operating cash flow. Negative free cash flow year in and year out

obviously isn't sustainable, requiring regular infusions of debt and equity to fund ongoing capital needs for existing assets as well as to fund growth initiatives.

This is an aspect of the water utility business model that frightens some investors, but in fact it has worked relatively well over the past 20 years, as the industry has consolidated and grown. Capital spending budgets have gone up dramatically in the sector, followed by higher levels of depreciation. Though there has been some lag during periods of high capital investment, over time regulators have allowed equity returns on this investment that have been a source of asset growth and earnings growth in the industry (see more detail in regulation section, following).

At Aqua America, for example, capex rose to $271 million in 2006 from $66 million in 1996 for both existing and newly acquired assets. D&A expense rose during that period to $75 million from $10 million or to 14% from about 10% of revenues, obviously still well short of capital spending needs. With such long-lived assets – the life of a water main may be 80-100 years – depreciation expense isn't nearly enough to fund capex, particularly as replacement costs continue to escalate. Aqua America notes that the cost to install 16-inch pipe in 1904 was about $2.50 per foot. By 2004, the cost had escalated to about $265 per foot, a 100-fold increase.

Figure 7: Capital Spending Metrics

2006FY	Revenue	Depr.	Cap Ex	OCF	Net Util Plant	Cap Ex/ D&A	Cap Ex/ OCF	Net Plant/ Rev
2006 FY Data ($ Millions)								
ARTNA	$49.9	$4.6	$30.9	$12.7	$253	6.7x	2.4x	5.1x
AWR	$268.6	$26.3	$66.6	$51.6	$751	2.5x	1.3x	2.8x
CTWS	$46.9	$5.9	$17.3	$9.9	$264	2.9x	1.8x	5.6x
CWT	$334.7	$30.7	$88.4	$61.0	$941	2.9x	1.4x	2.8x
MSEX	$81.1	$7.1	$30.4	$15.9	$311	4.3x	1.9x	3.8x
PNNW	$24.5	$3.6	$21.4	$2.0	$123	5.9x	NM	5.0x
SWWC	$224.2	$11.0	$44.5	$28.0	$378	4.0x	1.6x	1.7x
WTR	$533.5	$75.0	$271.7	$170.7	$2,506	3.6x	1.6x	4.7x
YORW	$28.7	$2.5	$20.7	$7.1	$177	8.2x	2.9x	6.2x
				Average		**4.6x**	**1.9x**	**4.2x**

Source: Company filings

As the water utilities increase their attention to efficient asset management and replacement of deteriorating infrastructure in an effort to get their pipe networks on a 100 to 200 year replacement cycle, rather than the lagging 400-500 year cycles they operated under historically, their levels of spending will likely continue to exceed operating cash flow for some years to come, continuing their reliance on regulators to provide a fair and timely rate of return on that investment.

Further complicating matters is the fact that water sales per customer are flat to declining for most utilities, due to rising conservation efforts. As noted in the following example from California Water Service Group, water production has been largely flat for the past five years, while utility plant per customer is up 27%. Obviously, this places pressure on existing customers who must pay for higher infrastructure costs.

Figure 8: Utility Plant vs. Revenue Growth

	2002	2003	2004	2005	2006
Total Water Production (bil gal)	132.2	131.7	139.0	132.1	133.5
Growth (2006 vs. 2002)					***1.0%***
Utility Plant Per Customer ($ mil)	2,182	2,313	2,418	2,578	2,778
Growth (2006 vs. 2002)					***27.3%***
Revenue Per Customer ($ 000)	579	594	667	670	692
Growth (2006 vs. 2002)					***19.5%***

Source: California Water

UNDERSTANDING REGULATION

UTILITY COMMISSION BASICS

Water utilities are subject to a high degree of (environmental and economic) regulation given their monopoly status and the health implications and human necessity of the product/service they provide. While water quality standards are set at the federal level by the Environmental Protection Agency (EPA), the most important regulatory decisions impacting the underlying economics of the business model are made at the state level. ***We believe a fair and consistent regulatory environment is one of most important factors in valuing the earnings capabilities of water utilities.***

State commissions. At the state level, a regulatory body, known in most jurisdictions as either a Public Utility Commission (PUC) or Public Service Commission (PSC), oversees regulated electric, gas, and water utilities, in addition to telecom and some transportation companies in that state. Only investor-owned and privately held utilities fall under the commission's jurisdiction. Municipalities, which account for 85% of U.S. water systems, set their rates on a local level, although they must also abide by federal (and sometimes more stringent state-specific) drinking water standards.

Members. The composition of these commissions varies by state, but in most cases, they comprise 3 to 5 members, who are either appointed by the Governor (and then confirmed by the State legislature) or, less often, directly elected by the state's voters. Terms typically range from four to six years and are staggered so that a single commissioner is replaced at a time, allowing for some consistency on the PUC.

Staff. Each commission has a professional staff that works closely with the utility and presents its assessment to the commission that makes the final ruling on rate cases and other matters impacting the company. Some commission staffs are divided into utility sub-sectors, which often results in a commission with a firmer understanding of the utility-specific nuances, making for more even-handed decision-making. Since they are not politically appointed or elected, the commission staff tends to have a much longer tenure than the commissioners themselves. The positive aspect of this is that they provide history and experience, while commissioners with varying political leanings come and go; the less positive aspect is that they may be more resistant to regulatory innovation and change.

State-by-state policy jurisdiction. Each commission creates and implements its own policies on a broad range of topics including allowed rates of return, capital structure, and accounting methods. For utilities operating in multiple states, this translates into complying with multiple operating and accounting standards. Because of the individual state regulatory structure, multi-state utilities must set up independent operating subsidiaries for each state in which they do business, and utilities may not be merged or cross-subsidized across state lines, even if a regional water utility might make more economic or operational sense. Commissions do allow some consolidation of administration functions at the parent company holding level, but these costs must be carefully allocated to each state subsidiary.

One of the commissions' most important tasks is to set utility rates (known as ratemaking). Additionally, commissions monitor the quality of service, grant approval for mergers/divestitures, approve the selling of non-watershed land, determine the parameters of affiliate transactions, grant expansion of franchise territories, and approve equity and debt offerings. In the case of a large merger, a utility needs approval from each state that it operates in. A noteworthy example of the power that individual states can play in the outcome of a utility's business plans is Exelon's (EXC) failed attempt to acquire Public Service Enterprise Group (PEG). After two years of navigating regulatory approvals, the two electric/gas utilities abandoned their merger intentions, when it became evident that an agreement with the NJ PSC could not be reached.

LIVING AND DYING BY RATE RELIEF

We view ratemaking as the most important interaction that a utility has with the Commission, and the main driver of its ability to generate sustainable earnings. ***The objective of ratemaking is to establish rates that provide reliable service at a reasonable cost to customers AND provide utility shareholders a fair return on invested capital.*** It is no easy task to balance the needs of this diverse constituent base. Rates can be established either through formal proceedings, known as rate cases, or through adjustment clause provisions. A formal rate case is a large, expensive undertaking that can take anywhere from nine months to two years (in a worst-case scenario). Adjustment

mechanisms are being utilized with increased frequency as they are easier to implement, minimize regulatory lag, and decrease the sticker-shock felt by customers associated with larger, less frequent increases.

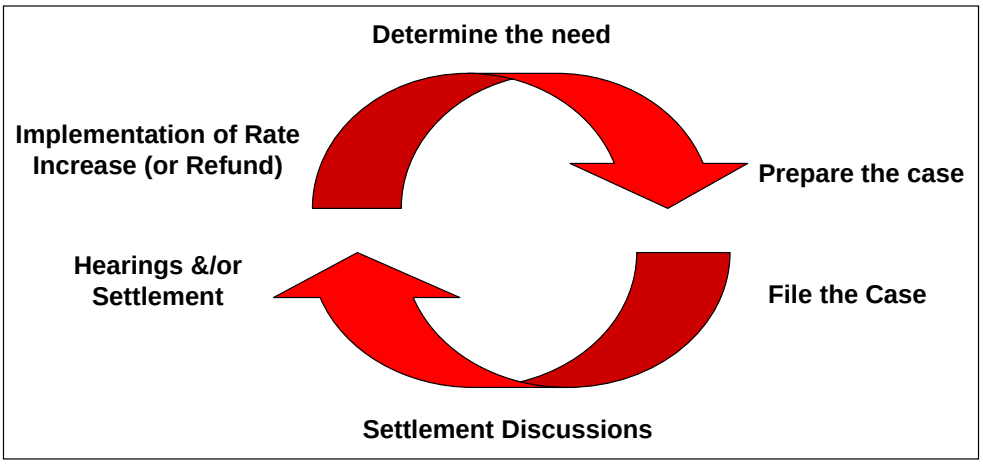
Typically, a rate case is initiated by a utility that wants to incorporate additional capital outlays into rate base and needs to recoup operating expenses that can be passed through to customers. If the Commission suspects that a utility is over-earning its allowed return on equity, it can request that the utility initiate a rate proceeding, but in a period of rising costs such as water utilities are now experiencing, this is almost never the case. In fact, as we shall see, most water utilities are struggling to earn their allowed ROEs, never mind exceeding them.

Rate case cycles. In some states, water utilities are on a rate cycle established by the commission to better manage its rate-case load. Pennsylvania and California each have a handful of large, multi-district investor-owned water utilities to regulate, as well as smaller private water utilities and electric and gas utilities, and each has placed these water utilities on a specified rate cycle (two years in Pennsylvania; three years in California), to better manage the process. The bulk of rate relief is implemented in year one after a new rate case award and rates are further adjusted by a CPI mechanism in subsequent years. To help minimize regulatory lag, some commissions allow a "forward test year" instead of "historical test year" in assessing costs, taking into account anticipated future operating and capital costs as well as historical costs.

Rate proceedings. Many different parties are involved during the rate case, as the Commission aims to balance the needs of customers while establishing a fair return to utility shareholders. Many parallels exist between a rate proceeding and a legal proceeding: An Administrative Law Judge is appointed to oversee the proceedings, witness testimony is presented, public hearings are held to hear customers' concerns, and then the commission issues a ruling. The difference between the two is that after all of the information is gathered, the staff also issues its opinion that the Commission weighs heavily in making a ruling but may not always adopt. Often, a draft ruling is released and additional debate ensues before a final ruling is issued. In many cases, the water utility may reach an amenable agreement with the commission, referred to as a settlement, eliminating the need for litigation and extensive witness testimony in a court-like environment. This also speeds up the process and allows the utility to implement increased rates more quickly.

Intervenors. Often opposed to rate increases is the Consumers Advocate Office (CAO) or Ratepayer Advocate, a department within the commission which represents customers, established to protect consumers, especially the elderly on fixed-incomes, from excessively burdensome rate increases. In some states, the attorney general's office assumes the consumer protection role. Other intervenors may include large commercial and industrial customers.

Figure 9: Steps in the Rate Case Cycle



Source: Allegheny Energy

There are two major pieces to a rate case: **Return on Investment** and **Recovery of Operating Expenses**. Together these two components comprise the **Revenue Requirement,** which can be difficult for investors to comprehend. The utility seemingly works its way backwards through the income statement to reach the per gallon amount that it should be charging customers.

Rate Making Formula

Operating Expenses
\+ Return on Rate Base

Revenue Requirements

We start with what the Commission believes the company's **Return on Investment** should be, starting with the allowable net income. This piece is determined by assessing several main items:

- What **portion of the company's asset base is considered "used & useful,"** in other words, which of the company's capital expenditures will be allowed into rate base (in the case of water utilities, disallowance of capital spending is rare, since most spending is needed to provide safe, reliable service of an ingested commodity necessary for public health), and
- What **equity ratio** the company will be allowed to earn a return on, and
- What **allowed return on equity** will be granted, plus
- What is the **cost of debt**, i.e., the interest expense the company is paying on its debt.

By convention developed over many years of U.S. rate of return regulation, utilities generally receive a specified **equity ratio** ranging between 48% and 53%, although the rate used for regulatory calculations is not always the same as the existing equity/debt structure of the company. If the Commission feels the company is under-levered, with too much equity (viewed as a higher-cost source of capital), the company will not be allowed to earn a return on its entire equity base. Or, if the Commission feels the equity is too low, potentially raising the cost and risk of debt issuance, it can encourage the company to issue equity by withholding a portion of the rate relief until equity is issued. We would argue that in a low-interest rate environment, water utilities with their steady cash flows could shift to somewhat higher levels of debt in their capital structure, but we are unlikely to see the mix change significantly any time soon.

Added to this is the **Recovery of Operating Expenses**. Utilities pass on a variety of costs, including purchased water costs, electricity, healthcare, pension, depreciation, legal, accounting (including Sarbanes-Oxley compliance) and administrative costs – this is less than an inclusive list. The company must prove that expenses incurred are prudent, and those expenses deemed not prudent will not be allowed to be recouped as part of the rate case, eating into a company's allowed return. This encourages utilities to manage their businesses efficiently and to keep costs reasonable.

When utilities discuss "regulatory lag," it is most commonly in reference to the delay between the time when higher operating costs are first experienced by the utility and when these costs are finally passed on to customers. Earnings from the smaller utilities can be especially hit hard in such cases; for example, Artesian Resources filed a rate case on May 9, 2006, due in part to a 65% increase in electric rates that took effect in its operating territory earlier that month. Although allowed to implement temporary rates by the Delaware Commission, the company's full rate settlement was not finalized until December, which negatively impacted earnings through much of the year.

Together, these items add up to the utility's **Revenue Requirement**, the total amount the utility needs to collect from customers to recoup its expenses and earn a fair return. This revenue requirement is then broken down among the various customer categories on a per 1,000 gallon basis. Rates are then set based on estimates of normalized usage by customers. In reality, actual revenues achieved may differ in a given year, as customer usage varies from year to year, primarily due to changes in weather patterns (i.e., hot, dry summers lead to higher water use, and vice versa).

THE IMPORTANCE OF FAIR ALLOWED ROES

While mechanisms to minimize regulatory lag are very important, as noted below, we believe the single most important metric contained in a rate stipulation is the Allowed Return on Equity. While utilities in general have traditionally been viewed as far less risky than other high-profile sectors, such as technology, and water utilities in particular have been viewed as the lowest-risk among utilities (with the possible except of gas-distribution companies), given their monopoly status, it is increasingly our view that sufficient risk exists that shareholders should be fairly compensated if the industry is to continue to attract the level of equity capital that it will need to meet its infrastructure investment requirements over the coming decade.

Consider the following operating risks:

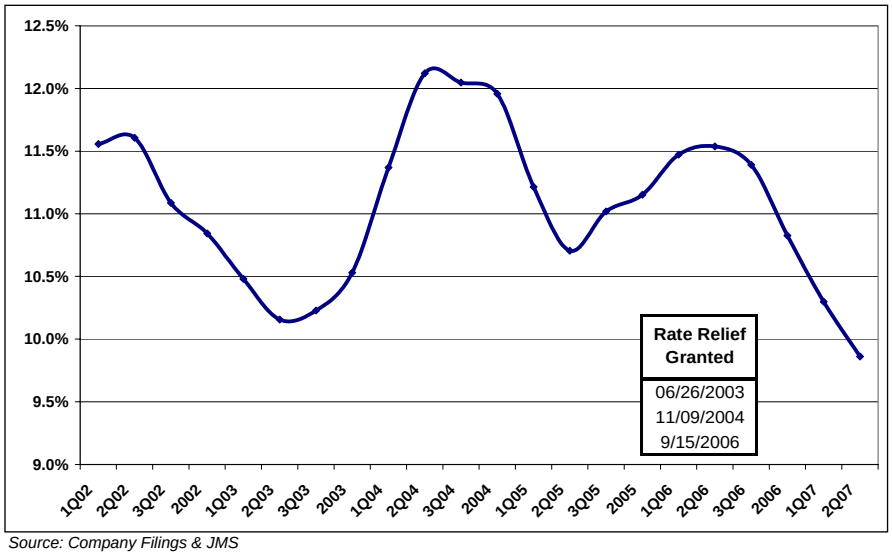
- Earnings variability related water supply shortages and seasonal weather patterns, which appear likely to be exacerbated by climate change
- Risks associated with distributing an ingestible product critical to public health and welfare, not new but more apparent as environmental litigation has increased over the past decade
- Accelerating costs related to replacing aging infrastructure and meeting increasingly stringent environmental standards
- Risks of regulatory lag on recovering those costs
- Risk of eminent domain by municipal governments, which creates a form of competition, and potential for loss of assets
- In the last five years, the potential risk of terrorism threats to water facilities, though fortunately, this last risk seems remote so far

In our view, these risks deserve consideration of an additional risk premium, rather than a reduction of ROEs in a declining interest rate environment, as some consumer advocates have argued. In addition, increased market volatility has caused a rise in the beta for many water utility stocks, the typical measure of equity risk (see additional discussion of rising beta's in the valuation section). Currently, allowed ROEs for water utilities in the United States range from 9.0%-12%, although more recent cases are coming in around 10.0% to 10.5%.

We would argue that this may be a bit too low to continue to attract the high levels of investment capital that this industry will need in coming years, as competition for capital in other infrastructure markets also intensifies. For example, the Federal Energy Regulatory Commission has allowed a 14% ROE in some cases to incentivize much-needed investment in the nation's electricity grid. Investment in toll roads and other forms of infrastructure also offers potentially higher investment returns. We believe this debate is getting underway in earnest in utility commissions across the U.S. ***As long as investor-owned water utilities have no trouble attracting capital at 10% ROEs, as they have done historically, ROEs won't change much – if they begin to struggle a bit (and equity share prices have already come down), we could see ROEs improve somewhat.***

Beyond allowed ROEs is the issue of what ROE the company actually earns. Theoretically, a water utility should earn close to its allowed return on equity once increased rates are implemented, as long as they reflect current costs. This is easiest to show for a company in only one rate jurisdiction. York Water, for example, has been a diligent rate filer, going before the Pennsylvania Commission approximately every two years and settling its rate cases in a prompt time frame. The chart below, which uses a rolling, trailing twelve month average return on equity, shows how the ROE picks up again shortly after rate increases are implemented.

Figure 10: York Water's Return on Equity (Rolling 12 Month Average)



Source: Company Filings & JMS

MINIMIZING REGULATORY LAG

Minimizing regulatory lag is important for utilities, which often witness cost pressures and margin declines during the period after they have incurred costs and while they are waiting for rate relief to take effect. There are various regulatory mechanisms to help companies combat this problem. In some states, including Texas and Delaware, utilities can implement interim rate increases upon filing, while they are waiting for a final decision to be made. In Delaware, water utilities implement a portion of their expected rate increase 60 days after they have filed; this is known as "temporary rates". In Texas, the Commission on Environmental Quality, the state equivalent to the PUC, allows utilities to implement the full amount that they expect to receive in rates as soon as they file for rates. In both of these jurisdictions, rates are subject to refund if the commission's final decision allows less than the utility had currently been collecting from customers.

Working together, in recent years, commissions and utilities have created methods to pass on cost increases without going through the long and arduous process of a full rate case. For the utilities, these rate mechanisms and surcharges minimize regulatory lag and help stabilize earnings. From the commission's standpoint, they prevent sticker-shock with the negative publicity and customer complaints surrounding large rate increases, and decrease the amount of regulatory cases they have on their plate.

As some of these state-specific mechanisms have proved successful, neighboring states have also begun to adopt them, as best-practices filter through the multiple regulatory jurisdictions. The most successful example of this is the DSIC (Distribution System Improvement Charge), established in Pennsylvania in 1997. The DSIC allows water utilities to add an infrastructure rehabilitation surcharge to customers' rates for capital expenditure improvements made to the distribution system (normally pipe replacement). The mechanism adjusts periodically based on additional qualified capital expenditures completed or anticipated in a future period and is capped at a percentage of base rates, recently increased to 7.5% from 5% in Pennsylvania. The amount is reset to zero when a new rate structure takes effect (after the completion of a regular rate proceeding). Companies that are currently earning their full allowed return on equity are not eligible to book DSIC increases between rate cases.

A handful of states have adopted a similar mechanism (see chart below), adding their own methodology and parameters, and using different acronyms to keep everyone on their toes. Taking this idea one step further, the California utilities are working with the commission on a DSIC-like mechanism that would encompass not only "distribution system" capital, primarily pipeline repairs, but all infrastructure improvements.

Figure 11: State Distribution System Surcharge Mechanisms

State	Acronym	Name	Year Implemented	Qualifying Plant
PA	DSIC	Distribution System Improvement Charge	1997	Water Only
IL	QIPS	Qualifying Infrastructure Plant Surcharge	2000	Water and wastewater
IN	DSIC	Distribution System Improvement Charge	2000	Water Only
DE	DSIC	Distribution System Improvement Charge	2001	Water Only
OH	SIC	System Infrastructure Improvement Surcharge	2004	Water and wastewater
CT	WICA	Water Infrastructure and Conservation Adjustment	2007	Water Only
NY*	SIC or DSIC	Distribution System Improvement Charge	NA	Water Only
CA	IISM	Infrastructure Improvement Surcharge Mechanism	Pending	

** On a case specific basis without changes in legislation*
Source: State Utility Commissions

Another mechanism called "general investment surcharges" work like the DSIC surcharges but apply to capital investments in assets other than those in the distribution system. For example, in order to minimize regulatory lag and rate shock associated with a $40 million treatment plant upgrade, Pennichuck Water was granted an approval to add a surcharge to customer bills once half of the project was completed and deemed "used and useful".

We are seeing momentum building for the use of additional rate mechanisms. In California, efforts are underway to create a water revenue adjustment mechanism (WRAM), which would decouple water usage from utility revenue. This minimizes the risk associated with usage changes related to weather and gives the utility an incentive to promote conservation.

Another recent development, also in California, is a modified cost balancing account. The balancing account tracks changes in wholesale water rates, which include purchased water costs, electricity expenses, and pump taxes. Currently, the balancing account will reflect a change in the cost of items (if, for example, the cost of electricity increases), but not the impact associated with a change in supply mix. This can be a significant swing factor. In times of increased demand, usually related to warmer than normal weather, the company's supply mix shifts to include additional purchased water, which is more expensive. In a *modified* balancing account, a change in supply mix would be reflected in the account and is recoverable in the next rate case.

A sample water bill can be found in Appendix 3 on page 38. We would point out the tiered billing structure that is applied as usage increases. Additionally, a DSIC surcharge is added as a separate line item.

ENVIRONMENTAL REGULATION

The U.S. Environmental Protection Agency (EPA) sets national environmental standards, and implements environmental laws enacted by the U.S. Congress. The agency has the authority to monitor compliance and enforce sanctions when standards are not met. The EPA's mission also includes informing the public on topics such as water quality, water conservation, and more recently, the value of water and the need for sustainable investment in water infrastructure. State environmental agencies and local jurisdictions (most notably California) may set more stringent standards than the federal governments.

The two key laws impacting the water utility industry are:

- **Clean Water Act of 1976:** Controls industrial and municipal discharges to surface water and groundwater, with general oversight of water quality in rivers, lakes, aquifers, and coastal waters.
- **Safe Drinking Water Act of 1984:** Requires monitoring and control of more than 200 potential contaminants, specifying treatment requirements and technologies and setting some operational standards for utilities.

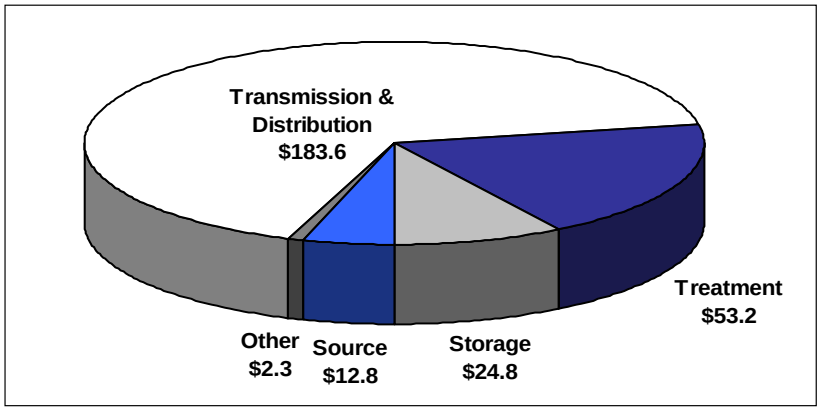
Some of the most talked-about environmental rulemakings impacting the water utility industry include the following, each of which is being implemented gradually over the course of the decade:

- **Arsenic Rule – January 2001**
  - Reduces maximum arsenic levels from 50 parts per billion to 10 ppb
  - Drives demand for ion exchange and other groundwater treatment technologies
  - Estimated capital costs of $900 million
- **Long Term 2 Enhanced Surface Water Treatment Rule (LT2) – December 2005**
  - Will reduce pathogens in surface waters
  - Drives demand for monitoring, membrane filtration, and higher levels of treatment
  - Estimated capital costs of $2 billion
- **Stage 2 Disinfectant/Disinfection By-Product Rule – December 2005**
  - Will limit exposure to chlorine by-products in municipal water systems
  - Drives demand for UV and other alternative disinfection systems
  - Estimated capital costs of $850 million

The implementation of these laws over the past 30 years has gradually increased the complexity and cost of running a water utility, while improving the quality of drinking water, a job that is never done. As research on health and environmental risks has become more sophisticated, and monitoring and treatment technologies have improved, regulators' ability to understand and address water quality standards has increased, resulting in new rules. ***Meanwhile, degradation of source water supplies due to pollution, along with deterioration of aging infrastructure, has made compliance with existing standards more challenging.***

The EPA's most recent biennial "Needs Survey" indicated that $277 billion will be needed over the next 20 years to upgrade U.S. water systems, both public and private, to meet environmental standards. Despite rising treatment costs, the largest portion of spending needs lies in the distribution system, as indicated in the following chart. Since it is such a heavy physical commodity, water is very expensive to transport compared to, say, electricity molecules through a power line.

Figure 12: EPA $277 Billion Need by Project Type



Source: Drinking Water Infrastructure Needs Survey and Assessment, (2005)

VALUATION & INVESTMENT RISKS

READING THE TEA LEAVES: EVOLUTION IN VALUATION

Valuation for water utilities can seem puzzling for investors looking at this capital-intensive business, with its negative free cash flow and regulation-restrained earnings. Over the past few years, the stocks have seemed expensive by traditional utility measures. Historically, the primary investment criteria for water utilities have been return on equity (ROE), price/earnings (P/E) multiples, and dividend yields, an approach emanating from their high levels of retail ownership, with an investor base oriented toward low risk and steady income.

These companies have evolved into "growth utilities," with above-average earnings growth driven by consolidation and capital investment, and relatively low dividend yields. As water utilities have accelerated their capital expenditure plans, experiencing higher depreciation as a result, enterprise value (EV)/EBITDA multiples have become more relevant. With increased emphasis on acquisitions over the last 15 years, price/book has become a primary measure of value for the group, since shareholders equity is the simplest approximation of a company's accumulated regulatory asset value, short of accessing actual rate base numbers from each regulatory jurisdiction. For smaller companies with underinvestment in assets and/or net income that may not reflect true earnings leverage, price/sales and price or revenue per customer and may also be worthwhile for comparison purposes.

Figure 13: Water Utility Stock Valuation Comparison

Name	Symbol	Rating	P/E 2007E	P/E 2008E	5-Yr Avg P/E	Div. Yield	Price/ Book	Price/ Sales	EV/ EBITDA	ROE (LTM)
American States	AWR	NEUTRAL	26.4x	24.6x	27.0x	2.1%	2.6x	2.3x	9.7x	8.9%
Aqua America	WTR	NEUTRAL	31.1x	27.8x	30.1x	2.1%	3.3x	5.4x	12.9x	10.3%
Artesian Water	ARTNA	BUY	21.3x	20.1x	23.5x	3.5%	1.7x	2.8x	10.0x	8.8%
California Water	CWT	NEUTRAL	27.7x	25.1x	25.5x	2.7%	2.3x	2.3x	10.5x	8.4%
Connecticut Water	CTWS	BUY	23.6x	21.3x	25.1x	3.7%	2.0x	3.8x	11.7x	7.6%
Middlesex Water	MSEX	NEUTRAL	22.5x	21.2x	26.3x	3.6%	1.9x	3.1x	12.2x	8.6%
Pennichuck	PNNW	NEUTRAL	34.5x	30.0x	NA	2.6%	2.4x	3.9x	13.4x	6.0%
SJW Corp	SJW	NR	32.3x	24.7x	22.9x	1.7%	2.9x	2.9x	N/A	16.5%
Southwest Water	SWWC	NEUTRAL	34.2x	24.1x	35.2x	1.8%	1.8x	1.5x	13.6x	6.0%
York Water	YORW	NEUTRAL	28.8x	26.2x	28.1x	2.7%	2.9x	6.3x	14.4x	10.7%
Average			**28.2x**	**24.5x**	**27.1x**	**2.7%**	**2.4x**	**3.4x**	**12.0x**	**9.2%**

Source: Thomson Financial/Baseline; JMS estimates on rated companies

RETURN ON EQUITY

With regulation weighing so heavily on a company's earnings power, allowed and actual return on equity metrics are important tools for valuing utility stocks. As we mentioned previously, earned ROEs have often lagged allowed ROEs, as rate increases haven't kept pace with rising costs. Rate mechanisms, such as the DSIC (see page 23) and interim rates, can help to maintain a more consistent earnings stream and allow companies to actually earn ROEs in line with allowed levels. ***As noted on the chart above, the trailing twelve month ROEs for most of these firms are well below the allowed levels of 10.0% to 10.5% that are typically granted. It's difficult to measure allowed ROEs precisely for each company, as most have multiple rate jurisdictions and have different allowed ROEs granted by each commission.***

Pennichuck and Connecticut Water are both examples of firms experiencing regulatory lag. Both were granted meaningful rate increases in their main operating territories earlier this year. While both were granted an allowed return slightly above 10%, the trailing twelve month ROEs are well below that level, as only six months of rate relief are included. We see upside to earned ROEs in the coming year for American States and California Water, as both are in the midst of large rate cases. Even Aqua America, a historically strong earner that has been highly effective in managing its rate cases (typically earning ROEs in the 11%-12% range), has been under-earning by its historical standards. The company should start catching up in the coming year, as a large number of rate cases are pending. ***In general, when reviewing the prospects for water utility stock, a shortfall between allowed ROE and***

earned ROE can be viewed as an opportunity, if rate cases are pending or the overall regulatory environment in a state (such as California) is improving.

The contribution from non-regulated businesses may also play a role in the earned ROE, masking the performance of the regulated utility business. We see this on both ends of the spectrum; SJW has a high ROE due to returns on its real-estate business and SWWC shows a low ROE due to the low margins in its unregulated business, which is in the midst of restructuring.

Beta. While we won't go into a lengthy discussion regarding equity risk and allowed ROEs in the water industry, it is worth noting that the level of volatility in the sector has risen, along with market volatility, in the past year. At right is a table showing betas for the water utility stocks at the beginning of October. The average across the group has risen to 0.82, versus the 0.5 to 0.7 betas that were more common historically.

For a number of stocks – notably the California water companies, American States, California Water, and SJW Corp. – betas have risen to dizzily high levels, ranging from 1.25 to 1.71. We have seen extraordinary volatility in these stock prices in recent months, apparently driven by some combination of generally higher trading volumes, with increased activity from hedge funds and water ETFs, more news on interest rates, and more news flow on water issues, especially in California.

It remains to be seen whether regulators will take this higher level of volatility and implied equity risk into consideration when setting ROEs in future rate cases.

Water Utility Stocks Raw Beta

Ticker	10/5/2007
ARTNA	0.21
AWR	1.25
CTWS	0.57
CWT	1.64
MSEX	0.52
PNNW	-0.01
SJW	1.71
SWWC	1.00
WTR	1.04
YORW	0.23
Average	***0.82***
Utilities Index	***0.86***

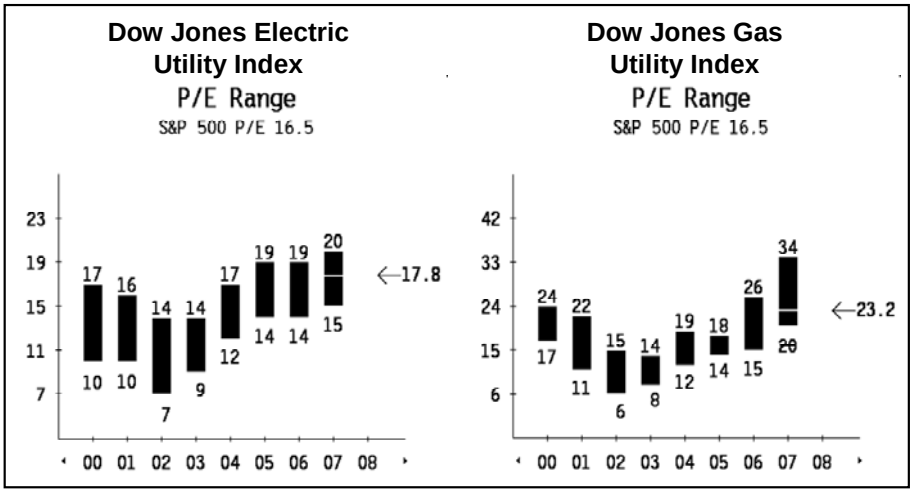
Source: Bloomberg, beta relative to S&P 500 Index, 2-year weekly regression data

PRICE TO EARNINGS:

Historically, electrical utilities have traded at P/E multiples in the low-teens, gas utilities have traded in the high teens, and water utilities have traded in the low to mid 20s. As the following charts indicate, valuations for all of the utility sub-sectors have risen over the past few years.

Electric utilities have benefited from earnings growth due to successful "Back to Basics" strategies that have returned the strategic focus to managing the regulated business. The 2005 repeal of the Public Utilities Holding Company Act (PUHCA) – Depression-era legislation that had previously restricted takeovers in the utility industry by non-utility or non-U.S. firms – has increased M&A activity and speculation in that sector, boosting valuations of likely takeover candidates. Multiples in the gas utility segment have also expanded over recent years.

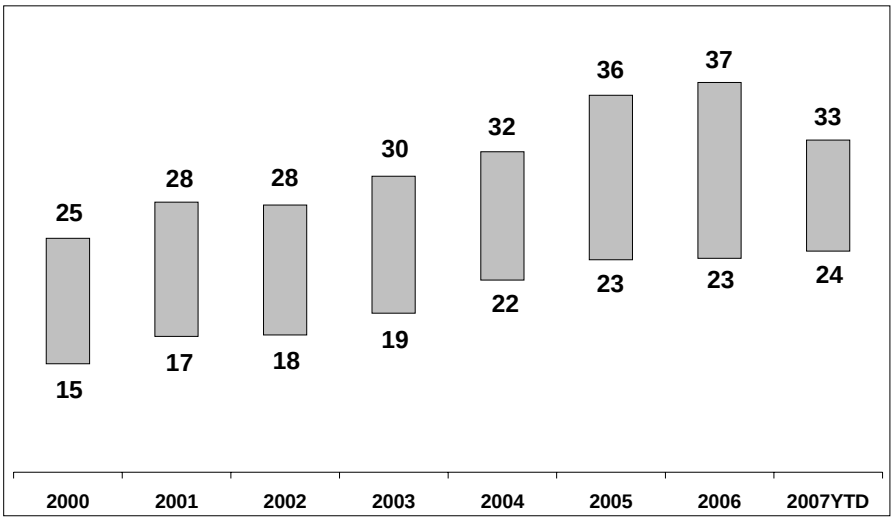
Figure 14: Historical P/E Multiples for Electric & Gas Utilities



Source: Baseline

Investors familiar with valuing utilities mainly on P/E multiples have been surprised by the rising multiples in the water segment. While water utilities have consistently traded at a premium to their electric and gas brethren, multiples expanded considerably in 2005 and into 2006, as the macro story in "water" took hold, and the creation of water-focused ETFs and UITs increased demand in this small industry group with limited market capitalization, creating a "scarcity premium." In the past year, P/E multiples have subsided in the water sector, raising the question of where they are likely to settle in the coming year. ***In our view, multiples likely peaked in 2005-2006, in the mid- to upper 30's, and we expect average multiples to settle in the 20's over the next year or two.***

Figure 15: Water Utility Average Forward P/E Multiples



Source: Baseline & JMS

DIVIDENDS:

Dividend yields for water utilities have historically been below that of the Dow Jones Utility Index. In comparison, the water sector has enjoyed greater opportunities for growth via asset investment and acquisition. We have seen an effort to bring down payout ratios over the past decade to fund a greater level of reinvestment. While some investors have been disappointed by relatively low yields, most have been happy with the higher level of stock appreciation the sector has shown over the past 10 years. From 1995 through 2005, before subsiding in the past year and a half, water utility stocks earned average total returns in the mid-teens, including a 3%-4% dividend yield. Strong price appreciation has brought down average yields to below 3% in many cases.

Figure 16: Water Utility Dividend Data

Company	Date of Most Recent Increase	Percent Increase	Current Annual Div.	Current Div. Yield	Payout Ratio*	5 Year CAGR	10 Year CAGR
American States Water	December 1, 2006	4.4%	$0.94	2.1%	56.6%	1.5%	1.3%
Aqua America	September 1, 2007	8.7%	$0.50	2.1%	66.7%	7.9%	7.0%
Artesian Resources	May 8, 2007	3.8%	$0.66	3.5%	73.8%	5.2%	5.0%
California Water Service	February 5, 2007	0.9%	$1.16	2.7%	75.3%	0.7%	1.0%
Connecticut Water Service	September 17, 2007	1.2%	$0.87	3.7%	86.1%	1.3%	1.2%
Middlesex Water	November 13, 2006	1.8%	$0.69	3.6%	82.1%	1.7%	2.1%
Pennichuck Water	June 1, 2005	2.3%	$0.66	2.6%	90.4%	1.6%	5.2%
SJW Corp.	February 1, 2007	7.1%	$0.61	1.7%	N/A	5.6%	4.8%
Southwest Water Company	January 19, 2007	10.0%	$0.23	1.8%	60.5%	9.2%	9.1%
York Water	December 28, 2006	5.4%	$0.47	2.7%	78.7%	6.2%	4.4%
Water Utility Average		**4.5%**		**2.7%**	**74.5%**	**4.1%**	**4.1%**

Source: Baseline & JMS Estimates
** Payout ratio assumes JMS 2007 EPS estimates*

Recently, there has been a contraction in the yield spread between water utilities and the rest of the industry. The Dow Jones Utility Index yield of 2.8% is just 10 basis points above the water group average, and water utilities remain well above the S&P yield of 1.7%. Some of the smaller East Coast companies are still showing dividend yields above 3.5%, while most of the larger firms have brought down their payout ratios to focus on growth. The normalized dividend payout ratio for the sector is now between 60%-75% of annual earnings, with some payout ratios still in the 80% range. Of course, in a weak earnings year, caused by regulatory lag or unfavorable weather, the payout ratio can occasionally end up much higher, even over 100%.

Dividends continue to be important to retail investors, who own a high percentage of water utility shares compared to other sectors, as well as to some institutional owners. Many of these stocks have proud track records of not only uninterrupted dividend payments, but also decades of consecutive increases. We view water utility dividends as an integral part of a company's long-term strategy of providing value to shareholders and believe all of these stocks will continue to annually increase their dividends, though at modest rates, as growth continues to be a central part of their long-term business strategies.

Figure 17: Water Utility Dividend Facts

Company	Dividend Facts
American States Water	Has paid 285 consecutive quarterly dividends and 53 consecutive years of annual increases
Aqua America	Has paid dividends for 61 consecutive years with 17 increases in the last 16 years
Artesian Resources	Has increased dividend every six months since August of 2003
California Water Service	Has paid 251 consecutive quarterly dividends with 40 consecutive years of annual increases
Connecticut Water Service	Has paid 38 years of increased dividends
Middlesex Water	Has paid consecutive dividends each year since 1912 with over 24 years of annual increases
Pennichuck Water	Has paid dividends each year since 1912
SJW Corp.	Has paid dividends for over 20 years with an average increase of 10% over the last 5 years
Southwest Water	Has paid dividends since 1963 with increases every year since 1996
York Water	Has paid 545 consecutive quarterly dividends & increased its dividend for 10 years

Source: Company Filings

Figure 18: Company Ownership Profile

Ticker	Shares Outstanding (M)	Retail	Institutional	Insider
ARTNA	7	80%	14%	6%
AWR	17	39%	58%	3%
CTWS	8	76%	21%	3%
CWT	21	51%	48%	1%
MSEX	13	70%	26%	4%
PNNW	4	60%	34%	5%
SWWC	24	44%	53%	3%
WTR	133	46%	53%	1%
YORW	11	83%	13%	4%

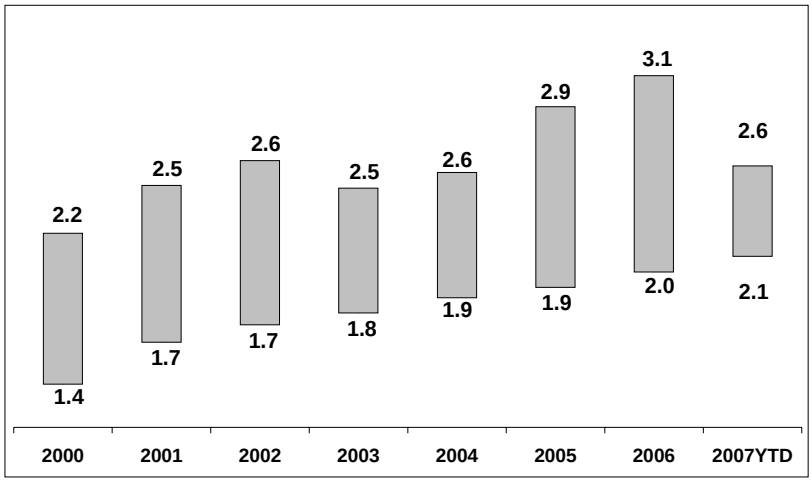
Source: Baseline & company filings

PRICE TO BOOK:

Price/book is a key metric for utility valuation, as book value is the easiest approximation to rate base. Shareholders' equity, an integral component of book value, reflects the investment in a company's asset base, though differences may exist depending on what regulators have allowed into rate base (via acquisitions or capital expenditures). ***Price/book is the primary framework for acquisition valuation, generally reflecting what the buyer is paying for assets versus asset value.***

Price/book multiples for the water utility industry have risen significantly over the past 15 years. In the 1980s and early 1990s, water utilities typically traded for 1.0x-1.5x book value. The key catalyst for higher valuations was a flurry of acquisitions in the late 1990s, when large foreign utility buyers paid 2x-3x book value for what they viewed as platform acquisitions to enter the U.S. market. While valuations have subsided since last year's highs, the average price/book multiple for water utilities is still close to 2.5x.

Figure 19: Water Utility Average Price/Book Multiple



Source: Baseline & JMS

An unintended consequence of higher price/book valuations is the subsequent slowdown in the consolidation process. Typically, only the book value of an acquired asset is allowed in the rate base, and it is difficult to gauge if a premium paid on an asset would be included. If acquisition premiums are disallowed, the acquiring company only earns a return on the book value and not on the additional premium paid. This is why we chuckle when we hear speculation of Aqua America being a top M&A target – its industry leading price/book multiple, currently 3.3x, would make it very hard for anyone to earn a return on investment any time soon.

More broadly, the problem with the price/book multiple as a valuation metric is that it may not accurately reflect the underlying value or earnings power of the company. The assets may need additional investment to bring them up to regulatory and operating standards, causing a further lag on earning a return. Or, other assets besides water utility plant – such as land or water rights – may be reflected at very low historical values that are far from reflecting current market value.

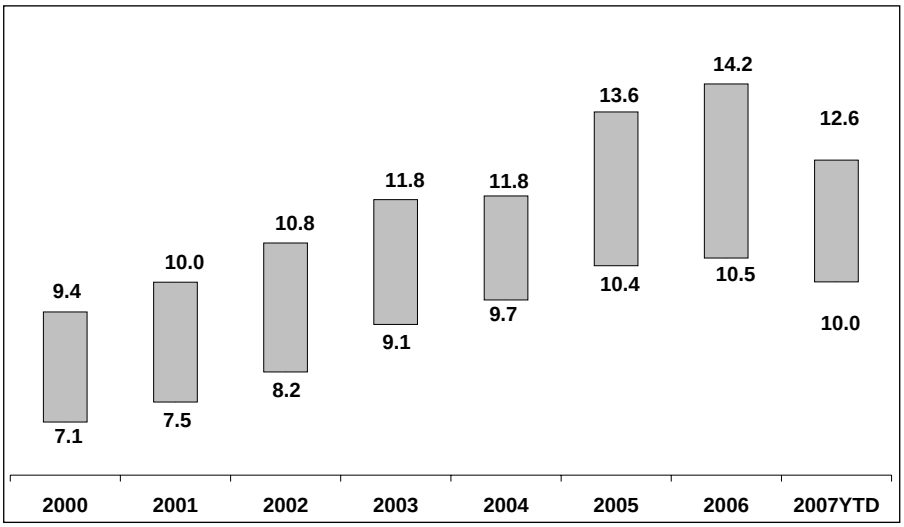
Another consideration in evaluating the effectiveness of price/book is the high replacement cost for utility assets themselves, far above what is reflected in the historical equity investment included in book value, or in the rate base on which utilities are allowed to earn a return. Replacement of these higher-cost assets gives rise to ongoing negative free cash flow and constant need to access debt and equity markets for funding (as we explained in the capital spending section on page 16). In sum, we would argue that instead of price/book multiples in the industry being too high, perhaps book value is "too low" – that is, too low to reflect the underlying value of utility assets. But, this is likely to remain a key regulatory and financial measure for the foreseeable future.

EV/EBITDA:

With the rise in capital spending generating increased D&A expense, and of course the rise of private equity, with its focus on cash flow rather than GAAP earnings, the EV/EBITDA multiple has become perhaps the most widely used measure of value.

Similar to P/E and Price/book multiples, EV/EBITDA multiples have climbed over the past several years with stock prices, although they have declined from their highs this year. The current average EV/EBITDA multiple across the group is 11.1x, with Aqua America and York Water at the high end of the range as they typically are across all valuation metrics. Southwest and Pennichuck are also at the high end, but this is due to depressed trailing earnings. American States and California Water are trading at a lower multiple, around 10x EV/EBITDA, due to their higher mix of purchased water costs and lower capital spending on water sources.

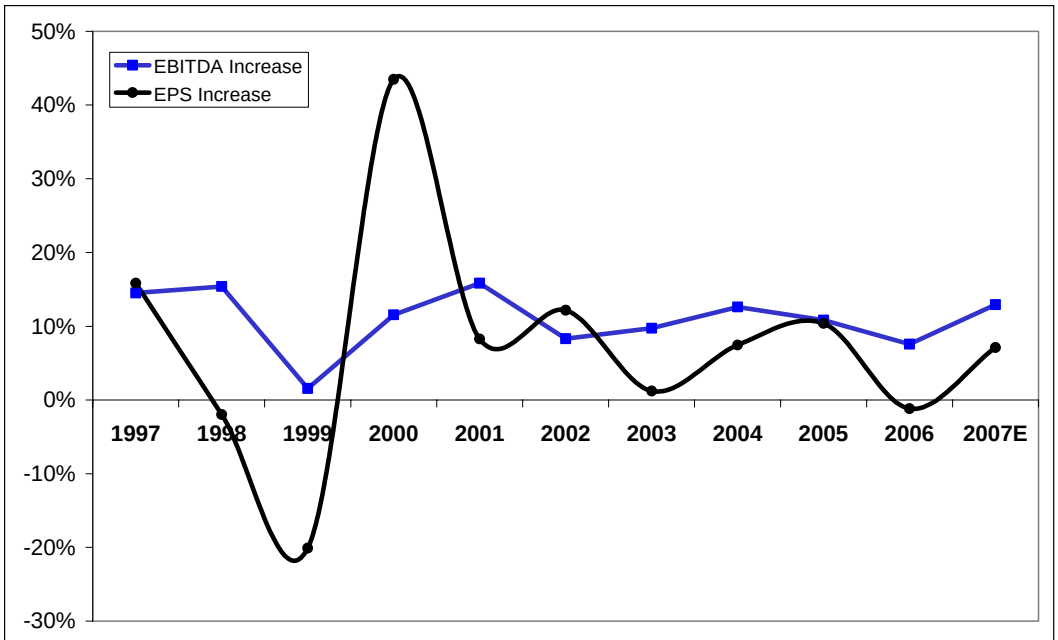
Figure 20: Water Utility Average Historical EV/EBITDA



Source: Baseline & JMS

For several companies, EBITDA has recently expanded more quickly than EPS as D&A accelerates with capital spending. The example below from Aqua America compares annual increases in EPS versus EBITDA over the past 10 years, showing that EBITDA growth has outpaced EPS growth for most of the past five years.

Figure 21: Aqua America's EBITDA *vs.* EPS Growth



Source: Company Filings and JMS

In sum, while water utility valuations have risen over the past five years, we believe that the sector will continue to maintain multiples above broader utility averages, reflecting their above-average growth potential.

INVESTMENT RISKS:

Changes in Regulatory Climate: Water companies face the risk of a negatively changing regulatory environment. PUC's may rule against the petitioning company, or in favor of the company to an extent lesser than expected. Both situations can negatively affect operating results. Companies with multi-state jurisdictions have minimized the risk that poor regulatory treatment in one jurisdiction can have on earnings. It remains difficult to predict how future changes to relevant PUC's could impact future regulatory policy.

Weather/Drought: Extreme weather (cold, wet, or dry) can negatively affect utility results. Excessively dry conditions can lead to drought concerns and could result in reduced water consumption as conservation efforts take hold. Excessively cold temperatures can crack transmission pipes. Excessively wet weather reduces customer demand for water, especially during the summer months when demand usually peaks. Geographic diversity can help companies to mitigate the impact of weather volatility on earnings.

Competition: Water utilities face no competition within their regulated franchise territories. Competition exists for acquisitions outside existing franchise territories or franchise territory expansion, as other investor-owned utilities pursue similar growth strategies.

Integration Risk: If a utility acquires another water system, resources may be devoted to integrating new and existing operations including the call centers, IT systems, & regulatory platforms. This could take management's attention away from other pursuits. It is difficult to predict how long these conversions and upgrades will take, how much they will cost, and what efficiencies will be gained from the new operations.

Condemnation and Eminent Domain: Municipalities can petition to acquire water utility assets from private companies through eminent domain or condemnation. Such cases have historically led to legal proceedings before PUC's and in some cases state supreme courts, where both parties may argue the municipality's ability to condemn as well as what constitutes a fair purchase price of the assets in question. Companies have been able to successfully defend themselves in the past, but legal and personnel expenses associated with the proceeding can negatively affect earnings.

Changes in EPA Standards: Water quality standards as determined by the EPA are continually being updated and enhanced to ensure the safety and quality of drinking water. These changes to water quality standards often force utilities to increase capital spending to bring water plants, well stations, and other assets "up-to-code" within a certain time frame. Although these changes appear to be a risk, they actually help drive future earnings in the regulated model and can be viewed as an opportunity.

Supply Concerns: Water utilities (primarily those with operations on the west coast) may encounter supply issues. Companies within the sector must maintain a sufficient raw and treated water supply that meets all quality standards. A raw water source that becomes contaminated may place a strain on the system's ability to serve customers. In some cases, companies will incur costs to purchase water from other providers to meet demand, and this can negatively affect earnings. Generally, raw water sources vary by geographic location, and general supply risks vary accordingly.

Terrorism: There is an unlikely risk that water supplies, treatment facilities, and distribution systems could be terrorist targets. Water utilities already had security measures in place prior to September 11, 2001, but have added additional precautions since then.

Labor Risks: Many water utilities employ a unionized workforce in the states in which they operate, which can pose a labor risk. If union contracts cannot be negotiated on a timely basis, under favorable terms, and resulting in a strike or labor stoppage, the financial condition of the company can be adversely affected.

Decreased Consumption: As water usage per capita decreases due to conservation efforts, bottled water consumption, and high-efficiency appliances, utility sales to residential customers can be negatively affected. Regulatory mechanisms such as "decoupling," which disassociates customer bills and actual usage, can help hedge this risk.

APPENDICES

APPENDIX 1 - COMPANY SPECIFIC WATER UTILITY FINANCIAL DATA

In millions, except per share data or otherwise noted	Artesian Resources (ARTNA)	American States Water (AWR)	Connecticut Water Service (CTWS)	California Water Services Group (CWT)	Middlesex Water (MSEX)	Pennichuck Water (PNNW)	San Jose Water (SJW)*	Southwest Water (SWWC)	Aqua America (WTR)	York Water (YORW)	Average
JMS Rating	**BUY**	**NEUTRAL**	**BUY**	**NEUTRAL**	**NEUTRAL**	**NEUTRAL**	**NR**	**NEUTRAL**	**NEUTRAL**	**NEUTRAL**	
Fair Value	**$21**	**$41**	**$27**	**$42**	**$21**	**$24**	**NR**	**$14**	**$24**	**$18**	
Market Data											
Current Price	$19.15	$43.66	$24.07	$42.49	$18.91	$25.15	$35.80	$12.85	$23.10	$17.11	
52 Week High	$20.67	$44.84	$25.61	$45.37	$20.24	$26.92	$45.33	$16.41	$26.62	$20.25	
52 Week Low	$18.05	$33.57	$21.41	$34.23	$16.93	$17.55	$27.65	$11.95	$20.50	$16.12	
Common Shares Outstanding (000)	7,100	17,114	8,250	20,666	13,203	4,222	18,289	24,174	132,913	11,233	**25,716**
Market Capitalization	$136	$736	$198	$833	$251	$108	$635	$325	$3,070	$192	**$648.4**
Average Daily Trading Volume (000) (1-Month)	6.8	139.4	8.3	236.1	14.8	4.5	70.9	245.5	1,131.5	9.3	
Short interest %	0.0%	12.4%	0.3%	10.5%	0.6%	0.1%	7.4%	12.4%	8.1%	0.1%	
Institutional Holdings (% of outstanding)	14%	58%	21%	48%	26%	34%	49%	53%	51%	13%	**37%**
Income Statement Data *(2007 Estimates)*											
Revenue	$52.6	$308.6	$59.1	$379.4	$85.7	$21.7	$206.0	$221.0	$612.4	$32.2	
EBITDA	$22.2	$101.1	$23.3	$104.4	$31.3	$11.5	N/A	$34.4	$322.6	$17.5	
Net Income	$6.3	$30.3	$7.9	$31.9	$11.3	$3.1	$20.9	$9.2	$99.9	$6.7	
2006A EPS	$0.97	$1.58	$0.74	$1.34	$0.82	$0.13	$1.20	$0.40	$0.70	$0.58	
2007E EPS	$0.90	$1.66	$1.01	$1.54	$0.84	$0.73	$1.13	$0.38	$0.75	$0.60	
2008E EPS	$0.95	$1.78	$1.12	$1.70	$0.89	$0.84	$1.48	$0.54	$0.84	$0.66	
Balance Sheet & Cash Flow Data											
Net Property, Plant, and Equipment	$262	$757	$273	$975	$319	$132	$527	$398	$2,647	$181	
Total Debt/Capitalization	53%	48%	44%	43%	49%	53%	46%	46%	52%	30%	**47%**
Net Capital Expenditures (TTM)	$25	$52	$18	$86	$32	$20	$105	$45	$257	$21	
5 Year CAGR Data											
Revenue CAGR	9.0%	7.0%	2.0%	6.0%	7.0%	3.0%	7.0%	11.0%	13.0%	10.0%	**7.5%**
Net Income CAGR	8.7%	8.3%	-0.9%	32.6%	7.9%	5.9%	8.0%	9.0%	8.1%	12.1%	**10.0%**
EPS CAGR	8.0%	7.0%	-8.0%	5.0%	5.0%	-36.0%	9.0%	4.0%	7.0%	8.0%	**0.9%**
Capital Expenditures CAGR	7.7%	6.7%	4.0%	13.0%	19.0%	21.1%	8.4%	24.3%	17.0%	23.8%	**14.5%**
Valuation Data											
2007 P/E	21.2x	26.4x	23.8x	27.6x	22.6x	34.6x	31.7x	34.0x	31.0x	28.6x	**28.1x**
2008 P/E	20.2x	24.5x	21.5x	25.0x	21.2x	29.9x	24.2x	23.8x	27.5x	25.9x	**24.4x**
Price/Book Value	1.6x	2.3x	2.0x	2.2x	1.9x	2.3x	2.9x	1.9x	3.3x	2.9x	**2.3x**
Price/Sales	2.8x	2.5x	3.8x	2.3x	3.0x	4.1x	2.9x	1.5x	5.4x	6.3x	**3.5x**
EV/EBITDA	10.0x	10.2x	11.9x	10.5x	12.2x	13.8x	N/A	13.6x	12.7x	14.5x	**12.1x**
Return on Equity (TTM)	7.6%	10.1%	7.3%	8.2%	7.7%	4.7%	15.4%	5.6%	9.9%	9.6%	**8.6%**
Current Yield	3.5%	2.2%	3.6%	2.7%	3.6%	2.6%	1.7%	1.8%	2.2%	2.8%	**2.7%**
Beta	0.21	1.25	0.57	1.64	0.52	(0.01)	1.71	1.00	1.04	0.23	**0.82**

Source: JMS Estimates, Baseline, Bloomberg

**Note: SJW estimates sourced from Bloomberg and Baseline*

APPENDIX 2: EXAMPLES OF PRIVATE EQUITY PURCHASES AND CONDEMNATION CASES

PRIVATE EQUITY:

Utilities, Inc purchased by AIG: Utilities, Inc. is a water/wastewater utility serving 300,000 customers located in 17 states, primarily based in the Sunbelt. In April 2006, a private equity subsidiary of AIG Global Investment Group acquired Utilities, Inc. from a subsidiary of Nuon, a large Netherlands-based energy company. The transaction was first announced in May 2005 and took almost a year for the multiple regulatory approvals to be obtained. This acquisition marked the entrance of financial buyers into the space.

Aquarion purchased by Macquarie: Aquarion provides water services to approximately 200,000 customers (a population of 677,000) in Connecticut, Massachusetts and New Hampshire. In early 2007, a consortium led by the Australian bank Macquarie, completed the purchase of Aquarion from Kelda, a large British water/wastewater utility, for $860 million, financing $555 million with debt. In order to complete the transaction, Kelda parceled off Aquarion's New York customer base to United Water (a subsidiary of Suez) and Aqua America. Aquarion had been a $415 million public company before being acquired by Kelda in 2000.

CONDEMNATION PROCEEDINGS:

Pennichuck & the City of Nashua: One of the most combative and drawn-out eminent domain battles is the attempt of the City of Nashua to take over Pennichuck Water in New Hampshire. The conflict began in April 2002, when Aqua America (then known as Philadelphia Suburban) agreed to acquire Pennichuck. At the time, Vivendi Environment had 17 percent ownership in Philadelphia Suburban and the condemnation discussion was prompted by concerns over international ownership of water assets. This was not the first time, however, that Nashua had expressed interest in "taking back" its water assets and the eminent domain battle continues, long after Philadelphia Suburban abandoned its acquisition attempt. Five and a half long years and millions of dollars later, the issue has still not been resolved. Over the past year, the two sides abandoned settlement discussions and gone before the PUC for a full trial proceeding. Hearings were completed in September and a ruling on the matter is expected in the first quarter 2008. We believe the company will ultimately remain the owner of the system.

Aqua Indiana/Aqua America and Ft. Wayne IN: The City of Fort Wayne, Indiana is attempting to acquire a system that represents approximately 1 percent of Aqua America's total customer base that was acquired as part of the AquaSource acquisition, which closed in July of 2003. Aqua America continues to challenge the city's valuation assessment.

Aqua Ohio/Aqua America and Ashtabula County: In 2002, the county of Ashtabula began the process of condemnation for a portion Aqua Ohio's water system. Ashtabula was a low-growth area and represented less than 1 percent of Aqua's assets. Instead of fighting the condemnation attempt Aqua America decided to sell the system to the county for $12 million and entered into an operating contract with the county to run the system.

California American/American Water Works and Felton San Lorenzo Valley Water District: In January of 2007, the San Lorenzo Valley (SLV) Water District began the formal condemnation attempt of California American's Felton water system, which serves 1,350 customers in California. FLOW, a local grass roots organization of active Felton citizens has been working with the SLV Water District in an attempt to acquire the Felton system since 2002, when Thames Water purchased the parent company of California American, American Water Works. In September of 2007 a local court ordered Cal-American to appear in superior court in January of 2008, to begin the eminent domain proceedings and determine if the SLV water district has the right to acquire the Felton water system via condemnation.

New Mexico Utilities Inc./Southwest Water and Albuquerque Bernalillo County Water Authority: The most recent condemnation battle began in early 2007, when the Albuquerque Bernalillo County Water Authority and the City of Rio Rancho, filed to condemn the assets of NMUI, a subsidiary of Southwest Water, representing 20 percent of customer connections. Proceedings are ongoing, and not surprisingly, there is a considerable gap regarding the valuation of the assets in question.

APPENDIX 3: WATER BILL EXAMPLE

AQUA

Service To:

Account Number

MEDIA

Aqua Pennsylvania, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010-3489

Tel: **877.987.2782**
Fax: **866.780.8292**
e Mail: **custserv@aquaamerica.com**

Questions about your water service?... Contact us before the due date.

Bill Date	Total Amount Due	Due Date
October 05, 2007		**October 29, 2007**

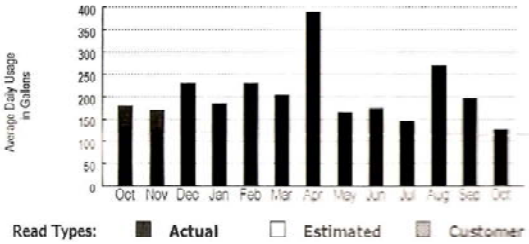
Meter Data

Meter	Size	Billing Period	Days	Read Type	Meter Readings	Usage	Units
	5/8	10/03/07	27	Actual	336400	3,400	Gallons
		09/06/07		Actual	333000		
Average Daily Usage = 125 Gallons		Total Days:	27		Total Usage:	3,400	Gallons

Billing Detail

Amount Owed from Last Bill	$
Total Payments Received	0.00
Balance	
Customer Charge	11.50
2,000 gallons @ $0.006019 per gallon	12.04
Next 1,400 gallons @ $0.006817 per gallon	9.54
Total Water Charges	33.08
DSIC Charge	1.65
Surcharge	0.28
Amount Due 10/29/07	$

Water Usage History



Message Center

- Effective October 1, 2007 the allowable DSIC charge is 4.98 %. This reflects $105.7 million in system improvements made by the company since July 2006. These improvements include the replacement of aging water pipes and other infrastructure as well as improvements to the quality of the water that we serve.
- Effective August 26, 2007 the State Tax Adjustment Surcharge (Surcharge) is .85% of your water charges.
- Please note your account number is a 16-digit number. The full 16-digits must be provided to ensure correct posting of your Aqua payment.

IMPORTANT NOTICE: SEE REVERSE SIDE FOR OTHER INFORMATION

The yellow box indicates the relevant monthly charges.

- *The rate per/gallon increases after the first 2,000 gallons.*
- *Customer is billed on a monthly basis on actual amount consumed (not estimated).*
- *A DISC charge is applied, including an explanation in the Message Center.*

TEAR SHEETS

American States Water Co.	NEUTRAL	AWR

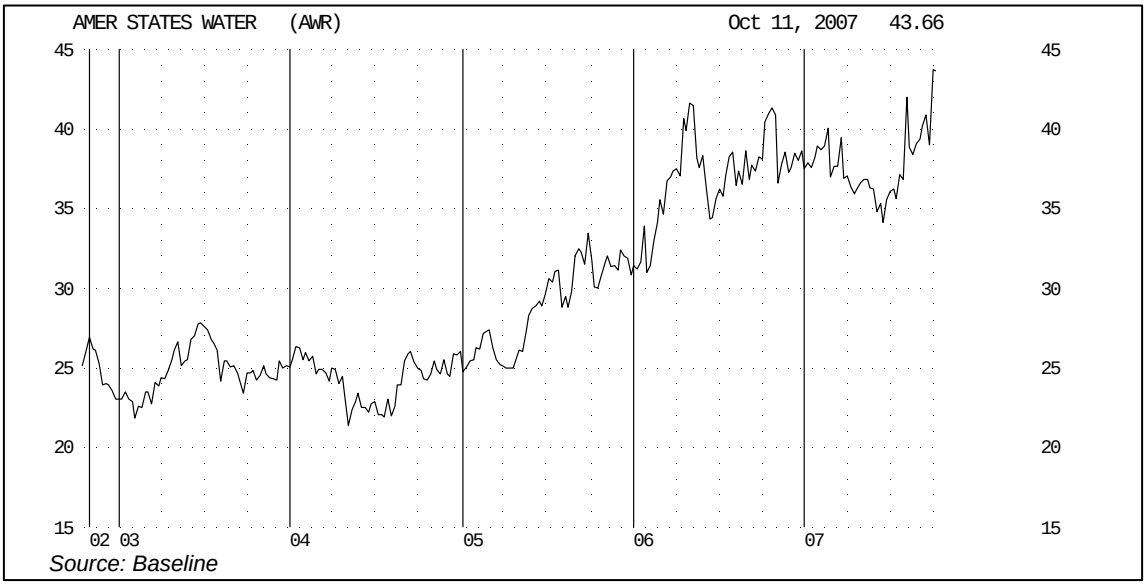
American States Water Company

American States Water Co.
630 East Foothill Boulevard
San Dimas California 91773
909-394-3600

Company Statistics (Dec. Fiscal)		*EPS*	*2006*	*2007E*	*2008E*
Fair Value Target	$41.00	Q1	$0.43	$0.31	$0.34
Current Price	$43.66	Q2	$0.39	$0.43	$0.45
52 Week Price Range	$33.57 - $44.84	Q3	$0.42	$0.58	$0.61
Market Cap	$744,883.2	Q4	$0.35	$0.34	$0.38
Average Daily Volume (000)	144	FY	$1.58	$1.66	$1.78
Annual Dividend	$0.94				
Dividend Yield	2.2%				

Company Description: American States Water provides water services to approximately 250,000 customers in California through its Golden State Water Co. subsidiary. It also operates a water utility in Arizona serving about 13,000 customers, a small electric service company in Big Bear California serving approximately 23,000 customers, and an unregulated services subsidiary with long-term contracts to provide water and wastewater services to military bases.

Thesis: American States Water has a stable asset base in its operating territory and continues to invest in its core regulated operations, generating earnings growth. Its unregulated services subsidiary is now contributing significantly to earnings as well, with new military base contracts coming online. The company has rate requests pending in two key service territories that should be finalized by the California PUC prior to year's end. The company has been catching up on earning a return on its capital investments under a more favorable regulatory environment in California, and we believe the company's underlying earnings growth rate should be in the 7-8% range. We rate the stock NEUTRAL, as it has appreciated sharply since summer, and we await a more favorable entry point.

Potential Catalysts:

- Favorable decisions on rates cases for regions I and II in California
- Addition of new military service contracts such as those recently announced for Fort Bragg and Fort Jackson
- Divestiture of the electric utility services segment
- Leverage of the company's 100,000 acre feet of water rights to create new business opportunities