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Ohio American Water Company
Case No. 07-1112-WS-AIR

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

PREPARED DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
PRINCIPAL
AUS CONSULTANTS

ON BEHALF OF

OHIO AMERICAN WATER COMPANY

CONCERNING

FAIR RATE OF RETURN

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Pauline M. Ahern and I am a Principal of AUS Consultants. My business address is 155 Gaither Drive, Suite A, Mt. Laurel, New Jersey 08054.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I am a graduate of Clark University, Worcester, MA, where I received a Bachelor of Arts degree with honors in Economics in 1973. In 1991, I received a Master of Business Administration with high honors from Rutgers University.

In June 1988, I joined AUS Consultants as a Financial Analyst and am now a Principal. I am responsible for the preparation of all fair rate of return and capital structure exhibits for AUS Consultants. I have offered expert testimony on behalf of investor-owned utilities before twenty-four state regulatory commissions. The details of these appearances, as well as details of my educational background, are shown in Appendix A supplementing this testimony.

I also calculate and maintain the A.G.A. Index under contract with the American Gas Association (A.G.A.). The A.G.A. Index is a market capitalization weighted index of the common stocks of about 70 corporate members of the A.G.A.

I have co-authored an article with Frank J. Hanley, a Principal & Director of AUS Consultants entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial

Quarterly Review, Summer 1994. I also assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I am a member of the Society of Utility and Regulatory Financial Analysts (formerly the National Society of Rate of Return Analysts) serving as President for 2008-2010 and 2006-2008 and Secretary/Treasurer for 2004-2006. In 1992, I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts. This designation is based upon education, experience and the successful completion of a comprehensive written examination.

I am an associate member of the National Association of Water Companies, serving on its Finance Committee, a member of the Energy Association of Pennsylvania, formerly the Pennsylvania Gas Association, and a member of the American Finance and Financial Management Associations.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose is to provide testimony on behalf of Ohio American Water Company (Ohio American or the Company) as to the appropriate common equity cost rate which it should be afforded the opportunity to earn on the common equity financed portion of its jurisdictional rate base.

Q. WHAT IS YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. Although the Company is basing its filing upon a requested common equity cost rate of 11.25%, current capital market conditions indicate that a common

equity cost rate of 11.70% is applicable to a 40.81% common equity ratio at June 30, 2007.

The overall cost of capital is summarized in Table 1 below:

Table 1

	Capital Structure Ratios	Cost Rate	Weighted Return
Long-Term Debt	57.85%	6.17%	3.57%
Preferred Stock	1.34	8.48	0.11
Common Equity	40.81	11.70	4.77
Total	100.00%		8.46%

Q. HAVE YOU PREPARED AN EXHIBIT WHICH SUPPORTS YOUR RECOMMENDED RANGE OF OVERALL RATE OF RETURN?

A. Yes, I have. They have been marked for identification as Exhibit No. __, Schedules PMA-1 through PMA-14.

II. SUMMARY

Q. PLEASE SUMMARIZE YOUR RECOMMENDED COMMON EQUITY COST RATE.

A. My recommended common equity cost rate of 11.70% is summarized on Schedule PMA-1, page 2. Because Ohio American's common stock is not publicly traded, a market-based common equity cost rate cannot be determined directly for Ohio American. Therefore, in arriving at my recommended common equity cost rate of 11.70%, I assessed the market-based cost rates of companies of relatively similar risk, i.e., proxy group(s), for insight into a

recommended common equity cost rate applicable to Ohio American and suitable for cost of capital purposes. Using other utilities of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the Hope[1] and Bluefield[2] cases and adds reliability to the informed expert judgment used in arriving at a recommended common equity cost rate. However, no proxy group can be selected to be identical in risk to Ohio American and therefore, the proxy group's results must be adjusted to reflect the greater relative business risk of Ohio American as will be subsequently discussed in detail. The basis of selection of the proxy group will also be discussed subsequently.

As explained in more detail below, my analysis reflects current capital market conditions and results from the application of four well-tested market-based cost of common equity models, the Discounted Cash Flow (DCF) approach, the Risk Premium Model (RPM), the Capital Asset Pricing Model (CAPM), and the Comparable Earnings Model (CEM).

The results derived from each are as follows:

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[1] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

[2] Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

Table 2

	Proxy Group of Six AUS Utility Reports Water Companies
Discounted Cash Flow Model	10.89%
Risk Premium Model	11.75
Capital Asset Pricing Model	11.77
Comparable Earnings Model	13.30
Indicated Common Equity Cost Rate Before Business Risk Adjustment	11.45%
Business Risk Adjustment	0.25
Recommended Range of Common Equity Cost Rate After Adjustment for Business Risk	11.70%

After reviewing the cost rates which resulted from the application of the four models, I conclude that a common equity cost rate, before adjustment for business risk, of 11.45% is indicated based upon the application of all four models to the market data of the proxy group of six AUS Utility Reports water companies. After applying a business risk adjustment of 25 basis points (0.25%), an indicated risk adjusted common equity cost rate of 11.70% is applicable to the Company's ratemaking common equity ratio of 40.81%.

III. GENERAL PRINCIPLES

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST RATE OF 11.70%?

A. In unregulated industries, the competition of the marketplace is the principal determinant of the price of a product or service. In the case of regulated public utilities, regulation must act as a substitute for such marketplace competition.

Consequently, marketplace data must be relied upon to assure that the utility can fulfill its obligations to the public and provide adequate service at all times. This requires a level of earnings sufficient to maintain the integrity of presently invested capital and permit the attraction of needed new capital at a reasonable cost in competition with other firms of comparable risk, consistent with the fair rate of return standards established by the U.S. Supreme Court in the Hope and Bluefield cases cited previously. Consequently, in my determination of common equity cost rate, I have evaluated data gathered from the marketplace for utilities as similar in risk as possible to Ohio American.

IV. BUSINESS RISK

Q. PLEASE DEFINE BUSINESS RISK AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN.

A. Business risk incorporates all of the risks of a firm other than financial risk, which will be discussed subsequently. Examples of business risk include the quality of management, the regulatory environment, customer mix, service territory growth and the like, which have a direct bearing on earnings.

Business risk is important to the determination of a fair rate of return because the greater the level of risk, the greater the rate of return investors demand, consistent with the basic financial precept of risk and return.

Q. PLEASE DISCUSS THE BUSINESS RISKS FACING THE WATER INDUSTRY IN GENERAL.

A. The water and wastewater utility industry faces significant risks related to replacing aging transmission and distribution systems. Although Value Line

Investment Survey[3] observes the following about the water utility industry, it applies equally to the wastewater utility industry as many of the water companies followed by Value Line also have wastewater operations:

> But while, regulators are easing their stance in many areas on rate case rulings, the same cannot be said for infrastructure costs. Many of the current water systems and pipelines are pushing 100 years in age and require significant maintenance, and in many cases, complete rebuilding. Coupled with more stringent EPA requirements, the result of the highly unstable geopolitical environment, these costs are likely to remain at exorbitant levels and climb into the hundreds of millions of dollars in the coming decade. Unfortunately, many of the smaller water companies are not up to meeting the higher costs, forcing them to close up shop and sell to larger suitors.
>
> * * * * *
>
> There is not much to get excited about here. Infrastructure upkeep and capital restraints will probable [sic] offset most of the regulatory benefits we envision and thus limit the appeal of stocks in this group for both the year ahead and the 3 to 5 year pull. Likewise, the income component will likely continue to come under pressure, leaving better income bearing alternatives to chose [sic] from. But there is a new concern looming now, namely the possibility of there being a new kid on the block. Indeed, the highly anticipated IPO of American Water Works is expected sometime in the near future. The company is one of the larger operators in the Water Utility industry, raising concerns that its entry to the market may well divert investor interest. Nevertheless, we must advise any investors considering getting their feet wet in this industry to, as always, carefully review the individual reports in the next few pages before making any financial commitment.

In addition, because the water and wastewater industry is much more capital-intensive than the electric, natural gas or telephone industries, the investment required to produce a dollar of revenue is greater. And, because investor-owned water and wastewater utilities typically do not receive federal funds for

[3] Value Line Investment Survey, April 25, 2008.

infrastructure replacement, the challenge to investor-owned water and wastewater utilities is exacerbated and their access to financing is restricted, thus increasing risk.

The National Association of Regulatory Commissioners (NARUC) has also highlighted the challenges facing the water and wastewater industry stemming from its capital intensity. NARUC's Board of Directors adopted a resolution in July 2006, taking the position that[4]:

> WHEREAS, To meet the challenges of the water and wastewater industry which may face a combined capital investment requirement nearing one trillion dollars over a 20-year period, the following policies and mechanisms were identified to help ensure sustainable practices in promoting needed capital investment and cost-effective rates: a) the use of prospectively relevant test years; b) the distribution system improvement charge; c) construction work in progress; d) pass-through adjustments; e) staff-assisted rate cases; f) consolidation to achieve economies of scale; g) acquisition adjustment policies to promote consolidation and elimination of non-viable systems; h) a streamlined rate case process; i) mediation and settlement procedures; j) defined timeframes for rate cases; k) integrated water resource management; l) a fair return on capital investment; *and* m) improved communications with ratepayers and stakeholders; *and*
>
> WHEREAS, Due to the massive capital investment required to meet current and future water quality and infrastructure requirements, adequately adjusting allowed equity returns to recognize industry risk in order to provide a fair return on invested capital was recognized as crucial...
>
> RESOLVED, That the National Association of Regulatory Utility Commissions (NARUC), convened in its July 2006 Summer Meetings in Austin, Texas, conceptually supports review and consideration of the innovative regulatory policies and practices identified herein as "best practices;" *and be it further*
>
> RESOLVED, That NARUC recommends that economic regulators consider and adopt as many as appropriate of the regulatory

[4] "Resolution Supporting Consideration of Regulatory Policies Deemed as 'Best Practices'", Sponsored by the Committee on Water. Adopted by the NARUC Board of Directors, July 27, 2006.

mechanisms identified herein as best practices...

The water and wastewater utility industry also experiences lower relative depreciation rates. Lower depreciation rates, as one of the principal sources of internal cash flows for all utilities, mean that water and wastewater utility depreciation as a source of internally-generated cash is far less than for electric, natural gas or telephone utilities. Water and wastewater utilities' assets have longer lives and, hence, longer capital recovery periods. As such, water and wastewater utilities face greater risk due to inflation which results in a higher replacement cost per dollar of net plant than for other types of utilities. Water utilities experienced an average depreciation rate of 2.5% for 2006 with Ohio American experiencing a somewhat higher depreciation rate of 3.4% in 2007. In contrast, in 2006 the electric, combination electric and gas, natural gas or telephone industries, experienced average depreciation rates of 4.2%, 4.4%, 4.3% and 6.5%, respectively.

In addition, as noted by S&P[5]:

> Environmental regulations, which can be particularly stringent for water utilities, impact credit quality. Mandatory compliance with environmental legislation is often quite capital intensive. This is particularly so in the areas of wastewater discharge and drinking water quality. In most jurisdictions observed by Standard & Poor's, pressures from environmental standards is likely to increase. High compliance costs can impact a water utility's creditworthiness if their financing is up-front and their recovery is over a long period, potentially putting stress on the financial profile in the short term.
>
> A key rating consideration is the extent of the link between a water utility's legislated environmental standards and its rate-setting mechanism. Stringent environmental rules requiring

[5] Standard & Poor's, Criteria: Infrastructure Finance, Water and Wastewater Utilities, Projects and Concessions, September 1998, p. 47.

expensive upgrade and compliance costs are not necessarily a negative rating factor, so long as the utility has a flexible and transparent process for passing the costs through to consumers, and these consumers are willing and able to bear these costs. Standard & Poor's considers whether the environmental and economic regulators are acting in isolation, or perhaps have different constituencies.

Moody's[6] also notes that:

We expect that the credit quality of the investor-owned U.S. water utilities will likely deteriorate over the next several years, due to ongoing large capital spending requirements in the industry. Larger capital expenditures facing the water utility industry result from the following factors:

- Continued federal and state environmental compliance requirements;
- Higher capital investments for constructing modern water treatment and filtration facilities;
- Ongoing improvement of maturing distribution and delivery infrastructure; and
- Heightened security measures for emergency preparedness designed to prevent potential terrorist acts.

Given the overwhelming importance of protecting the public health, the water utility industry remains regulated by the federal and state regulatory agencies. As a result of this importance, the level of state regulators' responsiveness is critical in enabling the water utilities to maintain their financial integrity. In addition, when utilities are permitted a fair rate of return and timely rate adjustments to reflect the costs of providing this essential service, they will be more able to implement the necessary safeguards to protect the public health.

In addition, the water utility industry, as well as the electric and natural gas utility industries, faces the need for increased funds to finance the increasing security costs required to protect the water supply and infrastructure

[6] Moody's Investors Service, Global Credit Research, "Credit Risks and Increasing for U.S. Investor Owned Water Utilities", Special Comment, January 2004, p. 5.

from potential terrorist attacks in the post-September 11, 2001 world.

In view of the foregoing, it is clear that the water and wastewater utility industry's high degree of capital intensity coupled with the need for substantial infrastructure capital spending and increased anti-terrorism and anti-bioterrorism security spending, requires regulatory support in the form of adequate and timely rate relief, as recognized by NARUC, so water and wastewater utilities will be able to successfully meet the challenges they face.

Q. DOES OHIO AMERICAN FACE ADDITIONAL EXTRAORDINARY BUSINESS RISK?

A. Yes. Ohio American's smaller size as shown on page 3 of Schedule 1, i.e., total capital of $83.095 million at December 31, 2007 relative to average total capital of $801.941 million in 2007 for the proxy group of six AUS Utility Reports water companies indicates greater relative business risk because all else equal, size has a bearing on risk.

Q. PLEASE EXPLAIN WHY SIZE HAS A BEARING ON BUSINESS RISK.

A. Smaller companies are simply less able to cope with significant events which affect sales, revenues and earnings. In general, as will be discussed in detail subsequently, the loss of revenues from a few larger customers, for example, would have a greater effect on a small company than on a much larger company with a larger customer base. In addition, the effect of extreme weather conditions, i.e., prolonged droughts or extremely wet weather will have a greater effect upon a small operating water utility than upon the much larger, more geographically diverse holding companies.

Another factor contributing to the risk effects of size include the fact that investors demand greater returns to compensate for a lack of marketability and liquidity. Because Ohio American is the regulated utility to whose rate base the Commission's ultimately allowed overall cost of capital and fair rate of return will be applied, the relevant risk reflected in the cost of capital must be that of Ohio American, including the impact of its small size on common equity cost rate. Size is an important factor which affects common equity cost rate, and Ohio American is significantly smaller than the average company in the proxy group based upon total investor-provided capital as shown below:

Table 3

	2007 Total Capital (1) ($ millions)	Times Greater than The Company	Market Capitalization(1) ($ Millions)	Times Greater than the Company
Proxy Group of Six AUS Utility Reports Water Companies	$801.941	9.7x	$770.923	10.2x
Ohio American	83.095		71.897 (2)	

(1) From Schedule PMA-1, page 3.
(2) Based upon the average market-to-book ratio of the proxy group of six AUS Utility Reports water companies.

Table 3 above also shows the results of my study of the market capitalization of the proxy group of six AUS Utility Reports water companies. The results are shown on page 5 of Schedule PMA-1 which also summarizes the group's average market capitalization as of June 16, 2008.

Ohio American's common stock is not publicly traded. Consequently, I have assumed that if it were publicly traded, the common shares would be selling at the same market-to-book ratio as the average market-to-book ratio for the proxy group, or 216.1% on June 16, 2008. Hence, Ohio American's

market capitalization is estimated at $71.897 million based upon this average market-to-book ratio. In contrast, the market capitalization of the average AUS Utility Reports water company was $770.923 million on June 16, 2008, or 10.7 times larger than Ohio American's estimated market capitalization. It is conventional wisdom, supported by actual returns over time, that smaller companies tend to be more risky causing investors to expect greater returns as compensation for that risk.

Q. DOES THE FINANCIAL LITERATURE AFFIRM A RELATIONSHIP BETWEEN SIZE AND COMMON EQUITY COST RATE?

A. Yes. Brigham[7] states:

> A number of researchers have observed that portfolios of small-firms have earned consistently higher average returns than those of large-firms stocks; this is called "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; what *the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms.* (italics added)

V. FINANCIAL RISK

Q. PLEASE DEFINE FINANCIAL RISK AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN.

A. Financial risk is the additional risk created by the introduction of senior capital, i.e., debt and preferred stock, into the capital structure. In other words, the higher the proportion of senior capital in the capital structure, the higher the financial risk.

[7] Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition, The Dryden Press, 1989, p. 623.

Utilities formerly were considered to have much less business risk in comparison to unregulated enterprises, and, as a result, a larger percentage of debt capital was acceptable to investors.

In November 2007, S&P published its electric, gas, and water utility ratings rankings lists in a framework consistent with the manner in which it presents is rating conclusions across all other corporate sectors. As S&P stated[8]:

> Incorporating utility ratings into a shared framework to communicate the fundamental credit analysis of a company furthers the goals of transparency and comparability in the ratings process.
>
> * * *
>
> The utilities rating methodology remains unchanged, and the use of the corporate risk matrix has not resulted in any changes to ratings or outlooks. The same five factors that we analyzed to produce a business risk score in the familiar 10-point scale are used in determining whether a utility possesses an "Excellent," "Strong," "Satisfactory," "Weak," or "Vulnerable" business risk profile.

Pages 1 through 9 of Exhibit PMA-2 describe the utility bond rating process. S&P's new business risk/financial risk matrix is shown in Table 1 on page 11 of Exhibit PMA-2, while financial risk indicative ratios for utilities are shown in Table 2 on page 12. Notwithstanding the metrics published in Table 2, S&P states:

> Note that even after we assign a company a business risk and a financial risk, the committee does not arrive by rote at a rating based on the matrix. The matrix is a guide – it is not intended to convey precision in the ratings process or reduce the decision to

[8] Standard & Poor's – Ratings Direct – "U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix", November, 30, 2007, p. 2.

plotting intersections on a graph.

As shown on Schedule PMA-10, page 2, the average S&P bond rating (issuer credit rating), business risk profile and financial risk profile of the six AUS Utility Reports water companies is AA-/A+(A), Excellent and Intermediate.

Q. NEVERTHELESS, CAN ONE STILL MEASURE THE COMBINED BUSINESS RISKS, I.E., INVESTMENT RISK OF AN ENTERPRISE USING BOND RATINGS AND CREDIT RATINGS?

A. Yes, similar bond ratings/issue credit ratings reflect similar combined business risks, i.e., total risk. Although the specific business or financial risks may differ between companies, the same bond rating indicates that the combined risks are similar as the bond rating process reflects acknowledgment of all diversifiable business and financial risks in order to assess credit quality or credit risk. For example, S&P expressly indicates that the bond rating process encompasses a qualitative analysis of business and financial risks (see pages 3 through 9 of Schedule PMA-2). While not a means by which one can specifically quantify the differential in common equity risk between companies, the bond (credit) rating provides a useful means to compare/differentiate investment risk between companies because it is the result of a thorough and comprehensive analysis of all diversifiable business risks, i.e., investment risk.

VI. OHIO AMERICAN WATER COMPANY

Q. HAVE YOU REVIEWED THE FINANCIAL DATA FOR OHIO AMERICAN?

A. Yes. Ohio American is a wholly-owned subsidiary of American Water Works Company (American Water) providing water services to more than 50,000 retail customers in portions of Ashtabula, Lawrence, Richland, Marion, Morrow, Preble, Pike, Seneca, Franklin and Portage Counties.

As shown on page 1 of Exhibit PMA-3, during the five-year period ending 2007, the achieved average earnings rate on book common equity for Ohio American was a negative 5.82%, ranging between 0.52% in 2003 to a negative 10.47% in 2006. As also shown on Schedule PMA-3, page 1, during the five years ending 2007, Ohio American maintained, on average, a common equity to total permanent investor-provided capital (excluding short-term debt) ratio of 48.05%.

VII. PROXY GROUP

Q. PLEASE EXPLAIN HOW YOU CHOSE THE PROXY GROUP OF SIX AUS UTILITY REPORTS WATER COMPANIES.

A. The basis of selection for the proxy group of six AUS Utility Reports water companies were those companies that meet the following criteria: 1) they are included in the Water Company Group of AUS Utility Reports (June 2008); they have Value Line or Reuters consensus five-year EPS growth projections; and 3) they have more than 70% of their 2007 operating revenues derived from water operations. Six companies met all of these criteria. Artesian Resources Corp. was eliminated because Value Line does not publish an adjusted beta for the

Company. Connecticut Water Service, Inc., Middlesex Water Co., and Pennichuck Corp. were eliminated because Reuters was not reporting a consensus five-year EPS growth rate projection for the companies at the time of the selection of the proxy group.

Q. PLEASE DESCRIBE SCHEDULE PMA-4.

A. Schedule PMA-4 contains comparative capitalization and financial statistics for the six AUS Utility Reports water companies for the years 2003 through 2007. Page 1 contains a summary of the comparative data for the years 2003-2007. Page 2 contains notes relevant to page 1, as well as the basis of selection and names of the individual companies in the proxy group. Page 3 contains the capital structure ratios based upon total permanent capital (excluding short-term debt) by company and on average for the years 2003-2007.

During the five-year period ending 2007, the historically achieved average earnings rate on book common equity for this group averaged 9.37%. The average common equity ratio based upon total permanent capital was 51.38% for the five-years ending 2007, while the five-year average dividend payout ratio was 60.15%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 2003-2007 ranged between 3.71 and 4.40 times and averaging 4.14 times, while funds from operations relative to total debt ranged from 16.94% to 22.01% averaging 20.01%.

VIII. COMMON EQUITY COST RATE MODELS

A. The Efficient Market Hypothesis (EMH)

Q. ARE THE COST OF COMMON EQUITY MODELS YOU USE MARKET-BASED MODELS, AND HENCE BASED UPON THE EMH?

A. Yes. The DCF model is market-based in that market prices are utilized in developing the dividend yield component of the model. The RPM is market-based in that the bond ratings and expected bond yields used in the application of the RPM reflect the market's assessment of risk. In addition, the use of betas to determine the equity risk premium also reflects the market's assessment of risk as betas are derived from regression analyses of market prices. The CAPM is market-based for many of the same reasons that the RPM is market-based i.e., the use of expected bond (Treasury bond) yields and betas. The CEM is market-based in that the process of selecting the comparable risk non-utility companies is based upon statistics which result from regression analyses of market prices. Therefore, all the cost of common equity models I utilize are market-based models, and hence based upon the EMH.

Q. PLEASE DESCRIBE THE CONCEPTUAL BASIS OF THE EMH.

A. The Efficient Market Hypothesis (EMH), which is the foundation of modern investment theory, was pioneered by Eugene F. Fama[9] in 1970. An efficient market is one in which security prices reflect all relevant information all the time. This implies that prices adjust instantaneously to new information, thus reflecting

[9] Fama, Eugene F., "Efficient Capital Markets: A Review of Theory and Empirical Work". Journal of Finance, May 1970, pp. 383-417.

the intrinsic fundamental economic value of a security.[10]

The essential components of the EMH are:

A. Investors are rational and invest in assets providing the highest expected return given a particular level of risk.

B. Current market prices reflect all publicly available information.

C. Returns are independent i.e., today's market returns are unrelated to yesterday's returns.

D. Capital markets follow a random walk i.e., the probability distribution of expected returns approximates a normal distribution.

Brealey and Myers state:[11]

> When economists say that the security market is 'efficient', they are not talking about whether the filing is up to date or whether desktops are tidy. They mean that information is widely and cheaply available to investors and that all relevant and ascertainable information is already reflected in security prices.

The three forms of the EMH are:

A. The "weak" form which asserts that all past market prices and data are fully reflected in securities prices i.e., technical analysis cannot enable an investor to "outperform the market".

B. The "semistrong" form which asserts that all publicly available information is fully reflected in securities prices i.e., fundamental analysis cannot enable an investor to "outperform the market".

C. The "strong" form which asserts that all information, both public and private, is fully reflected in securities prices i.e., even insider information cannot enable an investor to "outperform the market".

The "semistrong" form of the EMH is generally held to be true because the use of insider information often enables investors to "outperform the market" and

[10] Morin, Roger A., New Regulatory Finance, Public Utility Reports, Inc., Arlington, VA, 2006, pp. 279-281.

[11] Brealey, R.A. and Myers, S.C., Principles of Corporate Finance, McGraw-Hill Publications, Inc., 1996, pp. 323-324.

earn excessive returns. The generally-accepted "semistrong" form of the EMH means that all perceived risks are taken into account by investors in the prices they pay for securities. Investors are aware of all publicly-available information, including bond ratings, discussions about companies by bond rating agencies and investment analysts as well as the various cost of common equity methodologies (models) discussed in the financial literature. In an attempt to emulate investor behavior, this means that no single common equity cost rate model should be relied upon in determining a cost rate of common equity and that the results of multiple cost of common equity models should be taken into account.

Q. IS THERE SUPPORT IN THE ACADEMIC LITERATURE FOR THE NEED TO RELY UPON MORE THAN ONE COST OF COMMON EQUITY MODEL IN ARRIVING AT A RECOMMENDED COMMON EQUITY COST RATE?

A. Yes. For example, Phillips[12] states:

> Since regulation establishes a level of authorized earnings which, in turn, implicitly influences dividends per share, *estimation of the growth rate from such data is an inherently circular process. For these reasons, the DCF model "suggests a degree of precision which is in fact not present" and leaves "wide room for controversy and argument about the level of k" [investors' capitalization or discount rate, i.e., the cost of capital].* (italics added) (p. 396)
>
> * * *
>
> Despite the difficulty of measuring relative risk, the comparable earnings standard is no harder to apply than is the market-determined standard. The DCF method, to illustrate, requires a subjective determination of the growth rate the market is contemplating. Moreover, as Leventhal has argued: *'Unless the*

[12] Charles F. Phillips, Jr., The Regulation of Public Utilities-Theory and Practice, 1993, Public Utility Reports, Inc., Arlington, VA, p. 396, 398.

utility is permitted to earn a return comparable to that available elsewhere on similar risk, it will not be able in the long run to attract capital.' (italics added) (p. 398)

Also, Morin[13] states:

> Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. *The inability of the DCF model to account for changes in relative market valuation, discussed below, is a vivid example of the potential shortcomings of the DCF model when applied to a given company.* Similarly, the inability of the CAPM to account for variables that affect security returns other than beta tarnishes its use. (italics added)
>
> No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data. (Morin, p. 428)

* * *

The financial literature supports the use of multiple methods. Professor Eugene Brigham, a widely respected scholar and finance academician, asserts:[1](footnote omitted)

> Three methods typically are used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) method, and (3) the bond-yield-plus-risk-premium approach. These methods are not mutually exclusive – no method dominates the others, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand.

Another prominent finance scholar, Professor Stewart Myers, in an early pioneering article on regulatory finance, stated:[2](footnote omitted)

> Use more than one model when you can. Because estimating

[13] Id. at pp. 428 and 430 - 431.

> the opportunity cost of capital is difficult, only a fool throws away useful information. That means you should not use any one model or measure mechanically and exclusively. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data.
>
> Reliance on multiple tests recognizes that no single methodology produces a precise definitive estimate of the cost of equity. As stated in Bonbright, Danielsen, and Kamerschen (1988), '*no single or group test or technique is conclusive.*' Only a fool discards relevant evidence. (italics in original) (Morin, p. 430)
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> * * *
>
> While it is certainly appropriate to use the DCF methodology to estimate the cost of equity, there is no proof that the DCF produces a more accurate estimate of the cost of equity than other methodologies. Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity. *It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings in contrast to its virtual disappearance in academic textbooks does not make it superior to other methods. The same is true of the Risk Premium and CAPM methodologies.* (italics added) (Morin, p. 431)

In view of the foregoing, it is clear that investors are or should be aware of all of the models available for use in determining a common equity cost rate. The EMH requires the assumption that, collectively, investors consider them all.

B. Discounted Cash Flow Model (DCF)

Q. WHAT IS THE THEORETICAL BASIS OF THE DCF MODEL?

A. The theory of the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting the cash flows at the cost of capital, or the capitalization rate. DCF theory suggests that an investor buys a stock for an expected total return

rate which is derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate). Thus, the dividend yield on market price plus a growth rate equals the capitalization rate, i.e., the total return rate expected by investors.

Q. PLEASE COMMENT ON THE APPLICABILITY OF THE DCF MODEL IN ESTABLISHING A COST OF COMMON EQUITY FOR Ohio American.

A. The extent to which the DCF is relied upon should depend upon the extent to which the cost rate results differ from those resulting from the use of other cost of common equity models because the DCF model has a tendency to mis-specify investors' required return rate when the market value of common stock differs significantly from its book value. Mathematically, because the "simplified" DCF model traditionally used in rate regulation assumes a market-to-book ratio of one, it understates/overstates investors' required return rate when market value exceeds/is less than book value. It does so because, in many instances, market prices reflect investors' assessments of long-range market price growth potentials (consistent with the infinite investment horizon implicit in the standard regulatory version of the DCF model) not fully reflected in analysts' shorter range forecasts of future growth for earnings per share (EPS) and dividends per share (DPS) accounting proxies. Thus, the market-based DCF model will result in a total annual dollar return on book common equity equal to the total annual dollar return expected by investors only when market and book values are equal, a rare and unlikely situation. In recent years, the market values of utilities' common stocks have been well in excess of their book values as shown on page 1 of

Schedule PMA-4 ranging between 221.0% and 279.42% for the proxy group of six AUS Utility Reports water companies.

Roger A. Morin has confirmed this tendency of the DCF by stating[14]:

> The third and perhaps most important reason for caution and skepticism is that application of the DCF model produces estimates of common equity cost that are consistent with investors' expected return only when stock price and book value are reasonably similar, that is when the M/B is close to unity. As shown below, application of the standard DCF model to utility stocks understates the investor's expected return when the market-to-book (M/B) ratio of a given stock exceeds unity. This is particularly relevant in the capital market environment of the 1990s and 2000s, where utility stocks are trading at M/B ratios well above unity and have been for nearly two decades. The converse is also true, that is, the DCF model overstates that investor's return when the stock's M/B ratio is less than unity. The reason for the distortion is that the DCF market return is applied to a book value rate base by the regulator, that is, a utility's earnings are limited to earnings on a book value rate base. (emphasis supplied)

Under the DCF model, the rate of return investors require is related to the price paid for a security. Thus, market prices form the basis of investment decisions and investors' expected rates of return. In contrast, a regulated utility is limited to earning on its net book value (depreciated original cost) rate base. Market values can diverge from book values for a myriad of reasons including, but not limited to, earnings per share (EPS) and dividends per share (DPS) expectations, merger / acquisition expectations, interest rates, etc. Thus, when market values are grossly disparate from their book values, a market-based DCF cost rate applied to the book value of common equity will not reflect investors' expected common equity cost rate. It will either overstate the common equity cost rate (without regard to any adjustment for flotation costs which may, at

[14] Id., at p. 434.

times, be appropriate) when market value is less than book value or understate the cost rate when market value is, as here, above book value.

This indicates the need to better match market prices with investors' longer range growth expectations embedded in those prices. However, the understatement/overstatement of investors' required return rate associated with the application of the market price-based DCF model to the book value of common equity clearly illustrates why reliance upon a single common equity cost rate model should be avoided.

Q. IS IT REASONABLE TO EXPECT THE MARKET VALUES OF UTILITIES' COMMON STOCKS TO CONTINUE TO SELL WELL ABOVE THEIR BOOK VALUES?

A. Yes. I believe that the common stocks of utilities will continue to sell substantially above their book values, because many investors, especially individuals who traditionally committed less capital to the equity markets, will likely continue to commit a greater percentage of their available capital to common stocks in view of lower interest rate alternative investment opportunities and to provide for retirement. The recent past and current capital market environment is in stark contrast to the late 1970's and early 1980's when very high (by historical standards) yields on secured debt instruments in public utilities were available. Despite the fact that the market declined significantly during late 2001 through 2003, following the September 11, 2001 tragedy and despite recent and continuing market volatility due to volatile energy prices, the stressed housing market, the credit crunch in the currently fragile U.S. economy and

rumors of an economic recession, utility stocks have continued to sell at market prices well above their book values. The sustained high market-to-book ratios have been influenced by factors other than fundamentals such as actual and reported growth in earnings per share (EPS) and dividends per share (DPS).

Traditional rate base/rate of return regulation, where a market-based common equity cost rate is applied to a book value rate base, presumes that market-to-book ratios are one. However, there is ample empirical evidence over sustained periods which demonstrate that this is an incorrect presumption. Market-to-book ratios of one are rarely the case as there are many factors affecting the market price of common stocks, in addition to earnings. Moreover, allowed ROEs have a limited effect on utilities' market/book ratios as market prices of common stocks are influenced by a number of other factors beyond the direct influence of the regulatory process.

For example, Phillips[15] states:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.'

In addition, Bonbright[16] states:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, *whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market.* In short, market prices are beyond the control, though not beyond the

[15] Id., at p. 395.

[16] James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates, 1988, Public Utilities Reports, Inc., Arlington, VA, p. 334.

> influence of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it ... would result in harmful, uneconomic shifts in public utility rate levels. (italics added)

In view of the foregoing, a mismatch results in the application of the DCF model as market prices reflect long range expectations of growth in market prices (consistent with the presumed infinite investment horizon of the standard DCF model), while the short range forecasts of growth in accounting proxies, i.e., EPS and DPS, do not reflect the full measure of growth (market price appreciation) expected in per share market value.

Q. HAVE ANY COMMISSIONS RECOGNIZED THIS TENDENCY OF THE DCF MODEL TO UNDERSTATE/OVERSTATE INVESTORS' REQUIRED RETURN RATE WHEN MARKET-TO-BOOK RATIOS ARE GREATER/LESS THAN UNITY?

A. Yes. The Pennsylvania Public Utility Commission (PA PUC) recognized this tendency in its order of August 26, 2006 in Docket No. R-00049862, et al re: The City of Lancaster – Sewer Fund when it stated:

> The ALJ recommended a market-to-book adjustment (MTB) of 65 basis points (.65%) to her recommended equity return. The ALJ reasoned that this adjustment had been adopted by the Commission in three major rate cases in the past 18 months. *See Pa. P.U.C. v. PPL Electric Utilities Corporation,* 2004 Pa. P.U.C. LEXIS 40; *Pa. P.U.C. (PPL) Pa. PUC v. Aqua Pennsylvania, Inc.,* R-00038805, (Order entered August 5, 2004) (*Aqua*); and *Pa. P.U.C.V. Pennsylvania-American Water Company*, Docket No. R-00038304 (Order entered January 29, 2004) (*PAWC*)
>
> * * * *
>
> As discussed previously herein, the ALJ recommended a MTB adjustment of 65 basis points to her unadjusted DCF starting point of 10.1 percent. We shall adopt this adjustment. First, this adjustment

is consistent with our recent orders in *PAWC, Aqua*, and *PPL*. Next, we note that *Aqua* and *PAWC* are subsidiaries of corporate parents which are publicly traded. The actual utilities operating in Pennsylvania are not publicly traded. Nevertheless, we applied the adjustment to the entities which are providing service in Pennsylvania. Thus, we reject the argument advanced by the OTS in its Exceptions that this adjustment is inappropriate because the City's operation is not an investor-owned utility. As in *PPL*, we find that adjustment is necessary because the DCF method produces the investor required return based on the current market price, not the return on the book value capitalization. With the MTB adjustment, the equity return allowance is 10.75 percent. (emphasis added)

Similarly, in 1994, the Indiana Utility Regulatory Commission (IURC), for example, recognized the tendency of the DCF model to understate the cost of equity when market value exceeds book value[17]:

> In determining a common equity cost rate, we must again recognize the tendency of the traditional DCF model, . . . to understate the cost of common equity. As the Commission stated in Indiana-Mich. Power Co. (IURC 8/24/90), Cause No. 38728, 116 PUR 4th 1, 17-18, *"the unadjusted DCF result is almost always well below what any informed financial analyst would regard as defensible, and therefore, requires an upward adjustment based largely on the expert witness's judgement."* (italics added)
>
> * * *
>
> [u]nder the traditional DCF model . . . the appropriate earnings level of the utility would not be derived by applying the DCF result to the market price of the Company's stock . . . it would be applied to the utility's net original cost rate base. *If the market price of the stock exceeds its book value, . . . the investor will not achieve the return which the model finds is necessary.* (italics added)

More recently, the PA PUC affirmed the tendency of the DCF model to mis-specify investors' required return in its Order of February 8, 2007 in Docket No. R-00061398, et al re: PPL Gas Utilities Corporation when it stated:

> The ALJ stated that the OTS and the OCA are correct that the

[17] Re: Indiana-American Water Company, Inc., Cause No. 39595, 150 PUR4th at 167-168.

Commission favors the DCF method to determine the cost of equity. However, the ALJ concluded, based on recent precedent, that the Commission consistently has adopted a leverage adjustment to compensate for the difference between market prices and book value (used in ratemaking). (*See, Aqua Pennsylvania*, 204, 234 (2004); *Pa. PUC v. PPL Electric Utilities Corp.*, Docket No. R-00049255, at 70-71 (2004); *Pa. PUC v. Pennsylvania American Water Co.*, 2002 Pa. PUC LEXIS 1; *Pa. PUC v. Phila. Suburban Water Co.*, 219 PUR4TH 272 (2002); *Pa. PUC v. Pennsylvania American Water Co.*, 231 PUR4TH 277 (2004)). According to the ALJ, these cases are persuasive that a leverage adjustment should be employed with the DCF analysis. (R.D. at 62-63).

Q. PLEASE EXPLAIN WHY A DCF-DERIVED COMMON EQUITY COST RATE MIS-SPECIFIES INVESTORS' EXPECTED COMMON EQUITY COST RATE WHEN THE MARKET/BOOK RATIO IS GREATER OR LESS THAN UNITY (100%).

A. Under the DCF model, the rate of return investors require is related to the price paid for a stock i.e., market price is the basis upon which they formulate the required rate of return. A regulated utility is limited to earning on its net book value (depreciated original cost) rate base. As discussed previously, market values differ from book values for many reasons unrelated to earnings. Thus, when market values differ significantly from book values, a market-based DCF cost rate applied to the book value of common equity will not accurately reflect investors' expected common equity cost rate. It will either overstate or understate investors' expected common equity cost rate (without regard to any adjustment for flotation costs which may, at times, be appropriate on an ad hoc basis) depending upon whether market value is less than or greater than book value.

Schedule PMA-5 demonstrates how a market-based DCF cost rate applied to a book value which is either below or above market value will either understate or overstate investors' expectations because these expectations are based on a required return on market value. As shown, there is no realistic opportunity to earn the market-based rate of return on book value. Note that in Column 1, investors expect a 10.00% return on a market price of $24.00. Moreover, as shown in Column 2, when the 10.00% return rate on market value is applied to book value which is approximately 55.5% of market value, the total annual return opportunity is just $1.333 on book value. With an annual dividend of $0.840, there is an opportunity for growth of $0.493 which translates to just 2.05% in contrast to the 6.50% growth in market price expected by investors. There is no way to possibly achieve the expected growth of $1.560 or 6.50% absent a huge cut in the annual dividend, an unreasonable expectation which would result in an extremely adverse reaction by investors because it would be a sign of extreme financial distress.

Conversely, in Column 3, where the market-to-book ratio is 80%, when the 10.00% return rate on market value is applied to a book value which is approximately 25.0% greater than market value, the total annual return opportunity is $3.000 on book value with an annual dividend of $0.840, there is an opportunity for growth of $2.160 which translates to 9.00% in contrast to the 6.50% growth in market price expected by investors.

In view of the foregoing, it is clear that the DCF model either understates or overstates investors' required cost of common equity capital when market

values exceed or are less than their underlying book values and thus multiple cost of common equity models should be relied upon when estimating investors' expectations.

Q. HAVE ANY COMMISSIONS EXPLICITLY STATED THAT THE DCF MODEL SHOULD NOT BE RELIED UPON EXCLUSIVELY?

A. Yes. As stated previously, the majority of regulatory commissions rely upon a combination of the various cost of common equity models available.

Specifically, the Iowa Utilities Board (IUB) has recognized the tendency of the DCF model to understate investors' expected cost of common equity capital when market values are significantly above their book values. In its June 17, 1994 Final Decision and Order in Re U.S. West Communications, Docket No. RPU-93-9 the IUB stated:[18]

> While the Board has relied in the past on the DCF model, in *Iowa Electric Light and Power Company*, Docket No. RPU-89-9, "Final Decision and Order" (October 15, 1990), the Board stated: '[T]he DCF model may understate the return on equity in some circumstances. This is particularly true when the market is relatively volatile and the company in question has a market-to-book ratio in excess of one." Those conditions exist in this case and the Board will not rely on the DCF return. (Consumer Advocate Ex. 367, See Tr. 2208, 2250, 2277, 2283-2284). *The DCF approach underestimates the cost of equity needed to assure capital attraction during this time of market uncertainty and volatility. The board will, therefore, give preference to the risk premium approach.* (italics added)

Also, the Hawaii Public Utilities Commission (HPUC) recognized this phenomenon in a decision dated June 30, 1992[19] in a case regarding Hawaiian

[18] Re: U.S. West Communications, Inc., Docket No. RPU-93-9, 152 PUR4th at 459.

[19] Re: Hawaiian Electric Company, Inc., Docket No. 6998, 134 PUR4th at 479.

Electric Company, Inc., when it stated:

> In this docket, as in other rate proceedings, experts disagree on the relative merits of the various methods of determining the cost of common equity. In this docket, HECO is particularly critical of the use of the constant growth DCF methodology. It asserts that method is imbued with downward bias and, thus, its use will understate common equity cost. *We are cognizant of the shortcomings of the DCF method.* There are, however, shortcomings to be found with the use of CAPM and the RP methods as well. We reiterate that, despite the problems with the use of any methodology, *all methods should be considered and that the DCF method and the combined CAPM and RP methods should be given equal weight.* (italics added)

Q. DO OTHER COST OF COMMON EQUITY MODELS ALSO CONTAIN UNREALISTIC ASSUMPTIONS AND HAVE SHORTCOMINGS?

A. Yes. That is why I am not recommending that any of the models be relied upon exclusively. I have focused on the shortcomings of the DCF model because some regulatory commissions still place excessive or exclusive reliance upon it. Although the DCF model is useful, it is not a superior methodology that supplants financial theory and market evidence based upon other valid cost of common equity models. For these reasons, no model, including the DCF, should be relied upon exclusively.

Q. PLEASE DESCRIBE THE DIVIDEND YIELD YOU USED IN YOUR APPLICATION OF THE DCF MODEL.

A. The unadjusted dividend yields are based upon an average of a recent spot date (June 16, 2008) as well as an average of the three months ended May 31, 2008, respectively, which are derived on Schedule PMA-7. The average unadjusted yield is 2.73% and the median unadjusted yield is 2.85% for the six AUS Utility Reports water companies.

Q. PLEASE EXPLAIN THE DIVIDEND GROWTH COMPONENT SHOWN ON SCHEDULE PMA-6, COLUMN 2.

A. Because dividends are paid quarterly, or periodically, as opposed to continuously (daily), an adjustment to the dividend yield must be made. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

Since the various companies in the proxy group increase their quarterly dividend at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the D_1 expression, or $D_{1/2}$. This is a conservative approach which does not overstate the dividend yield which should be representative of the next twelve-month period. Therefore, the actual average dividend yields in Column 1 on Schedule PMA-6 have been adjusted upward to reflect one-half the growth rates shown in Column 4.

Q. PLEASE EXPLAIN THE BASIS OF THE GROWTH RATES OF THE PROXY GROUP OF SIX AUS UTLITY REPORTS WATER COMPANIES WHICH YOU USE IN YOUR APPLICATION OF THE DCF MODEL.

A. Schedule PMA-8 shows that approximately 54% of the common shares of the proxy group of six AUS Utility Reports water companies are held by individuals as opposed to institutional investors. Individual investors are particularly likely to place great significance on the opinions expressed by financial information services, such as Value Line and Reuters, which are easily accessible and/or available on the Internet.

Forecasts by analysts, including Value Line, are typically limited to five years. In my opinion, investors in water utilities would have little interest in

historical growth rates beyond the most recent five years because an historical five-year period balances the five-year period for projected growth rates. Consequently, the use of five-year historical and five-year projected growth rates in earnings per share (EPS) and dividends per share (DPS) as well as the sum of internal and external growth in per share value (BR + SV) is appropriate to consider in the determination of a growth rate for use in this application of the DCF model. In addition, investors realize that analysts have significant insight into the dynamics of the industries and they analyze individual companies as well as companies' abilities to effectively manage the effects of changing laws and regulations. Consequently, I have reviewed analysts' projected growth in EPS, as well as historical and projected five-year compound growth rates in EPS, DPS and (BR + SV) for each company in the proxy group. The historical growth rates are from Value Line or are calculated in a manner similar to Value Line, while the projected growth rates in earnings are from Value Line and Reuters forecasts. Reuters growth rate estimates are not available for DPS and internal growth, and they do not include the Value Line projections.

In addition to evaluating EPS and DPS growth rates, it is reasonable to assume that investors also assess (BR + SV). The concept is based on well documented financial theory that future dividend growth is a function of the portion of the overall return to investors which is reinvested in the firm plus the sales of new common stock. Consequently, the growth component as proxied by internal and external growth is defined as follows:

$$g = BR + SV$$

Where:

B = the fraction of earnings retained by the firm, i.e., retention ratio

R = the return on common equity

S = the growth in common shares outstanding

V = the premium/discount of a company's stock price relative to its book value, i.e., one minus the complement of the market/book ratio.

Consistent with the use of five-year historical and five-year projected growth rates in EPS and DPS, I have derived five-year historical and five-year projected (BR + SV) growth. Projected EPS growth rate averages and medians are shown in Column 4 on the lower half of Schedule PMA-6, while historical and projected growth rates in DPS, EPS, and BR + SV are shown in Column 4 on the upper half of Schedule PMA-6. The bases of these growth rates are summarized for the companies in the proxy group on page 1, Schedule PMA-9. Supporting growth rate data are detailed on pages 2 through 7 of Schedule PMA-9, while pages 8 through 13 contain all of the most current Value Line Investment Survey data for the companies in the proxy group.

Q. PLEASE SUMMARIZE THE DCF MODEL RESULT.

A. As shown on Schedule PMA-6, the result of the application of the single-stage DCF model is 11.04% using the average and 10.89% when using the median value of the proxy group's results. In arriving at conclusion of indicated common equity cost rate for the proxy group, I have relied upon the median of the results of the DCF for the proxy group. I utilize the median due to the wide

range of DCF results as well as the currently extremely volatile capital market condition. In my opinion, the median is a more accurate and reliable measure of central tendency, and provides recognition to all the DCF results.

In view of the foregoing, as shown on Schedule PMA-6, the indicated common equity cost rate based upon the application of the DCF model is 10.89% for the proxy group of six AUS Utility Reports water companies.

C. The Risk Premium Model (RPM)

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.

A. Risk Premium theory indicates that the cost of common equity capital is greater than the prospective company-specific cost rate for long-term debt capital. In other words, the cost of common equity equals the expected cost rate for long-term debt capital plus a risk premium to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings.

Q. SOME ANALYSTS STATE THAT THE RPM IS ANOTHER FORM OF THE CAPM. DO YOU AGREE?

A. While there are some similarities, there is a very significant distinction between the two models. The RPM and CAPM both add a "risk premium" to an interest rate. However, the beta approach to the determination of an equity risk premium in the RPM should not be confused with the CAPM. Beta is a measure of systematic, or market, risk, a relatively small percentage of total risk (the sum of both non-diversifiable systematic and diversifiable unsystematic risk). Unsystematic risk is fully captured in the RPM through the

use of the prospective long-term bond yield as can be shown by reference to pages 3 through 9 of Schedule PMA-2, which confirm that the bond rating process involves an assessment of all business risks. In contrast, the use of a risk-free rate of return in the CAPM does not, and by definition cannot, reflect a company's specific i.e., unsystematic risk. Consequently, a much larger portion of the total common equity cost rate is reflected in the company-specific bond yield (a product of the bond rating) than is reflected in the risk-free rate in the CAPM, or indeed even by the dividend yield employed in the DCF model. Moreover, the financial literature recognizes the RPM and CAPM as two separate and distinct cost of common equity models as discussed previously.

Q. HAVE YOU PERFORMED AN RPM ANALYSIS OF COMMON EQUITY COST RATE FOR THE PROXY GROUP?

A. Yes. The results of my application of the RPM are summarized on page 1 of Schedule PMA-10 The first step is to determine the expected bond yield.

Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELD OF 6.39% APPLICABLE TO THE AVERAGE COMPANY IN THE PROXY GROUP.

A. Because the cost of common equity is prospective, a prospective yield on similarly-rated long-term debt is essential. As shown on Schedule PMA-10, page 2, although based upon only one water company, the average Moody's bond rating is A2 for the six AUS Utility Reports water companies. I relied upon a consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds for the six calendar quarters ending with the third calendar quarter of 2009 as derived from the June 1, 2008 Blue Chip Financial

Forecasts (shown on page 7 of Schedule PMA-10). As shown on Line No. 1 of page 1 of Schedule PMA-10, the average expected yield on Moody's Aaa rated corporate bonds is 5.67%. It is necessary to adjust that average yield to be equivalent to a Moody's A2 rated public utility bond. Consequently, an adjustment to the average prospective yield on Aaa rated corporate bonds of 0.72% was required. It is shown on Line No. 2, page 1 of Schedule PMA-10 and explained in Note 2 at the bottom of the page. After adjustment, the expected bond yield applicable to a Moody's A rated public utility bond is 6.39% as shown on Line No. 3, page 1 of Schedule PMA-10.

Because the proxy group of six AUS Utility Reports water companies average Moody's bond rating is A2, no adjustment is necessary to make the prospective bond yield applicable to an A2 public utility bond. Therefore, the expected specific bond yields is 6.39% for the proxy group of water companies.

Q. PLEASE EXPLAIN THE METHOD UTILIZED TO ESTIMATE THE EQUITY RISK PREMIUM.

A. I evaluated the results of two different historical equity risk premium studies, as well as Value Line's forecasted total annual market return in excess of the prospective yield on high grade corporate bonds, as detailed on pages 5, 6 and 8 of Schedule PMA-10. As shown on Line No. 3, page 5, the mean equity risk premium is 5.36% applicable to the proxy group of six AUS Utility Reports water companies. This estimate is the result of an average of a beta-derived historical equity risk premium exclusively as will be discussed subsequently as well as the mean historical equity risk premium applicable to public utilities with

bonds rated A based upon holding period returns.

The basis of the beta-derived equity risk premium applicable to the proxy group is shown on page 6 of Schedule PMA-10. The beta-determined equity risk premium should receive substantial weight because betas are derived from the market prices of common stocks over a recent five-year period. Beta is a meaningful measure of prospective relative risk to the market as a whole and is a logical means by which to allocate a relative share of the market's total equity risk premium.

The total market equity risk premium utilized is 6.20% and is based exclusively upon the long-term historical market risk premium after a review of both the long-term historical and forecasted market risk premia. Because it is my opinion that the current and recent substantial volatility in the stock market is extraordinary and not representative of the expected long-term, neither is the current forecasted market risk premium as shown on page 6 of Schedule PMA-10. To derive the historical market equity risk premium, I used the most recent Morningstar[20] data on holding period returns for the S&P 500 Composite Index and the average historical yield on Moody's Aaa and A rated corporate bonds for the period 1926-2007. The use of holding period returns over a very long period of time is useful in the beta approach. As the Ibbotson SBBI – 2008 Valuation Yearbook states[21]:

> The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable

[20] Morningstar, Inc. acquired Ibbotson Associates in 2006.

[21] Ibbotson SBBI – 2008 Valuation Yearbook – Market Results for Stocks, Bonds, Bills and Inflation – 1926 – 2007 Morningstar, Inc., 2008, pp. 82-83. Morningstar, Inc. acquired Ibbotson Associates in 2006.

average without being unduly influenced by very good and very poor short-term returns. When calculated using a long data series, the historical equity risk premium is relatively stable.[5] Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants. The magnitude of how shorter periods can affect the result will be explored later in this chapter.

Some analysts estimate the expected equity risk premium using a shorter, more recent time period on the basis that recent events are more likely to be repeated in the near future; furthermore, they believe that the 1920s, 1930s and 1940s contain too many unusual events. This view is suspect because all periods contain "unusual" events. Some of the most unusual events this century took place quite recently, including the inflation of the late 1970s and early 1980s, the October 1987 stock market crash, the collapse of the high-yield bond market, the major contraction and consolidation of the thrift industry, the collapse of the Soviet Union, the development of the European Economic Community, and the attacks of September 11, 2001.

It is even difficult for economists to predict the economic environment of the future. For example, if one were analyzing the stock market in 1987 before the crash, it would be statistically improbable to predict the impending short-term volatility without considering the stock market crash and market volatility of the 1929-1931 period.

Without an appreciation of the 1920s and 1930s, no one would believe that such events could happen. The 81-year period starting with 1926 is representative of what can happen: it includes high and low returns, volatile and quiet markets, war and peace, inflation and deflation, and prosperity and depression. Restricting attention to a shorter historical period underestimates the amount of change that could occur in a long future period. Finally, because historical event-types (not specific events) tend to repeat themselves, long-run capital market return studies can reveal a great deal about the future. Investors probably expect "unusual" events to occur from time to time, and their return expectations reflect this. (footnote omitted)

In addition, the use of long-term data in a RPM model is consistent with

the long-term investment horizon presumed by the DCF model. Consequently, the long-term arithmetic mean total return rates on the market as a whole of 12.30% and the long-term arithmetic mean yield on corporate bonds of 6.10% were used, as shown at Line Nos. 1 and 2 of page 6 of Schedule PMA-10. As shown on Line No. 3 of page 6, the resultant long-term historical equity risk premium on the market as a whole is 6.20%.

I used arithmetic mean return rates because they are appropriate for cost of capital purposes. As stated in the Ibbotson SBBI – 2008 Valuation Yearbook[22]:

> The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return.
>
> The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods. Graph 5-3 shows the realized equity risk premium for each year based on the returns of the S&P 500 and the income return on long-term government bonds. (The actual, observed difference between the return on the stock market and the riskless rate is known as the realized equity risk premium.) There is considerable volatility in the year-by-year statistics. At times the realized equity risk premium is even negative.

[22] Id., p. 77.

As Ibbotson Associates[23] states in their 1999 Yearbook:

> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which, when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values....Stated another way, the arithmetic mean is correct because an investment with uncertain returns will have a higher expected ending wealth value than an investment which earns, with certainty, its compound or geometric rate of return every year....*Therefore, in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital.* (italics added)

Ex-post (historical) total returns and equity risk premium spreads differ in size and direction over time. This is precisely why the arithmetic mean is important as it provides insight into the variance and standard deviation of returns. This prospect for variance, as captured in the arithmetic mean, provides the valuable insight needed by investors to estimate future risk when making a current investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. As discussed previously, all of the cost of common equity models, including the DCF, are premised upon the EMH, that all publicly available information is reflected in the market prices paid. If investors relied upon the geometric mean of ex-post spreads, they would have no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, *critical to risk analysis*.

[23] Ibbotson Associates, Stocks, Bonds, Bills and Inflation - 1999 Yearbook, pp. 157-158.

The basis of the forecasted market equity risk premium can be found on Line Nos. 4 through 6 on page 6 of Schedule PMA-10. It is derived from an average of the most recent 3-month (using the months of March 2008 through May 2008) and a recent spot (June 20, 2008) median market price appreciation potentials by Value Line as explained in detail in Note 1 on page 3 of Schedule PMA-11.

The average expected price appreciation is 71% which translates to 14.35% per annum and, when added to the average (similarly calculated) dividend yield of 2.15% equates to a forecasted annual total return rate on the market as a whole of 16.50%. Thus, this methodology is consistent with the use of the 3-month and spot dividend yields in my application of the DCF model. To derive the forecasted total market equity risk premium of 10.83% shown on Schedule PMA-10, page 6, Line No. 6, the June 1, 2008 forecast of about 50 economists of the expected yield on Moody's Aaa rated corporate bonds for the six calendar quarters ending with the third calendar quarter 2009 of 5.67% from Blue Chip Financial Forecasts was deducted from the Value Line total market return of 16.50%. The calculation resulted in an expected market risk premium of 10.83%.

However, because I believe the current and recent substantial volatility in the stock market is extraordinary and not representative of the expected long-term, in this instance, I will not rely upon the forecasted market equity risk premium but rather, will rely upon this historical long-term arithmetic market equity risk premium of 6.20%.

On page 9 of Schedule PMA-10, the most current Value Line betas for the companies in the proxy group is shown. Applying the median beta of the proxy group, consistent with my reliance upon the median DCF results as previously discussed, to the market equity risk premium of 6.20% results in a beta adjusted equity risk premium of 6.20% for the proxy group of six AUS Utility Reports water companies as shown on Schedule PMA-10, page 6, Line No. 9.

A mean equity risk premium of 4.51% applicable to companies with A rated public utility bonds was calculated based upon holding period returns from a study using public utilities, as shown on Line No. 2, page 5 of Schedule PMA-10, and detailed on page 8 of the same schedule.

The equity risk premia applicable to the proxy group of six AUS Utility Reports water companies are the averages of the beta-derived premia and that based upon the holding period returns of public utilities with A rated bonds, as summarized on Schedule PMA-10, page 5, i.e., 5.36%.

Q. WHAT IS THE INDICATED RPM COMMON EQUITY COST RATE?

A. It is 11.75% for the six AUS Utility Reports water companies as shown on Schedule PMA-10, page 1.

Q. SOME CRITICS OF THE RPM MODEL CLAIM THAT ITS WEAKNESS IS THAT IT PRESUMES A CONSTANT EQUITY RISK PREMIUM. IS SUCH A CLAIM VALID?

A. No. The equity risk premium varies inversely with interest rate changes, although not in tandem with those changes. This presumption of a constant

equity risk premium is no different than the presumption of a constant "g", or growth component, in the DCF model. If one calculates a DCF cost rate today, the absolute result "k", as well as the growth component "g", would invariably differ from a calculation made just one or several months earlier. This implies that the "g" does change, although in the application of the standard DCF model, the "g" is presumed to be constant. Hence, there is no difference between the RPM and DCF models in that both models assume a constant component, but in reality, these components, the "g" and the equity risk premium both change.

As Morin[24] states with respect to the DCF model:

> It is not necessary that *g* be constant year after year to make the model valid. *The growth rate may vary randomly around some average expected value. Random variations around trend are perfectly acceptable, as long as the mean expected growth is constant.* The growth rate must be 'expectationally constant' to use formal statistical jargon. (italics added)

The foregoing confirms that the RPM is similar to the DCF model. Both assume an "expectationally constant" risk premium and growth rate, respectively, but in reality both vary (change) randomly around an arithmetic mean. Consequently, the use of the arithmetic mean, and not the geometric mean is confirmed as appropriate in the determination of an equity risk premium as discussed previously.

D. The Capital Asset Pricing Model (CAPM)

Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

A. CAPM theory defines risk as the covariability of a security's returns with the

[24] Id., p. 256.

market's returns. This covariability is measured by beta ("β"), an index measure of an individual security's variability relative to the market. A beta less than 1.0 indicates lower variability while a beta greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all other risk, i.e., all non-market or unsystematic risk, can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. The CAPM presumes that investors require compensation for risks that cannot be eliminated through diversification. Systematic risks are caused by macroeconomic and other events that affect the returns on all assets. Essentially, the model is applied by adding a risk-free rate of return to a market risk premium. This market risk premium is adjusted proportionately to reflect the systematic risk of the individual security relative to the market as measured by beta. The traditional CAPM model is expressed as:

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

Where:

R_s	=	Return rate on the common stock
R_f	=	Risk-free rate of return
R_m	=	Return rate on the market as a whole
β	=	Adjusted beta (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have confirmed its validity. These tests have measured the extent to which security returns and betas are related as predicted by the CAPM. However, Morin observes that while the results support the notion that beta is related to security returns, it has been

determined that the empirical Security Market Line (SML) described by the CAPM formula is not as steeply sloped as the predicted SML. Morin[25] states:

> With few exceptions, the empirical studies agree that ... low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,\beta(R_M - R_F) + (1-x)\,\beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. The value of x that best explains the observed relationship Return = 0.0829 + 0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$[26]

In view of theory and practical research, I have applied both the traditional CAPM and the empirical CAPM to the companies in the proxy group and averaged the results.

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN.

A. As shown at the top of column 3 on page 2 of Schedule PMA-11, the risk-free rate adopted for both applications of the CAPM is 4.67%. It is based upon the average consensus forecast of the reporting economists in the June 1, 2008 Blue Chip Financial Forecasts as shown in Note 2, page 3, of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the third

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[25] Id., at p. 175.

[26] Id., at p. 190.

calendar quarter 2009.

Q. WHY IS THE PROSPECTIVE YIELD ON LONG-TERM U.S. TREASURY BONDS APPROPRIATE FOR USE AS THE RISK-FREE RATE?

A. The yield on long-term T-Bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on A rated public utility bonds, and is consistent with the long-term investment horizon inherent in utilities' common stocks. Therefore, it is consistent with the long-term investment horizon presumed in the standard DCF model employed in regulatory ratemaking. As Morin[27] states:

> As a proxy for the risk-free rate, long-term rates are the relevant benchmarks when determining the cost of common equity rather than short-term or intermediate-term interest rates.[4(footnote omitted)] There are several reasons for this, both conceptual and practical.
>
> At the conceptual level, because common stock is a long-term investment and because the cash flows to investors in the form of dividends last indefinitely, the yield on very long-term government bonds, namely, the yield on 30-year Treasury bonds, is the best measure of the risk-free rate for use in the CAPM[5(footnote omitted)] . . . . The expected common stock return is based on long-term cash flows, regardless of an individual's holding time period.
>
> On the grounds of stability and consistency, the yields on long-term Treasury bonds match more closely with expected commons tock returns. Finally, yields on 90-day Treasury Bills typically do not match the investor's planning horizons. Equity investors generally have an investment horizon far in excess of 90 days.
>
> At the practical level, short-term rates are volatile, fluctuate widely, and are subject to more random disturbances than are long-term rates, leading to volatile and unreliable equity return estimates. Short-term rates are also largely administered rates.

[27] Id., at p. 151.

> For example, Treasury Bills are used by the Federal Reserve as a policy vehicle to stimulate the economy and to control the money supply, and are used by foreign governments, companies, and individuals as a temporary safe harbor for money.

In addition, as noted in the Ibbotson SBBI - 2008 Valuation Yearbook[28]:

> The horizon of the chosen Treasury security should match the horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury Note would not be appropriate since the Company will continue to exist beyond those five years.

In conclusion, the average expected yield on 30-year Treasury Bonds is the appropriate proxy for the risk-free rate in the CAPM because it is less volatile than yields on Treasury Bills, is almost risk-free as noted by Morin above and is consistent with the long-term investment horizon implicit in common stocks.

Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED EQUITY RISK PREMIUM FOR THE MARKET.

A. First, I estimate investors' expected total return rate for the market. Then I estimate the expected risk-free rate which I subtract from the expected total return rate for the market. The result is an expected equity risk premium for the market, some proportion of which must be allocated to the companies in the proxy group through the use of beta. As a measure of risk relative to the market as a whole, the beta is an appropriate means by which to apportion the

[28] Id., p. 59.

market risk premium to a specific company or group. The total market equity risk premium utilized was 7.1% and, in this instance, is based upon the long-term historical market risk premia because, in my opinion, the current and recent substantial volatility in the stock market is extraordinary and not representative of the expected long-term.

The basis of the projected median market equity risk premium is explained in detail in Note 1 on page 3 of Schedule PMA-11. As previously discussed, it is derived from an average of the most recent 3-month (using the months of March 2008 through May 2008) and a recent spot (June 20, 2008) 3 - 5 year median total market price appreciation projections from Value Line, and the long-term historical average from Morningstar. The appreciation projections by Value Line plus average dividend yield equate to a forecasted annual total return rate on the market of 16.50%. The long-term historical return rate of 12.30% on the market as a whole is from the Ibbotson SBBI – 2008 Valuation Yearbook. In each instance, the relevant risk-free rate was deducted from the total market return rate. For example, from the Value Line projected total market return of 16.50%, the forecasted average risk-free rate of 4.67% was deducted indicating a forecasted market risk premium of 11.83%. From the Ibbotson Associates' long-term historical total return rate of 12.30%, the long-term historical income return rate on long-term U.S. Government Securities of 5.20% was deducted indicating an historical equity risk premium of 7.10%. Thus, the average of the projected and historical total market risk premia of 11.83% and 7.10%, respectively, is 9.47%. However, as stated

previously, I will rely upon the historical market equity risk premium of 7.10%.

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE TRADITIONAL AND EMPIRICAL CAPM TO THE PROXY GROUP?

A. As shown on Schedule PMA-11, Line No. 1 of page 1, the traditional CAPM cost rate is 11.77% for the proxy group of six AUS Utility Reports water companies. And, as shown on Line No. 2 of page 1, the empirical CAPM cost rate is 11.77%. The traditional and empirical CAPM cost rates are shown individually by company on page 2 of Schedule PMA-11. As with the DCF results discussed previously, and for the same reasons, namely the wide range of results and the current extremely volatile capital markets, I rely upon the median results of the traditional CAPM and ECAPM for the proxy group. As shown on Line No. 3 on page 1, the CAPM cost rate applicable to the proxy group of six AUS Utility Reports water companies is 11.77% based upon the traditional and empirical CAPM.

Q. SOME CRITICS OF THE ECAPM MODEL CLAIM THAT USING ADJUSTED BETAS IN A TRADITIONAL CAPM AMOUNTS TO USING AN ECAPM. IS SUCH A CLAIM VALID?

A. No. Using adjusted betas in a CAPM analysis is not equivalent to the ECAPM. Betas are adjusted because of the regression tendency of betas to converge toward 1.0 over time, i.e., over successive calculations of beta. As discussed previously, numerous studies have determined that the Security Market Line (SML) described by the CAPM formula at any given moment in time is not as

steeply sloped as the predicted SML. Morin[29] states:

> Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend [sic], an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary.

Moreover, the slope of the Security Market Line (SML) should not be confused with beta. As Eugene F. Brigham, finance professor emeritus and the author of many financial textbooks states[30] :

> The slope of the SML reflects the degree of risk aversion in the economy – the greater the average investor's aversion to risk, then (1) the steeper is the slope of the line, (2) the greater is the risk premium for any risky asset, and (3) the higher is the required rate of return on risky assets.[12]
>
> [12]Students sometimes confuse beta with the slope of the SML. This is a mistake. As we saw earlier in connection with Figure 6-8, and as is developed further in Appendix 6A, beta does represent the slope of a line, but *not* the Security Market Line. This confusion arises partly because the SML equation is generally written, in this book and throughout the finance literature, as $k_i = R_F + b_i(k_M - R_F)$, and in this form b_i looks like

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29 Id., at p. 191.

30 Eugene F. Brigham, Financial Management – Theory and Practice, 4th Ed., The Dryden Press, 1985, p. 203.

> the slope coefficient and ($k_M - R_F$) the variable. It would perhaps be less confusing if the second term were written ($k_M - R_F$)b_i, but this is not generally done.

In addition, regulatory support for the ECAPM can be found in the New York Public Service Commission's Generic Financing Docket, Case 91-M-0509. In addition, the Regulatory Commission of Alaska (RCA) in its Order No. 151 in Docket No. P-97-4 re: In the Matter of the Correct Calculation and Use of Acceptable Input Data to Calculate the 1997, 1998, 1999, 2000, 2001 and 2002 Tariff Rates for the Intrastate Transportation of Petroleum over the TransAlaska Pipeline System noted:

> Although we primarily rely upon Tesoro's recommendation, we are concerned, however, about Tesoro's CAPM analysis. Tesoro averaged the results it obtained from CAPM and ECAPM while at the same time providing empirical testimony[604] (footnote omitted) that the ECAPM results are more accurate then [sic] traditional CAPM results. The reasonable investor would be aware of these empirical results. Therefore, we adjust Tesoro's recommendation to reflect only the ECAPM result.

In view of the foregoing, using adjusted betas in an ECAPM analysis is not incorrect, nor inconsistent with the financial literature. Rather, the use of the traditional CAPM results in an understated estimate of the cost of common equity capital for a utility with an adjusted beta below 1.00. And notwithstanding regulatory support for the use of only the ECAPM, my CAPM analysis, which includes both the traditional CAPM and the ECAPM, is a conservative approach resulting in a reasonable estimate of the cost of common equity.

E. Comparable Earnings Model (CEM)

Q. PLEASE DESCRIBE YOUR APPLICATION OF THE COMPARABLE EARNINGS MODEL AND HOW IT IS USED TO DETERMINE COMMON EQUITY COST RATE.

A. My application of the CEM is summarized on Schedule PMA-12 which consists of nine pages. Pages 1 through 4 show the CEM results for the proxy group of six AUS Utility Reports water companies. Supporting data are shown on pages 5 through 8 and page 9 contains notes related to pages 1 through 8.

The comparable earnings approach is derived from the "corresponding risk" standard of the landmark cases of the U.S. Supreme Court. Therefore, it is consistent with the Hope doctrine that the return to the equity investor should be commensurate with returns on investments in other firms having corresponding risks.

The CEM is based upon the fundamental economic concept of opportunity cost which maintains that the true cost of an investment is equal to the cost of the best available alternative use of the funds to be invested. The opportunity cost principle is also consistent with one of the fundamental principles upon which regulation rests: that regulation is intended to act as a surrogate for competition and to provide a fair rate of return to investors.

The CEM is designed to measure the returns expected to be earned on the book common equity, in this case net worth, of similar risk enterprises. Thus, it provides a direct measure of return, since it translates into practice the competitive principle upon which regulation rests. In my opinion, it is

inappropriate to use the achieved returns of regulated utilities of similar risk because to do so would be circular and inconsistent with the principle of equality of risk with non-price regulated firms.

The difficulty in application of the CEM is to select a proxy group of companies which are similar in risk, but are not price regulated utilities. Consequently, the first step in determining a cost of common equity using the comparable earnings model is to choose an appropriate proxy group of non-price regulated firms. The proxy group should be broad-based in order to obviate any company-specific aberrations. As stated previously, utilities need to be eliminated to avoid circularity since the returns on book common equity of utilities are substantially influenced by regulatory awards and are therefore not representative of the returns that could be earned in a truly competitive market.

Q. PLEASE DESCRIBE YOUR APPLICATION OF THE CEM.

A. My application of the CEM is market-based in that the selection of non-price regulated firms of comparable risk is based upon statistics derived from the market prices paid by investors.

I have chosen a proxy group of domestic, non-price regulated firms to reflect both the systematic and unsystematic risks of the proxy group of six AUS Utility Reports water companies. The proxy group of two hundred eighteen non-utility companies similar in risk to the proxy group of six AUS Utility Reports water companies are listed on pages 1 through 4, Schedule PMA-12. The criteria used in the selection of these proxy companies were that they be domestic non-utility companies and have a meaningful rate of return on

net worth, common equity or partners' capital reported in Value Line (Std. Ed.) for each of the five years ended 2007, or projected for 2011-2013. Value Line betas were used as a measure of systematic risk. The standard error of the regression was used as a measure of each firm's unsystematic or specific risk. The standard error of the regression reflects the extent to which events specific to a company's operations will affect its stock price and, therefore, is a measure of diversifiable, unsystematic, company-specific risk. *In essence, companies which have similar betas and standard errors of the regressions, have similar investment risk, i.e., the sum of systematic (market) risk as reflected by beta and unsystematic (business and financial) risk, as reflected by the standard error of the regression, respectively. Those statistics are derived from regression analyses using market prices which, under the EMH reflect all relevant risks. The application of these criteria results in proxy groups of non-price regulated firms similar in risk to the average company in each proxy group.*

Using a Value Line, Inc. proprietary database dated June 16, 2008, the proxy group of two hundred eighteen non-price regulated companies were chosen based upon ranges of unadjusted beta and standard error of the regression. The ranges were based upon the average standard deviations of the unadjusted beta and the average standard error of the regression for the proxy group of six AUS Utility Reports water companies.

The six AUS Utility Reports water companies have an average unadjusted beta of 0.91 whose standard deviation is 0.1219 as of June 16,

2008, as shown on page 4, Schedule PMA-12. The average standard error of the regression is 3.2465 as also shown on page 4 of Schedule PMA-11, with a standard deviation of 0.1426 as derived in Note 5, page 9. Ranges of unadjusted betas from 0.54 to 1.28 and of standard errors of the regression from 2.8187 to 3.6743 were used to select the proxy group of two hundred eighteen domestic non-utility companies comparable to the profile of the proxy group of six AUS Utility Reports water companies as can be gleaned from pages 1 through 4 and explained in Note 1 on page 9 of Schedule PMA-12. These ranges are based upon the proxy group's average unadjusted beta of 0.91 and average standard error of the regression of 3.2465 plus or minus three standard deviations of beta (0.1219 x 3 = 0.3657) and standard error of the regressions (0.1426 x 3 = 0.4278). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

I believe that this methodology for selecting non-price regulated firms of similar total risk (i.e., non-diversifiable systematic and diversifiable non-systematic risk) is meaningful and effectively responds to the criticisms normally associated with the selection of firms presumed to be comparable in total risk. This is because the selection of non-price regulated companies comparable in total risk is based upon regression analyses of market prices which reflect investors' assessment of all risks, diversifiable and non-diversifiable. Thus, the empirical selection process results in companies comparable in both systematic and unsystematic risks, i.e., total risk.

Once a proxy group of non-price regulated companies are selected, it is then necessary to derive returns on book common equity, net worth or partners' capital for the companies in the group. I have measured these returns using the rate of return on net worth, common equity or partners' capital reported by Value Line (Standard Edition). It is reasonable to measure these returns over both the most recent historical five-year period as well as those projected over the ensuing five-year period.

Q. WHAT IS YOUR CONCLUSION OF CEM COST RATE?

A. My conclusion of CEM cost rate is based upon the average of the median of all of the five-year median historical and projected returns on book common equity, net worth or partners' capital are 12.80% historical, 14.50% projected for the proxy group of six AUS Utility Reports water companies as shown on page 4 of Schedule PMA-12. As with the DCF and CAPM results discussed previously, I have again relied upon median and for the same reasons, namely, the wide range of returns and the extreme volatility of the current capital markets. After I apply a test of significance (Student's t-statistic) to determine whether any of the projected returns are significantly different from their respective means at the 95% confidence level, the projected means of several companies have been excluded. After excluding these outliers, my conclusion of CEM cost rate is 13.30% for the six water companies.

IX. CONCLUSION OF COMMON EQUITY COST RATE

Q. WHAT IS YOUR RECOMMENDED COMMON EQUITY COST RATE?

A. It is 11.70% based upon the common equity cost rates resulting from all four

cost of common equity models consistent with the EMH which logically mandates the use of multiple cost of common equity models as adjusted for Ohio American's greater business risk.

In formulating my recommended common equity cost rate range of 11.70%, I reviewed the results of the application of four different cost of common equity models, namely, the DCF, RPM, CAPM, and CEM for the proxy group. I employ all four cost of common equity models as primary tools in arriving at my recommended common equity cost rate range because no single model is so inherently precise that it can be relied upon solely, to the exclusion of other theoretically sound models. As discussed above, all four models are based upon the Efficient Market Hypothesis (EMH), and therefore, have application problems associated with them. The EMH, as also previously discussed, requires the assumption that investors rely upon multiple cost of common equity models. Moreover, as demonstrated in this testimony, the prudence of using multiple cost of common equity models is supported in the financial literature. Therefore, none should be relied upon exclusively to estimate investors' required rate of return on common equity.

In a market environment where market value deviates significantly from book value (lower or higher), sole reliance on the simplified DCF model is particularly problematic for a regulated utility because its application results in both a practical and theoretical overstatement or understatement, respectively, of investors' required rate of return. Investors expect to achieve their required rate of return based upon dividends received and appreciation in market price.

This testimony has shown that market prices are significantly influenced by factors other than earnings per share (EPS) and dividends per share (DPS). Thus, because it is necessary to use accounting proxies for growth in the DCF model (such as EPS, DPS, or their derivative, internal growth), that model does not reflect the full extent of market price growth expected by investors. Market prices reflect other factors affecting growth not accounted for in the standard regulatory version of the DCF model such as an increase in the market value per share due to expected increases in price/earnings multiples and less obvious factors included in the long-range goals of investors. For these reasons, sole reliance on the DCF model should be avoided. In fact, as discussed in detail above, state commissions in Iowa, Indiana, Hawaii, and Pennsylvania have questioned their previous primary reliance upon the DCF, having explicitly recognized this tendency of the DCF model to understate the common equity cost rate when, as now, market prices significantly exceed book values.

The results of the four cost of common equity models applied to the proxy group of six AUS Utility Reports water companies are shown on Schedule PMA-1, page 2 and summarized below:

Table 4

	Proxy Group of Six AUS Utility Reports Water Companies
Discounted Cash Flow Model	10.89%
Risk Premium Model	11.75
Capital Asset Pricing Model	11.77
Comparable Earnings Model	13.30
Indicated Common Equity Cost Rate Before Business Risk Adjustment	11.45%
Business Risk Adjustment	0.25
Recommended Range of Common Equity Cost Rate After Adjustment for Business Risk	11.70%

Based upon these common equity cost rate results, I conclude that a common equity cost rate of 11.45% is indicated based upon the use of multiple common equity cost rate models applied to the market data of the proxy group and before any adjustment for Ohio American's greater relative business risk as shown on Line No. 5, page 2 of Schedule PMA-1.

Q. IS THERE A WAY TO QUANTIFY A BUSINESS RISK ADJUSTMENT DUE TO OHIO AMERICAN'S SMALL SIZE RELATIVE TO THE PROXY GROUP?

A. Yes. As discussed previously, Ohio American has greater business risk than the average proxy group company because of its smaller size relative to the proxy group, whether measured by book capitalization or the market capitalization of common equity (estimated market value for Ohio American, whose common stock is not traded). Therefore, it is necessary to upwardly adjust the common equity cost rate of 11.45% based upon the proxy group.

Based upon Ohio American's size, an adjustment of 3.62% (362 basis points) is necessary to reflect its size relative to the market-based common equity cost rates of the six AUS Utility Reports water companies. This adjustment is based upon data contained in the Ibbotson SBBI – 2008 Valuation Yearbook. The determinations are based on the size premia for decile portfolios of New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and NASDAQ listed companies for the 1926-2007 period and related data shown on pages 3 through 18 of Schedule PMA-1. The average size premium for the decile in which the proxy group falls has been compared to the average size premium for the 10th decile in which Ohio American would fall if its stock were traded and sold at the June 16, 2008 average market/book ratio of 216.1% experienced by the proxy group. As shown on page 3 of Schedule PMA-1, the size premium spread between Ohio American and the six AUS Utility Reports water companies is 3.62%. Page 4 contains notes relative to page 3. Page 5 contains data in support of page 3 while pages 6 through 18 of Schedule PMA-1 contain relevant information from the Ibbotson SBBI – 2008 Valuation Yearbook discussed previously.

Consequently, a business risk adjustment of 3.62% is indicated based upon the six AUS Utility Reports water companies However, I will make a conservatively reasonable business risk adjustment of 0.25% (25 basis points) as shown on Line No. 6 on page 2 of Schedule PMA-1 to the indicated common equity cost rate of 11.45%. I have restricted this adjustment to only 25 basis points. This results in a business risk adjusted common equity cost

rate of 11.70% as shown on Line No. 7. In my opinion, such a cost rate range is both reasonable and conservative and will provide Ohio American with sufficient earnings to enable it to attract necessary new capital.

X. COMMENTS UPON THE REPORT OF THE STAFF OF THE PUBLIC UTILITIES COMMISSION OF OHIO

Q. DO YOU HAVE ANY COMMENTS UPON THE RATE OF RETURN SECTION OF THE STAFF OF PUCO'S OHIO REPORT (STAFF REPORT)?

A. Yes. I have several comments regarding Staff's Comparable Group Companies, Staff's application of the CAPM and Staff's application of the DCF.

Q. WHAT ARE YOUR COMMENTS REGARDING STAFF'S COMPARABLE GROUP COMPANIES?

A. Staff selected publicly traded water companies listed with MSN Investor with capitalization above $250 million. Thus, Staff's group is significantly less business risky than Ohio American, which at year-end 2007 had total capitalization of $83.112 as shown on page 3 of Schedule PMA-1. Because Staff's recommended common equity cost rate is based upon the market data of a group of companies which is less business risky than Ohio American, Staff's recommended common equity cost rate understates the true common equity cost rate to Ohio American. An indication of the extent to which Staff's recommended common equity cost rate understates the true common equity cost rate is derived in Schedule PMA-13.

Based upon Ohio American's small relative size, an adjustment of 3.62% (362 basis points) is indicated based upon data contained in Chapter 7 entitled, "Firm Size and Return" from Ibbotson Associates' Ibbotson SBBI –

2008 Valuation Yearbook. The determinations are based upon the size premia for decile portfolios of NYSE, AMEX and NASDAQ listed companies for the 1926-2007 period discussed previously. The average size premium for the 8th decile in which Staff's group of comparable water companies falls, has been compared to the average size premium for the 10th decile in which Ohio American would fall if its stock were traded and sold at the June 16, 2008 average market/book ratio of 198.1% experienced by Staff's comparable water companies. As shown on page 1 of Schedule PMA-13, the size premium spread between Staff's group of comparable water companies and Ohio American is 3.62%. Although the Ibbotson data indicate that the appropriate spread is 3.62% between the proxy group of six AUS Utility Reports water companies and Ohio American as shown on page 3 of Schedule PMA-1, in my opinion, a conservative adjustment of only approximately 0.25% (25 basis points) to reflect the business risk differential between Ohio American and the comparable group is appropriate. I recommend the same 0.25% (25 basis points) adjustment to Staff's recommended common equity cost rate. Adding such an adjustment to Staff's recommended common equity cost rate range yields common equity cost rate range of 10.73% - 11.77% which reflects Ohio American's greater relative business risk.

Q. PLEASE DISCUSS STAFF'S APPLICATION OF THE CAPM.

A. Staff's application of the CAPM is flawed in five respects: 1) Staff utilized an historical yield on U.S. Treasury bonds as the risk free rate instead of the more

appropriate forecasted rate; 2) Staff inappropriately averaged the historical yield on 10-year U.S. Treasury bonds with the historical yield on 30-year U.S. Treasury bonds; 3) Staff incorrectly calculated the market equity risk premium using the total return on long-term U.S. Treasury bonds and not the income return as recommended by Ibbotson, the source of Staff's historical market equity risk premium; 4) Staff incorrectly utilized only the historical market equity risk premium without evaluating the prospective market equity risk premium, notwithstanding the fact that, in my opinion, the current forecasted market equity risk premium is not representative of the expected long-term, as discussed previously; and 5) Staff did not include an Empirical CAPM analysis to reflect the fact that the empirical Security Market Line (SML) described by the CAPM is not as steeply sloped as the predicted SML as discussed previously. At the end of this discussion, I will provide a CAPM analysis which corrects for these flaws.

Q. PLEASE DISCUSS STAFF'S USE OF THE HISTORICAL YIELD ON U.S. TREASURY BONDS.

A. Ratemaking and the cost of capital are both prospective. Therefore it is appropriate to utilize a forecasted yield on U.S. Treasury bonds as the risk-free rate in a CAPM analysis. As discussed previously, the yield on long-term U.S. Treasury bonds is appropriate for use in a CAPM analysis because it is almost risk-free and its term is consistent with the long-term cost of capital to public utilities as measured by the yields on A rated public utility bonds. It is also consistent with the long-term investment horizon inherent in public utilities' common stocks. Hence, it is consistent with the long-term investment horizon

presumed in the standard DCF model employed in regulatory ratemaking. Currently, the average consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six calendar quarters ending with the third quarter 2009 by the 50 reporting economists in the June 1, 2008 Blue Chip Financial Forecasts (Blue Chip) as shown in Note 2, page 3 of Schedule PMA-12, is 4.67%.

Q. PLEASE DISCUSS STAFF'S USE OF THE AVERAGE HISTORICAL YIELD ON 10-YEAR AND 30-YEAR U.S. TREASURY BONDS.

A. Because it is appropriate to utilize the yield on long-term U.S. Treasury bonds in a CAPM analysis, use of the yield on 10-year U.S. Treasury bonds is not consistent with the long-term cost of capital to public utilities described above. Nor is it consistent with the long-term investment horizon inherent in public utilities' common stocks and presumed in the standard DCF model.

As also discussed previously, because both ratemaking and the cost of capital are prospective, it is clear that the average expected yield on long-term U.S. Treasury bonds is the appropriate proxy for the risk-free rate in the CAPM because it is less volatile than the yields on Treasury securities of shorter duration, is almost risk-free as noted by Morin above and is consistent with the long-term investment horizon implicit in common stocks as noted by Ibbotson, as well as being prospective.

Q. PLEASE DISCUSS STAFF'S USE OF THE TOTAL RETURN ON LONG-TERM U.S. TREASURY BONDS IN ITS CALCULATION OF THE MARKET EQUITY RISK PREMIUM.

A. Staff's market equity risk premium of 6.5% is based upon the difference between the arithmetic mean long-term (1926-2006) total return on large company stocks and long-term (1926-2006) total return on long-term government bonds as published by Ibbotson SBBI – 2007 Valuation Yearbook. Note that the Ibbotson SBBI – 2008 Valuation Yearbook, published in March 2008, shows the same market equity risk premium of 6.5%. Nevertheless, it is not appropriate to use the Ibbotson-derived spread of arithmetic mean total returns on large company stocks and long-term total returns on long-term government bonds in a CAPM analysis. It is inconsistent for Staff to utilize Ibbotson's data and then, to not follow Ibbotson's recommendation that the income return on a given Treasury security be used for calculating the equity risk premium. Ibbotson state the following on pages 75-76 of the Ibbotson SBBI - 2008 Valuation Yearbook:

> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[2] (footnote omitted)

Thus, the appropriate historical market equity risk premium is the difference in the arithmetic mean long-term (1926-2007, not 1926-2006) total return on

large company stocks of 12.3% and the arithmetic mean long-term (1926-2007) income return on long-term government bonds of 5.2% from the Ibbotson SBBI – 2008 Valuation Yearbook, or 7.1% (7.1% = 12.3% - 5.2%) and not 6.5% as used by Staff.

Q. PLEASE DISCUSS STAFF'S EXCLUSIVE USE OF AN HISTORICAL MARKET EQUITY RISK PREMIUM.

A. As discussed previously, relative to Staff's use of historical yields in its calculation of the risk-free rate, ratemaking and the cost of capital are both prospective. Therefore, it is appropriate to couple the use of the arithmetic mean historical market equity risk premium with a forecasted market equity risk premium, such as can be derived from Value Line Investment Survey and Blue Chip. Moreover, use of the forecasted market equity risk premium based upon Value Line is consistent with Staff's use of Value Line betas in its CAPM analysis. However, as discussed previously, the current and recent substantial volatility in the stock market is extraordinary and not representative of the expected long-term. Hence, at this time, given current capital market conditions, in my opinion, the current market equity risk premium is also not representative of the expected long-term and thus, not suitable for cost of capital purposes at this time.

In view of the foregoing, the historical arithmetic mean 7.1% market equity risk premium is currently appropriate for use in a CAPM analysis.

Q. YOU PREVIOUSLY STATED THAT STAFF ERRED BY NOT APPLYING THE EMPIRICAL CAPITAL ASSET PRICING MODEL. PLEASE COMMENT.

A. Staff relied exclusively upon the traditional CAPM. As discussed previously, numerous tests of the CAPM have confirmed its validity. These tests have measured the extent to which security returns and betas are related as predicted by the CAPM. However, as also noted previously, Morin, in New Regulatory Finance, observes that, while the results support the notion that beta is related to security returns, it has been determined that the empirical Security Market Line (SML) described by the CAPM is not as steeply sloped as the predicted SML. Therefore, given both theory and practical research, it is appropriate to apply both the traditional CAPM and the empirical CAPM and to average the results.

Schedule PMA-14 presents a CAPM analysis correcting the flaws in Staff's application of the CAPM discussed above and reflects the following: 1) the correct use of a forecasted yield on 30-year Treasury bonds as the risk-free rate; 2) the correct use of 30-year, i.e., long-term, Treasury bonds as the risk-free rate; 3) the correct use of the historical long-term arithmetic mean income return on long-term government bonds in deriving the historical market equity risk premium; 4) consideration of both the historical long-term arithmetic mean market equity risk premium and the forecasted market equity risk premium; and 5) the inclusion of an ECAPM analysis. Utilizing the average beta of Staff's comparable water companies, 1.025, application of the traditional CAPM yields a result of 11.948% while application of the empirical CAPM yields a result of 11.903%. Averaging the corrected results of the traditional CAPM and the empirical CAPM for Staff's comparable water

companies yields an average indicated CAPM common equity cost rate of 11.926%. Because this 11.926% is based upon Staff's comparable water companies and these water companies are on average much greater in size than Ohio American, 11.926% does not reflect the greater risk of Ohio American due to its smaller relative size. Hence, a risk-adjusted CAPM common equity cost rate would be 12.176% based upon a size premium of 0.25% discussed previously.

Q. PLEASE DISCUSS STAFF'S APPLICATION OF THE DCF.

A. Staff's DCF analysis is also flawed, specifically in the following respects: 1) Staff's exclusive reliance upon a non-constant growth version of the DCF, implicitly rejecting the constant growth version of the DCF, i.e., the standard regulatory form; and 2) Staff's use of a long-term historical growth rate in GNP (Gross National Product).

First, without an explanation as to why, Staff relied upon a non-constant version of the DCF, although constant growth DCF results are shown on page 9 of Schedule D-1.4 the Staff report. As shown in Table 5 below, the constant growth DCF results average 12.46%, 217 basis points higher than Staff's non-constant growth DCF results of 10.29%. However, as also shown in Table 5 below, the range of DCF results is quite wide. Therefore, it is appropriate to also look at the median DCF result as discussed previously. The median non-constant DCF result is 10.25%, while the median constant growth DCF result is 11.95%.

Table 5

	Non-Constant DCF	Constant DCF
American States Water Co.	9.99%	11.09%
California Water Svc. Group	10.68	11.89
Southwest Water Company	10.50	14.84
Aqua America, Inc.	10.00	12.00
Average – excluding outliers	10.29%	12.46%
Midpoint		11.38%
Median	10.25%	11.95%
Midpoint of Median		11.10%

Absent evidence to the contrary and consistent with the Efficient Market Hypothesis (EMH) which states that all information available to investors is evaluated by investors in making their investment decisions, it is reasonable that investors would utilize the constant growth version of the DCF as it is more widely used in regulatory ratemaking than is the non-constant growth version used by Staff. In addition, Staff provided no theoretical or empirical support for the use of a non-constant growth DCF for water utilities. In fact, Staff was silent relative to its constant growth DCF analyses in the body of its report. In my opinion, there is no evidence which supports the assumption implicit in this version of the model, that growth in EPS, DPS or stock price will approach that of the economy as a whole at any given future point in time.

In view of the foregoing, in my opinion, had Staff included the constant growth DCF results in its analysis and utilized the median, its DCF conclusion

would have been 11.10%.

Second, Staff utilized an historical long-term growth rate in GNP as the growth rate in the third-stage of the model, from year twenty-five onward. As stated previously, ratemaking as well as the cost of capital is prospective. Therefore, to properly apply the non-constant growth version of the DCF, a prospective growth rate is required. Assuming, for the sake of argument, and because Staff utilized growth in GNP for the final stage of the non-constant, the prospective growth in GDP (Gross Domestic Product – growth in GNP is no longer available) should have been utilized because ratemaking and the cost of capital are both prospective. Averaging the growth in GDP forecasted by the Energy Information Administration (EIA) for the years 2024 through 2030 (the last year for which EIA forecasts GDP) of 4.66% with the growth in GDP forecasted by the Social Security Administration (SSA) for the years 2024-2085 of 4.58% from each of their 2008 annual reports results in a forecasted growth in GDP of 4.62%. This contrasts with the 6.77% historical GNP growth rate utilized by Staff and clearly would have resulted in non-constant growth DCF results significantly lower than 9.29% and which would fail the common sense test for reasonableness. Although Staff's GNP growth rate is higher than the current average forecasts of GDP, once again using forecasts is conceptually correct, as ratemaking and the cost of capital are prospective.

As with the CAPM results discussed above, these results reflect the riskiness of the larger more geographically diverse comparable group water companies and not the greater relative riskiness experienced by Ohio American

due to its small size. As also discussed above, in my opinion a size adjustment of 0.25% must be added to the DCF results of Staff's comparable water companies. This results in a risk-adjusted non-constant median DCF result of 10.50% and a risk-adjusted constant median DCF result of 12.20%.

Q. WHAT IS YOUR CONCLUSION REGARDING STAFF'S RATE OF RETURN ANALYSIS?

A. Based upon Staff's corrected analysis, the corrected CAPM results average 11.93% as shown on Schedule PMA-14 and the midpoint of the median non-constant and constant growth DCF results is 11.10% as derived in Table 5 above. Staff's corrected analysis thus yields a common equity cost rate of 11.52% (11.52% = (11.93% + 11.10%) / 2) without regard to a size adjustment to reflect Ohio American's greater relative risk due to its small size. Using a one-hundred basis point range of uncertainty as Staff has done in its report, the cost of common equity range becomes 11.02% to 12.02%. Making Staff's allowance for issuance and other costs, as shown on Schedule D-1.1 of the Staff report, using Staff's adjustment factor of 1.03619 results in a range of common equity cost rates of 11.42% to 12.46% (11.42% = 11.02% * 1.03619 and 12.46% = 12.02% * 1.03619) Adding a conservative size adjustment of 0.25% results in a Staff corrected, risk-adjusted range of common equity of 11.67% - 12.71%, with a midpoint of 12.19% applicable to Ohio American. Clearly, Staff's analysis, applied correctly and consistently, and modestly adjusted by 0.25% to reflect the greater relative business risk of Ohio American supports both the Company's requested return on common equity of

11.25% and my recommended common equity cost rate of 11.70% based upon current capital market conditions.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA
PRINCIPAL

AUS CONSULTANTS

PROFESSIONAL QUALIFICATIONS
OF
PAULINE M. AHERN, CRRA
PRINCIPAL
AUS CONSULTANTS

PROFESSIONAL EXPERIENCE

1996-2006

As a Principal (Vice President – 1996-2006), I offer testimony as an expert witness on the subjects of fair rate of return and cost of capital before state public utility commissions. I provide assistance and support to clients throughout the entire ratemaking litigation process.

1994-1996

As an Assistant Vice President, I prepared fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. These supporting exhibits include the determination of an appropriate ratemaking capital structure and the development of embedded cost rates of senior capital. The exhibits also support the determination of a recommended return on common equity through the use of various market models, such as, but not limited to, Discounted Cash Flow analysis, Capital Asset Pricing Model and Risk Premium Methodology, as well as an assessment of the risk characteristics of the client utility. I also assisted in the preparation of responses to any interrogatories received regarding such testimonies filed on behalf of client utilities. Following the filing of fair rate of return testimonies, I assisted in the evaluation of opposition testimony in order to prepare interrogatory questions, areas of cross-examination, and rebuttal testimony. I also evaluated and assisted in the preparation of briefs and exceptions following the hearing process. I have submitted testimony before state public utility commissions regarding appropriate capital structure ratios and fixed capital cost rates.

1990-1994

As a Senior Financial Analyst, I supervised two analysts in the preparation of fair rate of return and cost of capital exhibits which are filed along with expert testimony before various state and federal public utility regulatory bodies. The team also assisted in the preparation of interrogatory responses.

I evaluated the final orders and decisions of various commissions to determine whether further actions are warranted and to gain insight which may assist in the preparation of future rate of return studies.

I assisted in the preparation of an article authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of Public Utilities Fortnightly.

I co-authored an article with Frank J. Hanley entitled "Comparable Earnings: New Life for an Old Precept" which was published in the American Gas Association's Financial Quarterly Review, Summer 1994.

I was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the National Society of Rate of Return Analysts (now the Society of Utility and Regulatory Financial Analysts (SURFA)). This designation is based upon education, experience and the successful completion of a comprehensive examination.

As Administrator of Financial Analysis for AUS Utility Reports, which reports financial data for over 200 utility companies and has approximately 1,000 subscribers, I oversee the preparation of this monthly publication, as well as the annual publication, Financial Statistics - Public Utilities.

1988-1990

As a Financial Analyst, I assisted in the preparation of fair rate of return studies including capital structure determination, development of senior capital cost rates, as well as the determination of an appropriate rate of return on equity. I also assisted in the preparation of interrogatory responses, interrogatory questions of the opposition, areas of cross-examination and rebuttal testimony. I also assisted in the preparation of the annual publication C. A. Turner Utility Reports - Financial Statistics - Public Utilities.

1973-1975

As a research assistant in the Research Department of the Regional Economics Division of the Federal Reserve Bank of Boston, I was involved in the development and maintenance of econometric models to simulate regional economic conditions in New England in order to study the effects of, among other things, the energy crisis of the early 1970's and property tax revaluations on the economy of New England. I was also involved in the statistical analysis and preparation of articles for the New England Economic Review. Also, I acted as assistant editor for New England Business Indicators.

1972

As a research assistant in the Office of the Assistant Secretary for International Affairs, U.S. Treasury Department, Washington, D.C., I developed and maintained econometric models which simulated the economy of the United States in order to study the results of various alternate foreign trade policies so that national trade policy could be formulated and recommended.

I am also a member of the Society of Utility and Regulatory Financial Analysts (formerly the National Society of Rate of Return Analysts).

Clients Served

I have offered expert testimony before the following commissions:

Arkansas
California
Connecticut
Delaware
Florida
Hawaii
Idaho
Illinois
Indiana
Kentucky
Louisiana
Maine
Maryland
Michigan
Missouri
Nevada
New Jersey
New York
North Carolina
Ohio
Pennsylvania
South Carolina
Virginia
Washington

I have sponsored testimony on the rate of return and capital structure effects of merger and acquisition issues for:

California-American Water Company

New Jersey-American Water Company

I have sponsored testimony on fair rate of return and related issues for:

Aqua Illinois, Inc.
Aqua New Jersey, Inc.
Aqua Virginia, Inc.
Audubon Water Company
The Atlantic City Sewerage Company
Carolina Pines Utilities, Inc.
Carolina Water Service, Inc.
Consumers Illinois Water Company
Consumers Maine Water Company
Consumers New Jersey Water Company
City of DuBois, Pennsylvania
Elizabethtown Water Company
Emporium Water Company
GTE Hawaiian Telephone Inc.
Greenridge Utilities, Inc.
Borough of Hanover, Pennsylvania
Illinois American Water Company
Iowa American Water Company
Land'Or Utility Company
Long Neck Water Company
Louisiana Water Service, Inc.
Massanutten Public Service Company
Middlesex Water Company
Missouri-American Water Company
Mt. Holly Water Company
Nero Utility Services, Inc.
New Jersey-American Water Company
NRG Energy Center Pittsburgh LLC
Ohio-American Water Company
Penn Estates
Pinelands Waste Water Company
Pittsburgh Thermal
Southland Utilities, Inc.
Spring Creek Utilities, Inc.
Sussex Shores Water Company
Tega Cay Water Service, Inc.
Twin Lakes Water Service, Inc.
Thames Water Americas
Tidewater Utilities, Inc.
Total Environmental Services, Inc. – Treasure Lake Water & Sewer Divisions
Transylvania Utilities, Inc.
Twin Lakes Utilities, Inc.
United Utility Companies
United Water Arkansas, Inc.
United Water Connecticut, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Jersey, Inc.
United Water New Rochelle, Inc.
United Water New York, Inc.
United Water Owego / Nichols, Inc.
United Water Pennsylvania, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Utilities Inc. of Central Nevada
Utilities, Inc. of Florida
Utilities Services of South Carolina
Utility Center, Inc.
Valley Energy, Inc.
Water Service Corp. of Kentucky
Wellsboro Electric Company
Western Utilities, Inc.

I have sponsored testimony on capital structure and senior capital cost rates for the following clients:

Alpena Power Company
Arkansas-Western Gas Company
Associated Natural Gas Company
PG Energy Inc.
United Water Delaware, Inc.
Washington Natural Gas Company

I have assisted in the preparation of rate of return studies on behalf of the following clients:

Algonquin Gas Transmission Company
Arkansas-Louisiana Gas Company
Arkansas Western Gas Company
Artesian Water Company
Associated Natural Gas Company
Atlantic City Electric Company
Bridgeport-Hydraulic Company
Cambridge Electric Light Company
Carolina Power & Light Company
Citizens Gas and Coke Utility
City of Vernon, CA
Columbia Gas/Gulf Transmission Cos.
Commonwealth Electric Company
Commonwealth Telephone Company
Conestoga Telephone & Telegraph Co.
Connecticut Natural Gas Corporation
Consolidated Gas Transmission Company
Consumers Power Company
CWS Systems, Inc.
Delmarva Power & Light Company
East Honolulu Community Services, Inc.
Equitable Gas Company
Equitrans, Inc.
Florida Power & Light Company
Gary Hobart Water Company
Gasco, Inc.
GTE Arkansas, Inc.
GTE California, Inc.
GTE Florida, Inc.
GTE Hawaiian Telephone
GTE North, Inc.
GTE Northwest, Inc.
GTE Southwest, Inc.
Great Lakes Gas Transmission L.P.

Rate of Return Study Clients, Continued

Hawaiian Electric Company
Hawaiian Electric Light Company
IES Utilities Inc.
Illinois Power Company
Interstate Power Company
Iowa Electric Light and Power Company
Iowa Southern Utilities Company
Kentucky-West Virginia Gas Company
Lockhart Power Company
Middlesex Water Company
Milwaukee Metropolitan Sewer District
Mountaineer Gas Company
National Fuel Gas Distribution Corp.
National Fuel Gas Supply Corp.
National Fuel Gas Distribution Corp.
National Fuel Gas Supply Corp.
Newco Waste Systems of NJ, Inc.
New Jersey Natural Gas Company
New Jersey-American Water Company
New York-American Water Company
North Carolina Natural Gas Corp.
Northumbrian Water Company
Ohio-American Water Company
Oklahoma Natural Gas Company
Orange and Rockland Utilities
Paiute Pipeline Company
PECO Energy Company
Penn-York Energy Corporation
Pennsylvania-American Water Co.
PG Energy Inc.
Philadelphia Electric Company
South Carolina Pipeline Company
Southwest Gas Corporation
Stamford Water Company
Tesoro Alaska Petroleum Company
United Telephone of New Jersey
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Jersey, Inc.
United Water New York, Inc.
United Water Pennsylvania, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Vista-United Telecommunications Corp.
Washington Natural Gas Company
Washington Water Power Corporation
Waste Management of New Jersey – Transfer Station A
Wellsboro Electric Company
Western Reserve Telephone Company
Western Utilities, Inc

EDUCATION:

1973 – Clark University – B.A. – Honors in Economics
1991 – Rutgers University – M.B.A. – High Honors

PROFESSIONAL AFFILIATIONS:

American Finance Association
Financial Management Association
Society of Utility and Regulatory Financial Analysts
President – 2008-2010
Secretary/Treasurer – 2004-2006
Energy Association of Pennsylvania
National Association of Water Companies – Member of the Finance Committee

Ohio American Water Company
Case No. 07-1112-WS-AIR

BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

EXHIBIT

TO ACCOMPANY THE

PREPARED DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
PRINCIPAL
AUS CONSULTANTS

ON BEHALF OF

OHIO AMERICAN WATER COMPANY

CONCERNING

FAIR RATE OF RETURN

JUNE 2008

OHIO AMERICAN WATER COMPANY
Case No. 07-1112-WS-AIR
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to Exhibit No. ___
of Pauline M. Ahern

Ohio American Water Company
Summary of Cost of Capital and Fair Rate of Return
Actual at June 30, 2007

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long Term Debt	57.85 %	6.17 % (1)	3.57 %
Preferred Equity	1.34	8.48	0.11
Common Equity	40.81	11.70 (2)	4.77
Total	100.00 %		8.46 %

Notes:

(1) From Schedule D-1 Page 1 of 1
(2) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of this Schedule.

Ohio American Water Company
Brief Summary of Common Equity Cost Rate

No.	Principal Methods	Proxy Group of Six AUS Utility Reports Water Companies
1.	Discounted Cash Flow Model (DCF) (1)	10.89 %
2.	Risk Premium Model (RPM) (2)	11.75
3.	Capital Asset Pricing Model (CAPM) (3)	11.77
4.	Comparable Earnings Model (CEM) (4)	13.30
5.	Indicated Range of Common Equity Cost Rate before Adjustment for Business Risk	11.45 %
6.	Business Risk Adjustment (5)	0.25
7.	Indicated Range of Common Equity Cost Rate after Adjustment for Business Risk	11.70 %

Notes:
(1) From Schedule PMA-6.
(2) From page 1 of Schedule PMA-10.
(3) From page 1 Schedule PMA-11.
(4) From page 4 of Schedule PMA-12 of this Exhibit.
(5) Business risk adjustment to reflect Ohio American Water Company's greater business risk due to its small size relative to the proxy group as detailed in Ms. Ahern's accompanying direct testimony.

Ohio American Water Company
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		1 Total Capitalization (Incl. Short-Term Debt) for the Year 2007 (millions)		2 Market Capitalization on June 16, 2008 (1) (millions)		3 Applicable Decile of the NYSE/AMEX/ NASDAQ	4 Applicable Size Premium		5 Spread from Applicable Size Premium for (2)
1.	Ohio American Water Company	$ 83.095 (3)							
	Based Upon the Proxy Group of Six AUS Utility Reports Water Companies			$ 71.897		10 (4)	5.62%	(5)	
2.	Proxy Group of Six AUS Utility Reports Water Companies	$ 801.641 (6)	9.7 x	$ 770.923	10.7 x	8 (7)	2.20%	(8)	3.62%

Decile	Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Midpoint (millions)
1 - Largest	$20,386.369	$472,518.672	$246,452.521
2	9,274.049	20,234.526	14,754.288
3	5,025.807	9,206.713	7,116.260
4	3,426.586	5,012.577	4,219.582
5	2,413.583	3,422.743	2,918.163
6	1,633.668	2,411.794	2,022.731
7	1,129.192	1,633.320	1,381.256
8	725.267	1,128.765	927.016
9	363.549	723.258	543.404
10 - Smallest	1.922	363.479	182.701

See page 4 for notes.

Exhibit No. ___
Schedule PMA-1
Page 3 of 18

Ohio American Water Company
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE

Notes:

(1) From page 5 of this Schedule.

(2) *Line No. 1 – Line No. 2 and Line No. 1 – Line No. 3 of Columns 3 and 4, respectively. For example, the 3.62% in Column 5, Line No. 2 is derived as follows 3.62%% = 5.82% - 2.20.*

(3) From page 1 of Schedule PMA-3.

(4) With an estimated market capitalization of $71.897 million (based upon the proxy group of six AUS Utility Reports water companies) Ohio American Water Company falls in the 10th decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of $113.637 as shown in the table on the bottom half of page 3 of this Schedule.

(5) Size premium applicable to the 10th decile of the NYSE/AMEX/NASDAQ as shown on page 17 of this Schedule.

(6) From page 1 of Schedule PMA-4.

(7) With an estimated market capitalization of $770.923 million, the proxy group of six AUS Utility Reports water companies falls in the in the 8th decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of $766.270 million as shown in the table on the bottom half of page 3 of this Schedule.

(8) Average size premium applicable to the 8th decile of the NYSE/AMEX/NASDAQ as gleaned shown on page 17 of this Schedule.

Source of Information: Ibbotson SBBI - 2008 Valuation Yearbook – Market Results for Stocks, Bonds, Bills and Inflation for 1926-2007, Morningstar, Inc., 2008, Chicago, IL

Ohio American Water Company
Market Capitalization of Ohio American Water Company and
the Proxy Group of Six AUS Utility Reports Water Companies

Company	1 Common Stock Shares Outstanding at December 31, 2007 (millions)	2 Book Value per Share at December 31, 2007 (1)	3 Total Common Equity at December 31, 2007 (millions)	4 Closing Stock Market Price on June 16, 2008	5 Market-to-Book Ratio on June 16, 2008 (2)	6 Market Capitalization on June 16, 2008 (3) (millions)
Ohio American Water Company	NA	NA	$ 33.270 (4)	NA		
Based Upon the Proxy Group of Six AUS Utility Reports Water Companies					216.1 % (5)	$ 71.897 (6)
Proxy Group of Six AUS Utility Reports Water Companies						
American States Water Co.	17.231	$ 17.534	$ 302.129	36.120	206.0 %	$ 622.384
Aqua America, Inc.	133.400	7.319	976.298	16.850	230.2	2,247.790
California Water Services Group	20.656	18.664	385.709	36.690	196.6	758.236
SJW Corporation	18.365	12.901	236.934	30.770	238.5	565.091
Southwest Water Company	24.268	6.541	158.736	10.450	159.8	253.601
York Water Company	11.265	6.972	67.272	15.840	265.2	178.438
Average	37.533	$ 11.489	$ 354.513	$ 24.453	216.1 %	$ 770.923

NA = Not Available

Notes:
(1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) Company provided at March 31, 2008.
(5) The market-to-book ratio of Ohio American Water Company on June 16, 2008 is assumed to be equal to the average market-to-book ratio at June 16, 2008 of the proxy group of six AUS Utility Reports water companies.
(6) Ohio American Water Company's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at June 16, 2008 of the proxy group of six AUS Utility Reports water companies, 216.1%, and Ohio American Water Company's market capitalization on June 16, 2008 would therefore have been $71.897 million. ($71.897 = $33.270 * 216.1%).

Source of Information: 2007 Annual Forms 10K
EDGAR Online's I-Metrix Database, 5/12/08

Exhibit No. ___
Schedule PMA-1
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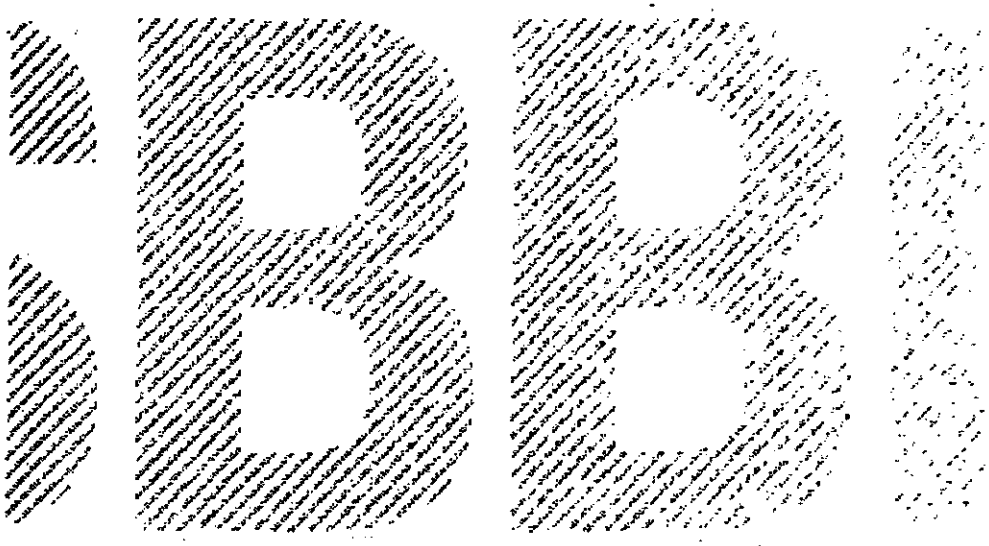
Ibbotson® SBBI®
2008 Valuation Yearbook

Market Results for
Stocks, Bonds, Bills, and Inflation
1926–2007



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Chapter 7
Firm Size and Return

The Firm Size Phenomenon

One of the most remarkable discoveries of modern finance is that of a relationship between firm size and return. The relationship cuts across the entire size spectrum but is most evident among smaller companies, which have higher returns on average than larger ones. Many studies have looked at the effect of firm size on return.[1] In this chapter, the returns across the entire range of firm size are examined.

Construction of the Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The New York Stock Exchange universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of their eligible equity securities. The companies are then split into 10 equally populated groups, or deciles. Eligible companies traded on the American Stock Exchange (AMEX) and the Nasdaq National Market (NASDAQ) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced, using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the security's portfolio. When a month-end NYSE price is missing, the month-end value of the security is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value still is not determined, the last available daily price is used.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices, and appropriate price adjustments are made to account for stock splits and dividends. The return on a portfolio for one month is calculated as the weighted average of the returns for its individual stocks. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Size of the Deciles

Table 7-1 reveals that the top three deciles of the NYSE/AMEX/NASDAQ account for most of the total market value of its stocks. Nearly two-thirds of the market value is represented by the first decile, which currently consists of 167 stocks, while the smallest decile accounts for just over one percent of the

1 Rolf W. Banz was the first to document this phenomenon. See Banz, Rolf W. "The Relationship Between Returns and Market Value of Common Stocks," *Journal of Financial Economics*, Vol. 9, 1981, pp. 3–18.

market value. The data in the second column of Table 7-1 are averages across all 82 years. Of course, the proportion of market value represented by the various deciles varies from year to year.

Columns three and four give recent figures on the number of companies and their market capitalization, presenting a snapshot of the structure of the deciles near the end of 2007.

Table 7-1‡
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926 through September 30, 2007

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-largest	63.22%	167	$10,357,817,750	62.34%
2	13.97%	174	2,327,351,920	14.01%
3	7.58%	192	1,111,672,200	6.69%
4	4.73%	184	709,696,610	4.27%
5	3.24%	203	541,399,790	3.26%
6	2.38%	251	411,038,680	2.47%
7	1.75%	275	379,465,150	2.28%
8	1.30%	380	291,182,590	1.75%
9	1.02%	641	284,538,240	1.71%
10-Smallest	0.83%	1775	201,705,150	1.21%
Mid-Cap 3-5	15.53%	579	2,362,768,200	14.22%
Low-Cap 6-8	5.43%	906	1,081,687,170	6.51%
Micro-Cap 9-10	1.85%	2,416	486,243,740	2.93%

Historical average percentage of total capitalization shows the average, over the last 82 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles, recent market capitalization of deciles, and recent percentage of total capitalization are as of September 30, 2007

Table 7-2 gives the current breakpoints that define the composition of the NYSE/AMEX/NASDAQ size deciles. The largest company and its market capitalization are presented for each decile. Table 7-3 shows the historical breakpoints for each of the three size groupings presented throughout this chapter. Mid-cap stocks are defined here as the aggregate of deciles 3–5. Based on the most recent data (Table 7-2), companies within this mid-cap range have market capitalizations at or below $9,206,713,000 but greater than $2,411,794,000. Low-cap stocks include deciles 6–8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $2,411,794,000 but greater than $723,258,000. Micro-cap stocks include deciles 9–10 and include companies with market capitalizations at or below $723,258,000. The market capitalization of the smallest company included in the micro-capitalization group is currently $1,922,000.

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Table 7-2[1]
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization by Decile
September 30, 2007

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	$472,518,672	Exxon Mobil Corp.
2	20,234,526	General Mills Inc.
3	9,206,713	Reliant Energy Inc.
4	5,012,577	Manitowoc Co. Inc.
5	3,422,743	FMC Corp.
6	2,431,794	Webster Financial Corp.
7	1,633,320	Simpson Manufacturing Co. Inc.
8	1,128,765	Metal Management Inc.
9	723,258	Citadel Broadcasting Corp.
10-Smallest	383,479	Emergency Medical Services Corp.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2007 are presented in Table 7-4. Note from this exhibit that both the average *return* and the total *risk*, or standard deviation of annual returns, tend to increase as one moves from the largest decile to the smallest. Furthermore, the serial correlations of returns are near zero for all but the smallest deciles. Serial correlations and their significance will be discussed in detail later in this chapter.

Graph 7-1 depicts the growth of one dollar invested in each of three NYSE/AMEX/NASDAQ groups broken down into *mid-cap*, *low-cap*, and *micro-cap* stocks. The index value of the entire NYSE/AMEX/NASDAQ is also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each subgroup. The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined 9 percent in 1977, the smallest stocks rose more than 20 percent. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and tenth decile returns was far more substantial, with the largest stocks rising 46 percent, and the smallest stocks rising 218 percent. This divergence in the performance of small and large company stocks is a common occurrence.

Table 7-3
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1926 to1965

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1926	$60,103	$13,795	$4,213	$13,800	$4,263	$43
1927	$84,820	$14,491	$4,415	$14,522	$4,450	$65
1928	$80,910	$18,761	$5,074	$18,786	$5,119	$135
1929	$103,054	$24,326	$6,862	$24,480	$5,873	$118
1930	$66,750	$12,918	$3,359	$13,050	$3,369	$30
1931	$42,607	$8,142	$1,927	$8,222	$1,944	$15
1932	$12,212	$2,208	$468	$2,223	$469	$19
1933	$40,298	$7,210	$1,830	$7,280	$1,875	$120
1934	$36,019	$6,638	$1,673	$6,669	$1,691	$89
1935	$37,631	$6,549	$1,350	$6,605	$1,363	$39
1936	$46,963	$11,505	$2,754	$11,528	$2,800	$98
1937	$51,750	$13,635	$3,539	$13,793	$3,563	$68
1938	$35,019	$8,372	$2,195	$8,400	$2,209	$60
1939	$35,408	$7,478	$1,819	$7,500	$1,854	$75
1940	$29,903	$7,890	$1,861	$8,007	$1,872	$51
1941	$30,362	$8,316	$2,086	$8,336	$2,087	$72
1942	$28,037	$6,868	$1,770	$6,870	$1,779	$82
1943	$42,721	$11,403	$3,847	$11,475	$3,903	$395
1944	$46,221	$13,066	$4,812	$13,068	$4,820	$309
1945	$55,125	$17,325	$6,413	$17,575	$6,426	$225
1946	$77,784	$24,492	$10,149	$24,189	$10,188	$829
1947	$57,830	$17,719	$6,373	$17,735	$6,390	$508
1948	$67,236	$19,632	$7,329	$19,651	$7,348	$583
1949	$56,082	$14,549	$5,037	$14,577	$5,108	$379
1950	$66,143	$18,675	$6,225	$18,709	$6,243	$303
1951	$82,517	$22,750	$7,598	$22,860	$7,600	$868
1952	$95,636	$25,405	$8,428	$25,452	$8,480	$480
1953	$98,218	$25,340	$8,156	$25,374	$8,168	$458
1954	$125,834	$28,707	$8,488	$28,791	$8,502	$463
1955	$170,829	$41,445	$12,366	$41,581	$12,444	$553
1956	$183,792	$46,805	$13,524	$46,886	$13,623	$1,122
1957	$194,300	$47,658	$13,844	$48,509	$13,848	$925
1958	$195,536	$46,774	$13,789	$46,871	$13,816	$550
1959	$256,283	$64,110	$19,548	$64,221	$19,701	$1,804
1960	$252,292	$61,485	$19,293	$61,529	$19,344	$831
1961	$296,261	$77,983	$23,562	$77,996	$23,813	$2,455
1962	$259,786	$58,785	$18,952	$58,866	$18,968	$1,018
1963	$308,903	$71,846	$23,927	$71,971	$24,056	$296
1964	$349,575	$79,508	$25,595	$79,937	$25,607	$223
1965	$365,675	$84,600	$26,483	$86,085	$26,543	$250

Table 7-3 (continued)
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Largest and Smallest Company by Size Group

from 1966 to 2007

	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
Date (Sept 30)	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10	Mid-Cap 3-5	Low-Cap 6-8	Micro-Cap 9-10
1966	$403,137	$99,960	$34,884	$100,107	$34,966	$381
1967	$459,438	$118,888	$42,186	$119,635	$42,237	$361
1968	$531,306	$150,863	$60,543	$151,260	$60,719	$582
1969	$518,485	$146,792	$54,353	$147,311	$54,503	$2,119
1970	$382,984	$94,754	$29,916	$94,845	$29,932	$822
1971	$551,890	$147,426	$45,570	$147,810	$45,571	$865
1972	$557,181	$143,835	$46,728	$144,263	$46,757	$1,091
1973	$431,354	$96,699	$29,352	$96,710	$29,430	$561
1974	$356,876	$79,878	$23,355	$80,280	$23,400	$444
1975	$477,054	$102,313	$30,353	$103,283	$30,394	$540
1976	$566,296	$121,717	$34,864	$121,982	$34,901	$564
1977	$584,577	$139,186	$40,700	$139,620	$40,765	$513
1978	$580,881	$164,093	$47,927	$164,455	$48,038	$830
1979	$665,019	$177,378	$51,197	$177,769	$51,274	$948
1980	$792,195	$199,312	$60,496	$199,315	$60,544	$549
1981	$962,397	$264,690	$72,104	$264,783	$72,450	$1,446
1982	$770,517	$210,301	$55,336	$210,630	$55,423	$1,060
1983	$1,209,911	$353,889	$104,382	$356,238	$104,588	$2,025
1984	$1,075,436	$315,965	$91,004	$316,103	$91,195	$2,093
1985	$1,440,436	$370,224	$94,875	$370,729	$94,887	$760
1986	$1,857,621	$449,015	$110,617	$449,462	$110,953	$708
1987	$2,059,143	$488,948	$113,419	$470,562	$113,430	$1,277
1988	$1,957,926	$421,340	$94,449	$421,575	$94,573	$696
1989	$2,145,947	$480,975	$100,285	$483,623	$100,384	$96
1990	$2,171,217	$474,065	$93,750	$474,477	$93,790	$132
1991	$2,129,863	$457,958	$87,586	$458,853	$87,733	$278
1992	$2,428,671	$500,327	$103,352	$500,346	$103,500	$510
1993	$2,705,192	$603,588	$137,105	$607,449	$137,137	$602
1994	$2,470,244	$596,059	$148,104	$597,975	$148,218	$598
1995	$2,789,938	$647,210	$155,386	$647,253	$156,532	$89
1996	$3,142,657	$751,316	$193,001	$751,660	$193,019	$1,043
1997	$3,484,440	$813,923	$228,900	$814,355	$228,058	$585
1998	$4,216,707	$925,688	$252,553	$926,215	$253,031	$1,671
1999	$4,251,741	$875,309	$220,397	$875,562	$220,456	$1,582
2000	$4,143,902	$840,000	$192,083	$840,730	$192,439	$1,393
2001	$5,158,315	$1,108,224	$265,734	$1,108,969	$265,736	$443
2002	$4,930,326	$1,116,525	$308,980	$1,124,331	$309,245	$501
2003	$4,744,580	$1,163,369	$329,060	$1,163,423	$329,529	$332
2004	$6,241,953	$1,607,854	$505,437	$1,607,931	$506,410	$1,393
2005	$7,187,244	$1,728,888	$586,393	$1,729,364	$587,243	$1,079
2006	$7,777,183	$1,948,589	$626,955	$1,947,240	$627,017	$2,247
2007	$9,206,713	$2,411,794	$723,258	$2,413,583	$725,267	$1,922

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Table 7-4‡
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns 1926–2007

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.6	11.3	18.91	0.08
2	10.9	13.2	21.82	0.04
3	11.3	13.7	23.31	–0.03
4	11.1	14.1	25.68	–0.01
5	11.7	14.8	26.49	–0.02
6	11.7	15.1	27.10	0.03
7	11.6	15.5	29.47	0.01
8	11.8	16.6	34.18	0.05
9	11.9	17.3	36.45	0.04
10-Smallest	13.6	22.0	44.58	0.16
Mid-Cap, 3–5	11.3	14.8	24.42	–0.02
Low-Cap, 6–8	11.7	15.5	29.03	0.03
Micro-Cap, 9–10	12.5	18.5	38.84	0.08
NYSE/AMEX/NASDAQ Total Value-Weighted Index	10.1	12.0	19.94	0.09

Aspects of the Firm Size Effect

The firm size phenomenon is remarkable in several ways. First, the greater risk of small stocks does not, in the context of the capital asset pricing model (CAPM), fully account for their higher returns over the long term. In the CAPM only systematic, or beta risk, is rewarded; small company stocks have had returns in excess of those implied by their betas.

Second, the calendar annual return differences between small and large companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large stocks and in most other equity markets but is evident in the size premia.

Third, the firm size effect is seasonal. For example, small company stocks outperformed large company stocks in the month of January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the firm size effect—long-term returns in excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

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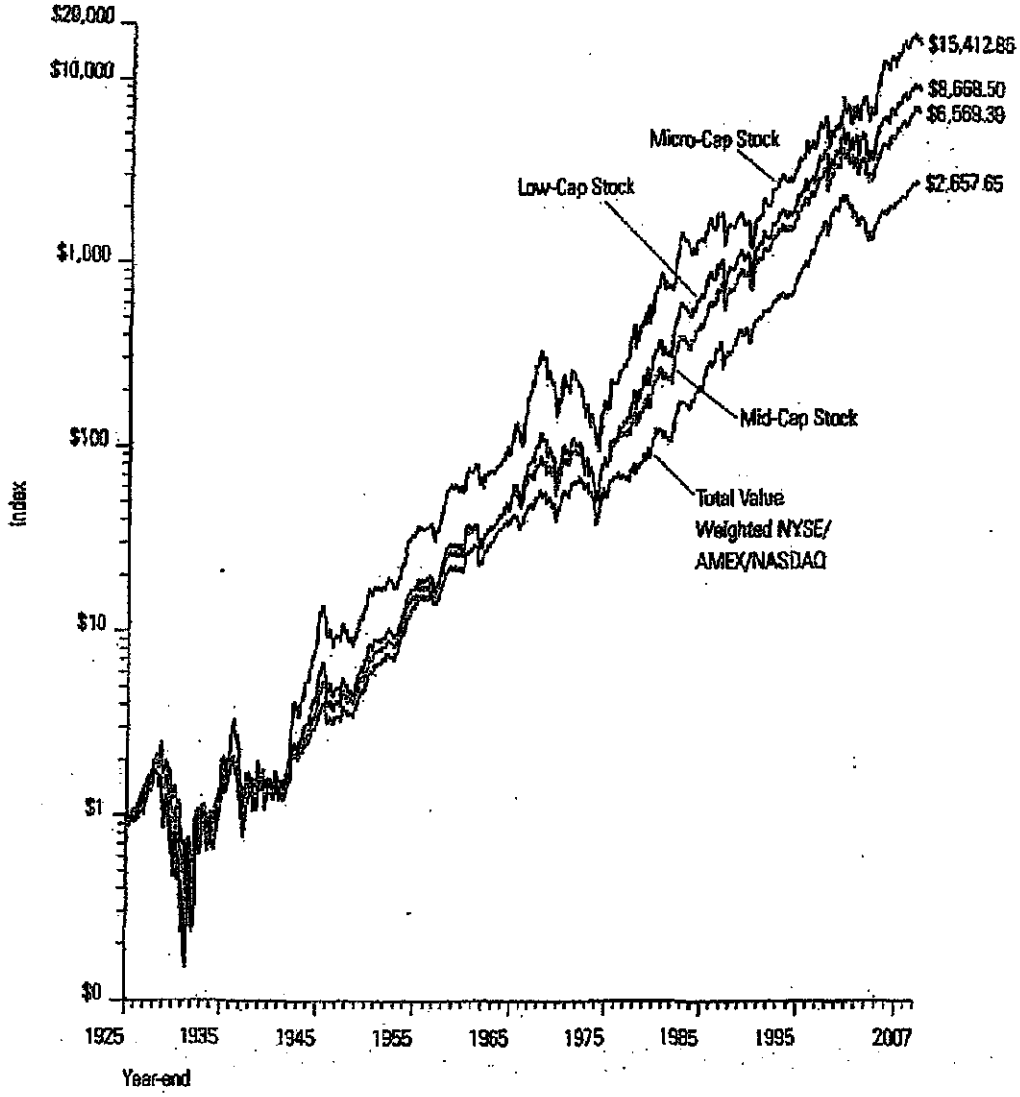
Graph 7-1[1]

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks

Year-end 1925 = $1.00

1925–2007



Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model (CAPM) does not fully account for the higher returns of small company stocks. Table 7-5 shows the returns in excess of systematic risk over the past 82 years for each decile of the NYSE/AMEX/NASDAQ. Recall that the CAPM is expressed as follows:

$$k_s = r_f + (\beta_s \times ERP)$$

Table 7-5 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk).[2] Beta measures the extent to which a security or portfolio is exposed to systematic risk.[3] The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-5 illustrates that the smaller deciles have had returns that are not fully explained by their higher betas. This return in excess of that predicted by CAPM increases as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro-cap stocks (deciles 9–10). This size-related phenomenon has prompted a revision to the CAPM, which includes a size premium. Chapter 4 presents this modified CAPM theory and its application in more detail.

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjustment for the size premium. Based on the risk (or beta) of a security, the expected return lies on the security market line. However, the actual historic returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of that which is appropriate for their systematic risk.

2 The equity risk premium is estimated by the 82-year arithmetic mean return on large company stocks, 12.26 percent, less the 82-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.21 percent. (It is appropriate, however, to match the maturity, or duration, of the riskless asset with the investment horizon.) See Chapter 5 for more detail on equity risk premium estimation.

3 Historical betas were calculated using a simple regression of the monthly portfolio (decile) total returns in excess of the 30-day U.S. Treasury bill total returns versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2007. See Chapter 6 for more detail on beta estimation.

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Table 7-5*

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2007

Decile	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.31%	6.10%	6.45%	–0.34%
2	1.03	13.16%	7.95%	7.27%	0.68%
3	1.10	13.72%	8.51%	7.75%	0.76%
4	1.12	14.07%	8.86%	7.93%	0.93%
5	1.16	14.85%	9.64%	8.17%	1.47%
6	1.18	15.14%	9.93%	8.33%	1.60%
7	1.24	15.46%	10.26%	8.76%	1.50%
8	1.30	16.58%	11.38%	9.18%	2.20%
9	1.35	17.28%	12.07%	9.51%	2.56%
10-Smallest	1.41	20.98%	15.77%	9.95%	5.82%
Mid-Cap, 3–5	1.12	14.01%	8.81%	7.88%	0.92%
Low-Cap, 6–8	1.22	15.49%	10.29%	8.64%	1.65%
Micro-Cap, 9–10	1.36	18.46%	13.25%	9.58%	3.65%

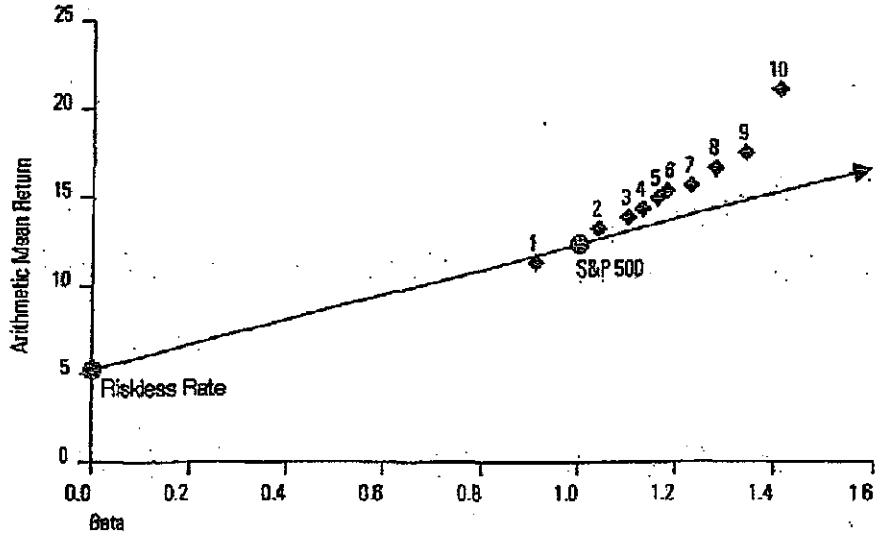
*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2007.

**Historical riskless rate is measured by the 82-year arithmetic mean income return component of 20-year government bonds (5.21 percent)

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.26 percent) minus the arithmetic mean income return component of 20-year government bonds (5.21 percent) from 1926–2007

Graph 7-2*

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2007



Further Analysis of the 10th Decile

The size premia presented thus far do a great deal to explain the return due solely to size in publicly traded companies. However, by splitting the 10th decile into two size groupings we can get a closer look at the smallest companies. This magnification of the smallest companies will demonstrate whether the company size to size premia relationship continues to hold true.

As previously discussed, the method for determining the size groupings for size premia analysis was to take the stocks traded on the NYSE and break them up into 10 deciles, after which stocks traded on the AMEX and NASDAQ were allocated into the same size groupings. This same methodology was used to split the 10th decile into two parts: 10a and 10b, with 10b being the smaller of the two. This is equivalent to breaking the stocks down into 20 size groupings, with portfolios 19 and 20 representing 10a and 10b.

Table 7-7 shows that the pattern continues; as companies get smaller their size premium increases. There is a noticeable increase in size premium from 10a to 10b, which can also be demonstrated visually in Graph 7-3. This can be useful in valuing companies that are extremely small. Table 7-6 presents the size, composition, and breakpoints of deciles 10a and 10b. First, the recent number of companies and total decile market capitalization are presented. Then the largest company and its market capitalization are presented.

Breaking the smallest decile down lowers the significance of the results compared to results for the 10th decile taken as a whole, however. The same holds true for comparing the 10th decile with the Micro-Cap aggregation of the 9th and 10th deciles. The more stocks included in a sample the more significance can be placed on the results. While this is not as much of a factor with the recent years of data, these size premia are constructed with data back to 1926. By breaking the 10th decile down into smaller components we have cut the number of stocks included in each grouping. The change over time of the number of stocks included in the 10th decile for the NYSE/AMEX/NASDAQ is presented in Table 7-8. With fewer stocks included in the analysis early on, there is a strong possibility that just a few stocks can dominate the returns for those early years.

While the number of companies included in the 10th decile for the early years of our analysis is low, it is not too low to still draw meaningful results even when broken down into subdivisions 10a and 10b. All things considered, size premia developed for deciles 10a and 10b are significant and can be used in cost of capital analysis. These size premia should greatly enhance the development of cost of capital analysis for very small companies.

Table 7-6‡

Size-Decile Portfolios 10a and 10b of the NYSE/AMEX/NASDAQ, Largest Company and Its Market Capitalization

September 30, 2007

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	386	708,458,780	363,479	Emergency Medical Services Corp.
10b	1,405	143,681,297	211,590	*Miller Industries Inc., Tenn.*

Note: These numbers may not aggregate to equal decile 10 figures

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Table 7-7[3]

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split

1926–2007

	Beta*	Arithmetic Mean Return	Realized Return in Excess of Riskless Rate**	Estimated Return in Excess of Riskless Rate†	Size Premium (Return in Excess of CAPM)
1-Largest	0.91	11.31%	5.10%	6.45%	–0.34%
2	1.03	13.16%	7.95%	7.27%	0.68%
3	1.10	13.72%	8.51%	7.75%	0.76%
4	1.12	14.07%	8.86%	7.93%	0.93%
5	1.16	14.85%	9.64%	8.17%	1.47%
6	1.18	15.14%	9.93%	8.33%	1.60%
7	1.24	15.46%	10.26%	8.76%	1.50%
8	1.30	16.58%	11.38%	9.18%	2.20%
9	1.35	17.26%	12.07%	9.51%	2.56%
10a	1.42	19.22%	14.01%	10.02%	3.99%
10b-Smallest	1.39	24.71%	19.50%	9.77%	9.73%
Mid-Cap, 3–5	1.12	14.01%	8.81%	7.88%	0.92%
Low-Cap, 6–8	1.22	15.49%	10.29%	8.64%	1.65%
Micro-Cap, 9–10	1.36	18.46%	13.25%	9.58%	3.65%

*Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926–December 2007

**Historical riskless rate is measured by the 82-year arithmetic mean income return component of 20-year government bonds (5.21 percent)

†Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.26 percent) minus the arithmetic mean income return component of 20-year government bonds (5.21 percent) from 1926–2007

Graph 7-3[3]

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split

1926-2007

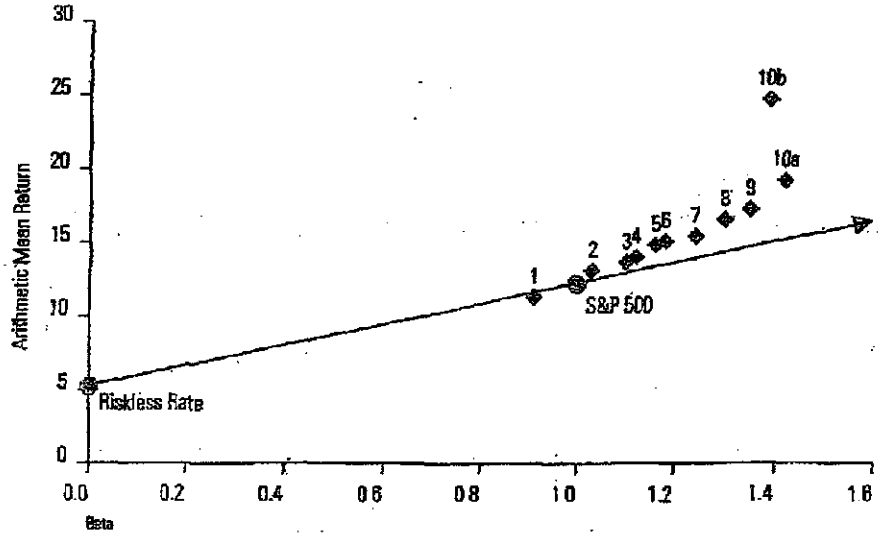

Table 7-8‡
Historical Number of Companies for NYSE/AMEX/NASDAQ Decile 10

Sept.	Number of Companies
1926	52*
1930	72
1940	78
1950	100
1960	108
1970	885
1980	685
1990	1,814
2000	1,927
2005	1,746
2006	1,744
2007	1,775

*The fewest number of companies was 49 in March, 1926

Alternative Methods of Calculating the Size Premia

The size premia estimation method presented above makes several assumptions with respect to the market benchmark and the measurement of beta. The impact of these assumptions can best be examined by looking at some alternatives. In this section we will examine the impact on the size premia of using a different market benchmark for estimating the equity risk premia and beta. We will also examine the effect on the size premia study of using sum beta or an annual beta.[4]

Changing the Market Benchmark

In the original size premia study, the S&P 500 is used as the market benchmark in the calculation of the realized historical equity risk premium and of each size group's beta. The NYSE total value-weighted index is a common alternative market benchmark used to calculate beta. Table 7-9 uses this market benchmark in the calculation of beta. In order to isolate the size effect, we require an equity risk premium based on a large company stock benchmark. The NYSE deciles 1–2 large company index offers a mutually exclusive set of portfolios for the analysis of the smaller company groups: mid-cap deciles 3–5, low-cap deciles 6–8, and micro-cap deciles 9–10. The size premia analyses using these benchmarks are summarized in Table 7-9 and depicted graphically in Graph 7-4.

For the entire period analyzed, 1926–2007, the betas obtained using the NYSE total value-weighted index are higher than those obtained using the S&P 500. Since smaller companies had higher betas using the NYSE benchmark, one would expect the size premia to shrink. However, as was illustrated in Chapter 5, the equity risk premium calculated using the NYSE deciles 1–2 benchmark results in a value of 6.35, as opposed to 7.05 when using the S&P 500. The effect of the higher betas and lower equity risk premium cancel each other out, and the resulting size premia in Table 7-9 are slightly higher than those resulting from the original study.

4 Sum beta is the method of beta estimation described in Chapter 6 that was developed to better account for the lagged reaction of small stocks to market movements. The sum beta methodology was developed for the same reason that the size premia were developed; small company betas were too small to account for all of their excess returns.

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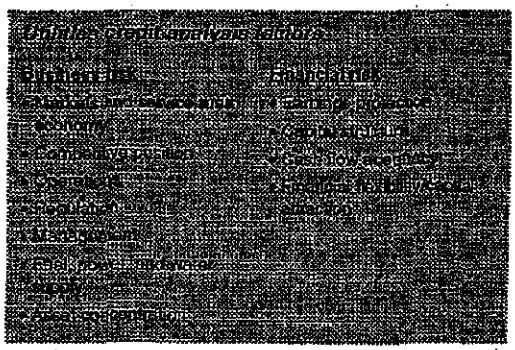
Utilities

The utilities rating methodology encompasses two basic components: business risk analysis and financial analysis. Evaluation of industry characteristics, the utility's position within that industry, its regulation, and its management provides the context for assessing a firm's financial condition.

Historical analysis is a tool for identifying strengths and weaknesses, and provides a starting point for evaluating financial condition. Business position assessment is the qualitative measure of a utility's fundamental creditworthiness. It focuses on the forces that will shape the utilities' future.



The credit analysis of utilities is quickly evolving, as utilities are treated less as regulated monopolies and more as entities faced with a host of challengers in a competitive environment. Marketplace dynamics are supplanting the power of regulation, making it critically important to reduce costs and/or market new services in order to thwart competitors' inroads.

Markets and service area economy

Assessing service territory begins with the economic and demographic evaluation of the area in which the utility has its franchise. Strength of long-term demand for the product is examined from a macroeconomic perspective. This enables Standard & Poor's to evaluate the affordability of rates and the staying power of demand.

Standard & Poor's tries to discern any secular consumption trends and, more importantly, the reasons for them. Specific items examined include the size and growth rate of the market, strength of the franchise, historical and projected sales growth, income levels and trends in population, employment, and per capita income. A utility with a healthy economy and customer base—as illustrated by diverse employment opportunities, average or above-average wealth and income statistics, and low unemployment—will have a greater capacity to support its operations.

For electric and gas utilities, distribution by customer class is scrutinized to assess the depth and diversity of the utility's customer mix. For example, heavy industrial concentration is viewed cautiously, since a utility may have significant exposure to cyclical volatility. Alternatively, a large residential component yields a stable and more predictable revenue stream. The largest utility customers are identified to determine their importance to the bottom line and assess the risk of their loss and potential adverse effect on the utility's financial position. Credit concerns arise when individual customers represent more than 5% of revenues. The company or industry may play a significant role in the overall economic base of the service area. Moreover, large customers may turn to cogeneration or alternative power supplies to meet their energy needs, potentially leading to reduced cash flow for the utility (even in cases where a large customer pays discounted rates and is not a profitable account for the utility). Customer concentration is less significant for water and telecommunication utilities.

Competitive position

As competitive pressures have intensified in the utilities industry, Standard & Poor's analysis has deepened to include a more thorough review of competitive position.

Electric utility competition

For electric utilities, competitive factors examined include: percentage of firm wholesale revenues that are most vulnerable to competition; industrial load concentration; exposure of key customers to alternative suppliers; commercial concentrations; rates for various customer classes; rate design and flexibility; production costs, both marginal and fixed; the regional capacity situation; and transmission constraints. A regional focus is evident, but high costs and rates relative to national averages are also of significant concern because of the potential for electricity substitutes over time.

Mounting competition in the electric utility industry derives from excess generating capacity, lower barriers to entering the electric generating business, and marginal costs that are below embedded costs. Standard & Poor's has already witnessed declining prices in wholesale markets, as *de facto* retail competition is already being seen in several parts of the country. Standard & Poor's believes that over the coming years more and more customers will want and demand lower prices. Initial concerns focus on the largest industrial loads, but other customer classes will be increasingly vulnerable. Competition will not necessar-

ily be driven by legislation. Other pressures will arise from global competition and improving technologies, whether it be the declining cost of incremental generation or advances in transmission capacity or substitute energy sources like the fuel cell. It is impossible to say precisely when wide-open retail competition will occur; this will be evolutionary. However, significantly greater competition in retail markets is inevitable.

Gas utility competition

Similarly, gas utilities are analyzed with regard to their competitive standing in the three major areas of demand: residential, commercial, and industrial. Although regulated as holders of monopoly power, natural gas utilities have for some time been actively competing for energy market share with fuel oil, electricity, coal, solar, wood, etc. The long-term staying power of market demand for natural gas cannot be taken for granted. In fact, as the electric utility industry restructures and reduces costs, electric power will become more cost competitive and threaten certain gas markets. In addition, independent gas marketers have made greater inroads behind the city gate and are competing for large gas users. Moreover, the recent trend by state regulators to unbundle utility services is creating opportunities for outsiders to market niche products. Distributors still have the upper hand, but those who do not reduce and control costs, and thus rates, could find competition even more difficult.

Natural gas pipelines are judged to carry a somewhat higher business risk than distribution companies because they face competition in every one of their markets. To the extent a pipeline serves utilities versus industrial end users, its stability is greater. Over the next five years, pipeline competition will heat up since many service contracts with customers are expiring. Most distributor or end-use customers are looking to reduce pipeline costs and are working to improve their load factor to do so. Thus, pipelines will likely find it difficult to recontract all capacity in coming years. Being the pipeline of choice is a function of attractive transportation rates, diversity and quality of services provided, and capacity available in each particular market. In all cases though, periodic discounting of rates to retain customers will occur and put pressure on profitability.

Water utility competition

As the last true utility monopoly, water utilities face very little competition and there is currently no challenge to the continuation of franchise areas. The only exceptions have been cases where investor-owned water companies have been subject to condemnation and municipalization because of poor service or political motivations. In that regard, Standard & Poor's pays close attention to costs and rates in relation to neighboring utilities and national averages. (In contrast, the privatization of public water facilities has begun, albeit at a slower pace than anticipated. This is occurring mostly in the form of operating contracts and public/private partnerships, and not in asset transfers. This trend should continue as cities look for ways to balance their tight budgets.) Also, water utilities are not fully immune to the forces of competition; in a few instances wholesale customers can access more than one supplier.

Telephone competition

The Telecommunications Act of 1996 accelerates the continuing challenge to the local exchange companies' (LECs) century-old monopoly in the local loop. Competitive access providers (CAPs), both facilities-based and resellers, are aggressively pursuing customers, generally targeting metropolitan areas, and promising lower rates and better service.

Most long-distance calls are still originated and terminated on the local telephone company network. To complete such a call, the long-distance provider (including AT&T, MCI, Sprint and a host of smaller interexchange carriers or "IXCs") must pay the local telephone company a steep "access" fee to compensate the local phone company for the use of its local network. CAPs, in contrast, build or lease facilities that directly connect customers to their long-distance carrier, bypassing the local telephone company and avoiding access fees, and thereby can offer lower long-distance rates. But the LECs are not standing still; they are combating the loss of business to CAPs by lowering access fees, thereby reducing the economic incentive for a high usage long-distance customer to use a CAP. LECs are attempting to make up for the loss of revenues from lower access fees by increasing basic local service rates (or at least not lowering them), since basic service is far less subject to competition. LECs are improving operating efficiency and marketing high margin, value-added new services. Additionally, in the wake of the Telecommunications Act, LECs will capture at least some of the inter-LATA long-distance market. As a result of these initiatives, LECs continue to rebuild themselves—from the traditional utility monopoly to leaner, more marketing oriented organizations.

While LECs, and indeed all segments of the telecommunications sector, face increasing competition, there are favorable industry factors that tend to offset heightened business risk and augur for overall ratings stability for most LECs. Importantly, telecommunications is a declining-cost business. With increased deployment of fiber optics, the cost of transport has fallen dramatically and digital switching hardware and software have yielded more capable, trouble-free and cost-efficient networks. As a result, the cost of network maintenance has dropped sharply, as illustrated by the ratio of employees per 10,000 access lines, an oft cited measurement of efficiency. Ratios as low as 25 employees per 10,000 lines are being seen, down from the typical 40 or more employees per 10,000 ratio of only a few years ago.

In addition, networks are far more capable. They are increasingly digitally switched and able to accommodate high-speed communications. The infrastructure needed to accommodate switched broadband services will be built into telephone networks over the next few years. These advanced networks will enable telephone companies to look to a greater variety of high-margin, value-added serv-

ices. In addition to those current services such as call waiting or caller ID, the delivery of hundreds of broadcast and interactive video channels will be possible. While these services offer the potential of new revenue streams, they will simultaneously present a formidable challenge. LECs will be entering the new (to them) arena of multimedia entertainment and will have to develop expertise in marketing and entertainment programming acumen; such skills stand in sharp contrast to LECs' traditional strengths in engineering and customer service.

Operations

Standard & Poor's focuses on the nature of operations from the perspective of cost, reliability, and quality of service. Here, emphasis is placed on those areas that require management attention in terms of time or money and which, if unresolved, may lead to political, regulatory, or competitive problems.

Operations of electric utilities

For electrics, the status of utility plant investment is reviewed with regard to generating plant availability and utilization, and also for compliance with existing and contemplated environmental and other regulatory standards. The record of plant outages, equivalent availability, load factors, heat rates, and capacity factors are examined. Also important is efficiency, as defined by total megawatt hour per employee and customers per employee. Transmission interconnections are evaluated in terms of the number of utilities to which the utility in question has access, the cost structures and available generating capacity of these other utilities, and the price paid for wholesale power.

Because of mounting competition and the substantial escalation in decommissioning estimates, significant weight is given to the operation of nuclear facilities. Nuclear plants are becoming more vulnerable to high production costs that make their rates uneconomic. Significant asset concentration may expose the utility to poor performance, unscheduled outages or premature shutdowns, and large deferrals or regulatory assets that may need to be written off for the utility to remain competitive. Also, nuclear facilities tend to represent significant portions of their operators' generating capability and assets. The loss of a productive nuclear unit from both power supply and rate base can interrupt the revenue stream and create substantial additional costs for repairs and improvements and replacement power. The ability to keep these stations running smoothly and economically directly influences the ability to meet electric demand, the stability of revenues and costs, and, by extension, the ability to maintain adequate creditworthiness. Thus, economic operation, safe operation, and long-term operation are examined in depth. Specifically, emphasis is placed on operation and maintenance costs, busbar costs, fuel costs, refueling outages, forced outages, plant statistics, NRC evaluations, the potential need for repairs, operating licenses, decommissioning estimates and amounts held in external trusts, spent fuel storage capacity, and management's nuclear experience. In essence, favorable nuclear operations offer significant opportunities but, if a nuclear unit runs poorly or not at all, the attendant risks can be great.

Operations of gas utilities

For gas pipeline and distribution companies, the degree of plant utilization, the physical condition of the mains and lines, adequacy of storage to meet seasonal needs, "lost and unaccounted for" gas levels, and per-unit nongas operating and construction costs are important factors. Efficiency statistics such as load factor, operating costs per customer, and operating income per employee are also evaluated in comparison to other utilities and the industry as a whole.

Operations of water utilities

As a group, water utilities are continually upgrading their physical plant to satisfy regulations and to develop additional supply. Over the next decade, water systems will increasingly face the task of maintaining compliance, as drinking water regulations change and infrastructure ages. Given that the Safe Drinking Water Act was authorized in 1974, the first generation of treatment plants built to conform with these rules are almost 20 years old. Additionally, because the focus during this period was on satisfying environmental standards, deferred maintenance of distribution systems has been common, especially in older urban areas. The increasing cost of supplying treated water argues against the high level of unaccounted for water witnessed in the industry. Consequently, Standard & Poor's anticipates capital plans for rebuilding distribution lines and major renewal and replacement efforts aimed at treatment plants.

Operations of telephone companies

For telephone companies, cost-of-service analysis focuses on plant capability and measures of efficiency and quality of service. Plant capability is ascertained by looking at such parameters as percentage of digitally switched lines; fiber optic deployment, in particular in those portions of the plant key to network survival; and the degree of broadband capacity fiber and coaxial deployment and broadband switching capacity. Efficiency measures include operating margins, the ratio of employees per 10,000 access lines, and the extent of network and operations consolidation. Quality of service encompasses examination of quantitative measures, such as trouble reports and repeat service calls, as well as an assessment of qualitative factors, that may include service quality goals mandated by regulators.

Regulation

Regulatory rate-setting actions are reviewed on a case-by-case basis with regard to the potential affect on creditworthiness. Regulators' authorizing high rates of return is of little value unless the returns are earnable. Furthermore, allowing high returns based on noncash items does not benefit bondholders. Also, to be viewed positively, regulatory treatment should allow consistent performance from

period to period, given the importance of financial stability as a rating consideration.

The utility group meets frequently with commission and staff members, both at Standard & Poor's offices and at commission headquarters, demonstrating the importance Standard & Poor's places on the regulatory arena for credit quality evaluation. Input from these meetings and from review of rate orders and their impact weigh heavily in Standard & Poor's analysis.

Standard & Poor's does not "rate" regulatory commissions. State commissions typically regulate a number of diverse industries, and regulatory approaches to different types of companies often differ within a single regulatory jurisdiction. This makes it all but impossible to develop inclusive "ratings" for regulators.

Standard & Poor's evaluation of regulation also encompasses the administrative, judicial, and legislative processes involved in state and federal regulation. These can affect rate-setting activities and other aspects of the business, such as competitive entry, environmental and safety rules, facility siting, and securities sales.

As the utility industry faces an increasingly deregulated environment, alternatives to traditional rate-making are becoming more critical to the ability of utilities to effectively compete, maintain earnings power, and sustain creditor protection. Thus, Standard & Poor's focuses on whether regulators, both state and federal, will help or hinder utilities as they are exposed to greater competition. There is much that regulators can do, from allocating costs to more captive customers to allowing pricing flexibility—and sometimes just stepping out of the way.

Under traditional rate-making, rates and earnings are tied to the amount of invested capital and the cost of capital. This can sometimes reward companies more for justifying costs than for containing them. Moreover, most current regulatory policies do not permit utilities to be flexible when responding to competitive pressures of a deregulated market. Lack of flexible tariffs for electric utilities may lure large customers to wheel cheaper power from other sources.

In general, a regulatory jurisdiction is viewed favorably if it permits earning a return based on the ability to sustain rates at competitive levels. In addition to performance-based rewards or penalties, flexible plans could include market-based rates, price caps, index-based prices, and rates premised on the value of customer service. Such rates more closely mirror the competitive environment that utilities are confronting.

Electric industry regulation

The ability to enter into long-term arrangements at negotiated rates without having to seek regulatory approval for each contract is also important in the electric industry. (While contracting at reduced rates constrains financial performance, it lessens the potential adverse impact in the event of retail wheeling. Since revenue losses associated with this strategy are not likely to be recovered from ratepayers, utilities must control costs well enough to remain competitive if they are to sustain current levels of bondholder protection.)

Natural gas industry regulation

In the gas industry, too, several state commission policies weigh heavily in the evaluation of regulatory support. Examples include stabilization mechanisms to adjust revenues for changes in weather or the economy, rate and service unbundling decisions, revenue and cost allocation between sales and transportation customers, flexible industrial rates, and the general supportiveness of construction costs and gas purchases.

Water industry regulation

In all water utility activities, federal and state environmental regulations continue to play a critical role. The legislative timetable to effect the 1986 amendments to the Safe Drinking Water Act of 1974 was quite aggressive. But environmental standards-setting has actually slowed over the past couple of years due largely to increasing sentiment that the stringent, costly standards have not been justified on the basis of public health. A moratorium on the promulgation of significant new environmental rules is anticipated.

Telecommunications industry regulation

Despite the advances in telecommunications deregulation, analysis of regulation of telephone operators will continue to be a key rating determinant for the foreseeable future. The method of regulation may be either classic rate-based rate of return or some form of price cap mechanism. The most important factor is to assess whether the regulatory framework—no matter which type—provides sufficient financial incentive to encourage the rated company to maintain its quality of service and to upgrade its plant to accommodate new services while facing increasing competition from wireless operators and cable television companies.

Where regulators do still set tariffs based on an authorized return, Standard & Poor's strives to explore with regulators their view of the rate-of-return components that can materially impact reported versus regulatory earnings. Specifically these include the allowable base upon which the authorized return can be earned, allowable expenses, and the authorized return. Since regulatory oversight runs the gamut from strict, adversarial relationships with the regulated operating companies to highly supportive postures, Standard & Poor's probes beyond the apparent regulatory environment to ascertain the actual impact of regulation on the rated company.

Management

Evaluating the management of a utility is of paramount importance to the analytical process since management's abilities and decisions affect all areas of a company's operations. While regulation, the economy, and other outside factors can influence results, it is ultimately the quality of management that determines the success of a company.

With emerging competition, utility management will be more closely scrutinized by Standard & Poor's and will become an increasingly critical component of the credit evaluation. Management strategies can be the key determinant in differentiating utilities and in establishing where companies lie on the business position spectrum. It is imperative that managements be adaptable, aggressive, and proactive if their utilities are to be viable in the future; this is especially important for utilities that are currently uncompetitive.

The assessment of management is accomplished through meetings, conversations, and reviews of company plans. It is based on such factors as tenure, industry experience, grasp of industry issues, knowledge of customers and their needs, knowledge of competitors, accounting and financing practices, and commitment to credit quality. Management's ability and willingness to develop workable strategies to address their systems' needs, to deal with the competitive pressures of free market, to execute reasonable and effective long-term plans, and to be proactive in leading their utilities into the future are assessed. Management quality is also indicated by thoughtful balancing of public and private priorities, a record of credibility, and effective communication with the public, regulatory bodies, and the financial community. Boards of directors will receive ever more attention with respect to their role in setting appropriate management incentives.

With competition the watchword, Standard & Poor's also focuses on management's efforts to enhance financial condition. Management can bolster bondholder protection by taking any number of discretionary actions, such as selling common equity, lowering the common dividend payout, and paying down debt. Also important for the electric industry will be creativity in entering into strategic alliances and working partnerships that improve efficiency, such as central dispatching for a number of utilities or locking up at-risk customers through long-term contracts or expanded flexible pricing agreements. Proactive management teams will also seek alternatives to traditional rate-base, rate-of-return rate-making, move to adopt higher depreciation rates for generating facilities, segment customers by individual market preferences, and attempt to create superior service organizations.

In general, management's ability to respond to mounting competition and changes in the utility industry in a swift and appropriate manner will be necessary to maintain credit health.

Fuel, power, and water supply

Assessment of present and prospective fuel and power supply is critical to every electric utility analysis, while gauging the long-term natural gas supply position for gas pipeline and distribution companies and the water resources of a water utility is equally important. There is no similar analytical category for telephone utilities.

Electric utilities

For electric utilities emphasis is placed on generating reserve margins, fuel mix, fuel contract terms, demand-side management techniques, and purchased power arrangements. The adequacy of generating margins is examined nationally, regionally, and for each individual company. However, the reserve margin picture is muddied by the imprecise nature of peak-load growth forecasting, and also supply uncertainty relating to such things as Canadian capacity availability and potential plant shutdowns due to age, new NRC rules, acid rain remedies, fuel shortages, problems associated with nontraditional technologies, and so forth. Even apparently ample reserves may not be what they seem. Moreover, the quality of capacity is just as important as the size of reserves. Companies' reserve requirements differ, depending upon individual operating characteristics.

Fuel diversity provides flexibility in a changing environment. Supply disruptions and price hikes can raise rates and ignite political and regulatory pressures that ultimately lead to erosion in financial performance. Thus, the ability to alter generating sources and take advantage of lower cost fuels is viewed favorably.

Dependence on any single fuel means exposure to that fuel's problems: electric utilities that rely on oil or gas face the potential for shortages and rapid price increases; utilities that own nuclear generating facilities face escalating costs for decommissioning; and coal-fired capacity entails environmental problems stemming from concerns over acid rain and the "greenhouse effect."

Buying power from neighboring utilities, qualifying facility projects, or independent power producers may be the best choice for a utility that faces increasing electricity demand. There has been a growing reliance on purchased power arrangements as an alternative to new plant construction. This can be an important advantage, since the purchasing utility avoids potential construction cost overruns as well as risking substantial capital. Also, utilities can avoid the financial risks typical of a multiyear construction program that are caused by regulatory lag and prudence reviews. Furthermore, purchased power may enhance supply flexibility, fuel resource diversity, and maximize load factors. Utilities that plan to meet demand projections with a portfolio of supply-side options also may be better able to adapt to future growth uncertainties. Notwithstanding the benefits of purchasing, such a strategy has risks associated with it. By entering into a firm long-term purchased power contract that contains a fixed-cost component, utilities can incur substantial market, operating, regulatory, and financial risks. Moreover, regulatory treatment of purchased power removes any upside potential that might help offset the risks. Utilities are not compensated through incentive rate-making; rather, purchased power is recovered dollar-for-dollar as an operating expense.

To analyze the financial impact of purchased power, Standard & Poor's first calculates the net present value of future annual capacity payments (discounted at 10%). This represents a potential debt equivalent—the off-balance-sheet obligation that a utility incurs when it enters into a long-term purchased power contract. However, Standard

& Poor's adds to the utility's balance sheet only a portion of this amount, recognizing that such a contractual arrangement is not entirely the equivalent of debt. What percentage is added is a function of Standard & Poor's qualitative analysis of the specific contract and the extent to which market, operating, and regulatory risks are borne by the utility (the risk factor). For unconditional, take-or-pay contracts, the risk factor range is from 40%-80%, with the average hovering around 60%. A lower risk factor is typically assigned for system purchases from coal-fired utilities and a higher risk factor is usually designated for unit-specific nuclear purchases. The range for take-and-pay performance obligations is between 10%-50%.

Gas utilities

For gas distribution utilities, long-term supply adequacy obviously is critical, but the supply role has become even more important in credit analysis since the Federal Energy Regulatory Commission's Order 636 eliminated the interstate pipeline merchant business. This thrust gas supply responsibilities squarely on local gas distributors. Standard & Poor's has always believed distributor management has the expertise and wherewithal to perform the job well, but the risks are significant since gas costs are such a large percentage of total utility costs. In that regard, it is important for utilities to get preapprovals of supply plans by state regulators or at least keep the staff and commissioners well informed. To minimize risks, a well-run program would diversify gas sources among different producers or marketers, different gas basins in the U.S. and Canada, and different pipeline routes. Also, purchase contracts should be firm, with minimal take-or-pay provisions, and have prices tied to an industry index. A modest percentage of fixed-price gas is not unreasonable. Contracts, whether of gas purchases or pipeline capacity, should be intermediate term. Staggering contract expirations (preferably annually) provides an opportunity to be an active market player. A modest degree of reliance on spot purchases provides flexibility, as does the use of market-based storage. Gas storage and on-property gas resources such as liquefied natural gas or propane air are effective peak-day and peak-season supply management tools.

Since pipeline companies no longer buy and sell natural gas and are just common carriers, connections with varied reserve basins and many wells within those basins are of great importance. Diversity of sources helps offset the risks arising from the natural production declines eventually experienced by all reserve basins and individual wells. Moreover, such diversity can enhance a pipeline's attractiveness as a transporter of natural gas to distributors and end users seeking to buy the most economical gas available for their needs.

Water utilities

Nearly all water systems throughout the U.S. have ample long-term water supplies. Yet to gain comfort, Standard & Poor's assesses the production capability of treatment plants and the ability to pump water from underground aquifers in relation to the usage demands from consumers. Having adequate treated water storage facilities has become important in recent years and has helped many systems meet demands during peak summer periods. Of interest is whether the resources are owned by the utility or purchased from other utilities or local authorities. Owning properties with water rights provides more supply security. This is especially so in states like California where water allocations are being reduced, particularly since recent droughts and environmental issues have created alarm. Since the primary cost for water companies is treatment, it makes little difference whether raw water is owned or bought. In fact, compliance with federal and state water regulations is very high, and the overall cost to deliver treated water to consumers remains relatively affordable.

Asset concentration in the electric utility industry

In the electric industry, Standard & Poor's follows the operations of major generating facilities to assess if they are well managed or troubled. Significant dependence on one generating facility or a large financial investment in a single asset suggests high risk. The size or magnitude of a particular asset relative to total generation, net plant in service, and common equity is evaluated. Where substantial asset concentration exists, the financial profile of a company may experience wide swings depending on the asset's performance. Heavy asset concentration is most prevalent among utilities with costly nuclear units.

Earnings protection

In this category, pretax cash income coverage of all interest charges is the primary ratio. For this calculation, allowance for funds used during construction (AFUDC) is removed from income and interest expense. AFUDC and other such noncash items do not provide any protection for bondholders. To identify total interest expense, the analyst reclassifies certain operating expenses. The interest component of various off-balance-sheet obligations, such as leases and some purchased-power contracts, is included in interest expense. This provides the most direct indication of a utility's ability to service its debt burden.

While considerable emphasis in assessing credit protection is placed on coverage ratios, this measure does not provide the entire earnings protection picture. Also important are a company's earned returns on both equity and capital, measures that highlight a firm's earnings performance. Consideration is given to the interaction of embedded costs, financial leverage, and pretax return on capital.

Capital structure

Analyzing debt leverage goes beyond the balance sheet and covers quasi-debt items and elements of hidden financial leverage. Noncapitalized leases (including sale/leaseback obligations), debt guarantees, receivables financing, and purchased-power contracts are all considered debt equivalents and are reflected as debt in calculating capital

structure ratios. By making debt level adjustments, the analyst can compare the degree of leverage used by each utility company.

Furthermore, assets are examined to identify undervalued or overvalued items. Assets of questionable value are discounted to more accurately evaluate asset protection.

Some firms use short-term debt as a permanent piece of their capital structure. Short-term debt also is considered part of permanent capital when it is used as a bridge to permanent financing. Seasonal, self-liquidating debt is excluded from the permanent debt amount, but this situation is rare—with the exception of certain gas utilities. Given the long life of almost all utility assets, short-term debt may expose these companies to interest-rate volatility, remarketing risk, bank line backup risk, and regulatory exposure that cannot be readily offset. The lower cost of shorter-term obligations (assuming a positively sloped yield curve) is a positive factor that partially mitigates the risk of interest-rate variability. As a rule of thumb, a level of short-term debt that exceeds 10% of total capital is cause for concern.

Similarly, if floating-rate debt and preferred stock constitute over one-third of total debt plus preferred stock, this level is viewed as unusually high and may be cause for concern. It might also indicate that management is aggressive in its financial policies.

A layer of preferred stock in the capital structure is usually viewed as equity—since dividends are discretionary and the subordinated claim on assets provides a cushion for providers of debt capital. A preferred component of up to 10% is typically viewed as a permanent wedge in the capital structure of utilities. However, as rate-of-return regulation is phased out, preferred stock may be viewed by utilities—as many industrial firms would—as a temporary option for companies that are not current taxpayers that do not benefit from the tax deductibility of interest. Even now, floating-rate preferred and money market perpetual preferred are problematic: a rise in the rate due to deteriorating credit quality tends to induce a company to take out such preferred stock with debt. Structures that convey tax deductibility to preferred stock have become very popular and do generally afford such financings with equity treatment.

Cash flow adequacy

Cash flow adequacy relates to a company's ability to generate funds internally relative to its needs. It is a basic component of credit analysis because it takes cash to pay expenses, fund capital spending, pay dividends, and make interest and principal payments. Since both common and preferred dividend payments are important to maintain capital market access, Standard & Poor's looks at cash flow measures both before and after dividends are paid.

To determine cash flow adequacy, several quantitative relationships are examined. Emphasis is placed on cash flow relative to debt, debt service requirements, and capital spending. Cash flow adequacy is evaluated with respect to a firm's ability to meet all fixed charges, including capacity payments under purchased-power contracts. Despite the conditional nature of some contracts, the purchaser is obligated to pay a minimum capacity charge. The ratio used is funds from operations plus interest and capacity payments divided by interest plus capacity payments.

Financial flexibility/capital attraction

Financing flexibility incorporates a utility's financing needs, plans, and alternatives, as well as its flexibility to accomplish its financing program under stress without damaging creditworthiness. External funding capability complements internal cash flow. Especially since utilities are so capital intensive, a firm's ability to tap capital markets on an ongoing basis must be considered. Debt capacity reflects all the earlier elements: earnings protection, debt leverage, and cash flow adequacy. Market access at reasonable rates is restricted if a reasonable capital structure is not maintained and the company's financial prospects dim. The analyst also reviews indenture restrictions and the impact of additional debt on covenant tests.

Standard & Poor's assesses a company's capacity and willingness to issue common equity. This is affected by various factors, including the market-to-book ratio, dividend policy, and any regulatory restrictions regarding the composition of the capital structure.

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November 30, 2007

U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

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U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

The electric, gas, and water utility ratings ranking lists published today by Standard & Poor's U.S. Utilities & Infrastructure Ratings practice are categorized under the business risk/financial risk matrix used by the Corporate Ratings group. This is designed to present our rating conclusions in a clear and standardized manner across all corporate sectors. Incorporating utility ratings into a shared framework to communicate the fundamental credit analysis of a company furthers the goals of transparency and comparability in the ratings process. Table 1 shows the matrix.

Table 1

Business Risk/Financial Risk

	Financial Risk Profile				
Business Risk Profile	**Minimal**	**Modest**	**Intermediate**	**Aggressive**	**Highly leveraged**
Excellent	AAA	AA	A	BBB	BB
Strong	AA	A	A-	BBB-	BB-
Satisfactory	A	BBB+	BBB	BB+	B+
Weak	BBB	BBB-	BB+	BB-	B
Vulnerable	BB	B+	B+	B	B-

The utilities rating methodology remains unchanged, and the use of the corporate risk matrix has not resulted in any changes to ratings or outlooks. The same five factors that we analyzed to produce a business risk score in the familiar 10-point scale are used in determining whether a utility possesses an "Excellent," "Strong," "Satisfactory," "Weak," or "Vulnerable" business risk profile:

- Regulation,
- Markets,
- Operations,
- Competitiveness, and
- Management.

Regulated utilities and holding companies that are utility-focused virtually always fall in the upper range ("Excellent" or "Strong") of business risk profiles. The defining characteristics of most utilities--a legally defined service territory generally free of significant competition, the provision of an essential or near-essential service, and the presence of regulators that have an abiding interest in supporting a healthy utility financial profile--underpin the business risk profiles of the electric, gas, and water utilities.

As the matrix concisely illustrates, the business risk profile loosely determines the level of financial risk appropriate for any given rating. Financial risk is analyzed both qualitatively and quantitatively, mainly with financial ratios and other metrics that are calculated after various analytical adjustments are performed on financial statements prepared under GAAP. Financial risk is assessed for utilities using, in part, the indicative ratio ranges in table 2.

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Table 2

Financial Risk Indicative Ratios - U.S. Utilities

(Fully adjusted, historically demonstrated, and expected to consistently continue)

	Cash flow		Debt leverage
	(FFO/debt) (%)	(FFO/interest) (x)	(Total debt/capital) (%)
Modest	40 - 60	4.0 - 6.0	25 - 40
Intermediate	25 - 45	3.0 - 4.5	35 - 50
Aggressive	10 - 30	2.0 - 3.5	45 - 60
Highly leveraged	Below 15	2.5 or less	Over 60

The indicative ranges for utilities differ somewhat from the guidelines used for their unregulated counterparts because of several factors that distinguish the financial policy and profile of regulated entities. Utilities tend to finance with long-maturity capital and fixed rates. Financial performance is typically more uniform over time, avoiding the volatility of unregulated industrial entities. Also, utilities fare comparatively well in many of the less-quantitative aspects of financial risk. Financial flexibility is generally quite robust, given good access to capital, ample short-term liquidity, and the like. Utilities that exhibit such favorable credit characteristics will often see ratings based on the more accommodative end of the indicative ratio ranges, especially when the company's business risk profile is solidly within its category. Conversely, a utility that follows an atypical financial policy or manages its balance sheet less conservatively, or falls along the lower end of its business risk designation, would have to demonstrate an ability to achieve financial metrics along the more stringent end of the ratio ranges to reach a given rating.

Note that even after we assign a company a business risk and financial risk, the committee does not arrive by rote at a rating based on the matrix. The matrix is a guide--it is not intended to convey precision in the ratings process or reduce the decision to plotting intersections on a graph. Many small positives and negatives that affect credit quality can lead a committee to a different conclusion than what is indicated in the matrix. Most outcomes will fall within one notch on either side of the indicated rating. Larger exceptions for utilities would typically involve the influence of related unregulated entities or extraordinary disruptions in the regulatory environment.

We will use the matrix, the ranking list, and individual company reports to communicate the relative position of a company within its business risk peer group and the other factors that produce the ratings.

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OHIO AMERICAN WATER COMPANY
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2003 - 2007, INCLUSIVE

	2007	2006	2005	2004	2003	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED:						
TOTAL PERMANENT CAPITAL	$83.095	$51.354	$55.072	$80.444	$81.806	
SHORT-TERM DEBT	0.000	29.734	0.000	0.497	0.498	
TOTAL CAPITAL EMPLOYED	$83.095	$81.088	$55.072	$80.941	$82.304	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.16 %	7.74 %	6.08 %	5.93 %	6.10 %	
PREFERRED STOCK	8.20	8.19	8.14	8.00	8.44	
DIVIDEND PAYOUT RATIO	0.00 %	0.00 %	0.00 %	0.00 %	145.05 %	29.02 %
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	57.40 %	42.84 %	39.95 %	55.77 %	54.83 %	50.16 %
MINORITY INTEREST	1.42	2.32	2.18	1.50	1.55	1.79
COMMON EQUITY	41.18	54.84	57.87	42.73	43.62	48.05
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.40 %	63.80 %	39.95 %	56.03 %	55.10 %	54.46 %
MINORITY INTEREST	1.42	1.47	2.18	1.49	1.54	1.62
COMMON EQUITY	41.18	34.73	57.87	42.48	43.36	43.92
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
RATE OF RETURN ON AVERAGE COMMON EQUITY	(7.83) %	(10.47) %	(7.58) %	(3.72) %	0.52 %	(5.82) %

SEE PAGE 2 FOR NOTES.

Exhibit No. ___
Schedule PMA-3
Page 1 of 2

Ohio American Water Company
Capitalization and Financial Statistics
2003-2007, Inclusive

Notes:

(1) All capitalization and financial statistics are based upon financial statements as originally reported in each year.

(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.

Source of Information: Ohio American Annual Reports to The Public Utilities Commission of Ohio

PROXY GROUP OF SIX AUS UTILITY REPORTS WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2003 - 2007, INCLUSIVE

	2007	2006	2005	2004	2003	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$782.517	$711.614	$639.404	$597.621	$517.464	
SHORT-TERM DEBT	$19.424	$30.230	$34.559	$26.023	$33.213	
TOTAL CAPITAL EMPLOYED	$801.941	$741.844	$673.963	$623.644	$550.678	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.54 %	6.72 %	6.39 %	6.39 %	6.45 %	
PREFERRED STOCK	4.82	4.81	4.27	3.38	2.63	
CAPITAL STRUCTURE RATIOS						5 YEAR AVERAGE
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	48.99 %	47.26 %	49.69 %	50.16 %	50.25 %	49.27 %
PREFERRED STOCK	0.15	0.16	0.17	0.19	0.32	0.20
COMMON EQUITY	50.86	52.58	50.12	49.66	49.43	50.53
TOTAL	100.00 %	99.99 %	99.98 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	50.07 %	48.40 %	51.55 %	51.49 %	53.04 %	50.90 %
PREFERRED STOCK	0.14	0.15	0.17	0.19	0.31	0.20
COMMON EQUITY	49.78	51.45	48.28	48.30	46.64	48.89
TOTAL	99.99 %	100.00 %	100.00 %	99.99 %	99.99 %	99.99 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	2.58 %	3.15 %	3.85 %	3.94 %	4.10 %	3.52 %
MARKET / AVERAGE BOOK RATIO	251.92	277.99	280.75	235.85	233.77	252.02
DIVIDEND YIELD	2.38	2.21	2.50	2.85	2.96	2.58
DIVIDEND PAYOUT RATIO	34.90	69.97	64.00	72.27	75.06	63.22
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	6.85 %	8.82 %	9.72 %	9.13 %	9.69 %	8.80 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.73 X	3.81 X	4.01 X	4.22 X	3.67 X	3.89 X
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	17.14 %	18.50 %	18.60 %	19.26 %	17.26 %	18.15 %
TOTAL DEBT / TOTAL CAPITAL	50.07 %	48.40 %	51.55 %	51.49 %	53.04 %	50.91 %

See Page 2 for notes.

Exhibit No. ___
Schedule PMA-4
Page 1 of 3

Proxy Group of Six AUS Utility Reports Water Companies
Capitalization and Financial Statistics
2003-2007, Inclusive

Notes:

(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.

(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.

(3) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges divided by interest charges.

(4) Funds from operations (as defined in Note 3) as a percentage of total debt.

Selection Criteria:

The basis of selection was to include those water companies: 1) which are included in the Water Company Group of AUS Utility Reports (June 2008); 2) which have Value Line five-year EPS growth rate projections or Reuters consensus five-year EPS growth rate projections; 3) which have a Value Line adjusted beta as published in Value Line Investment Survey; and 4) which have more than 70% of their 2007 operating revenues derived from water operations. Artesian Resources Corp. was eliminated because Value Line does not publish an adjusted beta for the company. Connecticut Water Service Inc., Middlesex Water Co., and Pennichuck Corp. were eliminated because Reuters was not reporting consensus five-year EPS growth rate projections at the time of the selection of the proxy group.

The following six water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
California Water Service Group
SJW Corporation
Southwest Water Company
York Water Co.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database
EDGAR Online's I-Metrix Database
Company Annual Forms 10K

Capital Structure Based upon Permanent Capital for
the Proxy Group of Six AUS Utility Reports Water Companies
for the Years 2003 through 2007

	2007	2006	2005	2004	2003	5 YEAR AVERAGE
American States Water Company						
Long-Term Debt	46.99 %	48.61 %	50.46 %	48.93 %	52.05 %	49.41 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	53.01	51.39	49.54	51.07	47.95	50.59
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	55.88 %	51.56 %	52.61 %	52.72 %	52.76 %	53.11 %
Preferred Stock	0.09	0.09	0.09	0.08	0.07	0.08
Common Equity	44.03	48.35	47.30	47.20	47.17	46.81
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	42.86 %	43.47 %	48.07 %	48.66 %	52.41 %	47.10 %
Preferred Stock	0.51	0.52	0.61	0.61	0.67	0.58
Common Equity	56.63	56.01	51.32	50.73	46.92	52.32
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
SJW Corporation						
Long-Term Debt	47.79 %	41.83 %	42.83 %	43.77 %	45.64 %	44.33 %
Preferred Stock	0.01	0.01	0.02	0.04	0.05	0.03
Common Equity	52.20	58.16	57.35	56.19	54.31	55.64
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southwest Water Company						
Long-Term Debt	48.06 %	43.85 %	46.67 %	48.53 %	48.50 %	47.12 %
Preferred Stock	0.15	0.15	0.17	0.28	0.85	0.32
Common Equity	51.79	56.00	53.16	51.19	50.65	52.56
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	51.17 %	48.81 %	50.71 %	51.94 %	45.53 %	49.63 %
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	48.83	51.19	49.29	48.06	54.47	50.37
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Six AUS Utility Reports Water Companies						
Long-Term Debt	48.79 %	46.36 %	48.52 %	49.09 %	49.48 %	48.45 %
Preferred Stock	0.13	0.13	0.15	0.17	0.27	0.17
Common Equity	51.08	53.51	51.33	50.74	50.25	51.38
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information:
Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Data Base
EDGAR Online's I-Metrix Database
Annual Forms 10-K

Exhibit No. ___
Schedule PMA-5

Ohio American Water Company
Hypothetical Example of the Inadequacy of
A DCF Return Rate Related to Book Value
When Market Value is Greater / Less than Book Value

Line No.		1 Market Value	2 Book Value with Market to Book Ratio of 180%	3 Book Value with Market to Book Ratio of 80%
1.	Per Share	$ 24.00	$ 13.33	$ 30.00
2.	DCF Cost Rate (1)	10.00%	10.00%	10.00%
3.	Return in Dollars	$ 2.400	$ 1.333	$ 3.000
4.	Dividends (2)	$ 0.840	$ 0.840	$ 0.840
5.	Growth in Dollars	$ 1.560	$ 0.493	$ 2.160
6.	Return on Market Value	10.00%	5.55% (3)	12.50% (4)
7.	Rate of Growth on Market Value	6.50% (5)	2.05% (6)	9.00% (7)

Notes:
(1) Comprised of 3.5% dividend yield and 6.5% growth.
(2) $24.00 * 3.5% yield = $0.840.
(3) $1.333 / $24.00 market value = 5.55%.
(4) $3.000 / $24.00 market value = 12.50%.
(5) Expected rate of growth per market based DCF model.
(6) Actual rate of growth when DCF cost rate is applied to book value ($1.333 possible earnings - $0.840 dividends = $0.493 for growth / $24.00 market value = 2.05%).
(7) Actual rate of growth when DCF cost rate is applied to book value ($3.000 possible earnings - $0.840 dividends = $2.160 for growth / $24.00 market value = 9.00%).

Exhibit No. ___
Schedule PMA-6

Ohio American Water Company
Indicated Common Equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six AUS Utility Reports Water Companies

Based upon Historical and Projected Growth in DPS, EPS, and BR+SV

	1	2	3	4	5
	Average Dividend Yield (1)	Dividend Growth Component (2)	Adjusted Dividend Yield (3)	Growth Rate (4)	Indicated Common Equity Cost Rate (5)
Proxy Group of Six AUS Utility Reports Water Companies					
American States Water Co.	2.82 %	0.07 %	2.89 %	5.18 %	8.07 %
Aqua America	2.87	0.11	2.98	7.36	10.34
California Water Service Group	3.15	0.08	3.23	5.09	8.32
SJW Corporation	2.13	0.10	2.23	9.03	11.26
Southwest Water Company	2.26	0.10	2.36	9.13	11.49
York Water Co.	3.12	0.10	3.22	6.30	9.52
Average	2.73 %	0.09 %	2.82 %	7.02 %	9.83 %
Median	2.85 %	0.10 %	2.94 %	6.83 %	9.93 %

Based upon Projected Growth in EPS

	1	2	3	4	5
	Average Dividend Yield (1)	Dividend Growth Component (2)	Adjusted Dividend Yield (3)	Growth Rate (4)	Indicated Common Equity Cost Rate (5)
Proxy Group of Six AUS Utility Reports Water Companies					
American States Water Co.	2.82 %	0.10 %	2.92 %	7.00 %	9.92 %
Aqua America	2.87	0.12	2.99	8.65	11.64
California Water Service Group	3.15	0.14	3.29	8.75	12.04
SJW Corporation	2.13	0.15	2.28	14.00	16.28
Southwest Water Company	2.26	0.11	2.37	10.00	12.37
York Water Co.	3.12	0.12	3.24	8.00	11.24
Average	2.73 %	0.12 %	2.85 %	9.40 %	12.25 %
Median	2.85 %	0.12 %	2.96 %	8.70 %	11.84 %

Conclusion	
Proxy Group of Six AUS Utility Reports Water Companies	
Average	11.04 %
Median	10.89 %

Notes:

(1) From Schedule PMA-7 of this Exhibit.
(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Schedule PMA-9 of this Exhibit) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 2.82% x (1/2 x 5.18%) = 0.07%.
(3) Column 1 + Column 2.
(4) From page 1 Schedule PMA-9 of this Exhibit.
(5) Column 3 + Column 4.

Exhibit No. ___
Schedule PMA-7

Ohio American Water Company
Derivation of Dividend Yield for Use in the
Discounted Cash Flow Model

Proxy Group of Six AUS Utility Reports Water Companies	Dividend Yield: Spot (6/16/2008) (1)	Dividend Yield: Average of Last 3 Months (2)	Dividend Yield: Average Dividend Yield (3)
American States Water Co.	2.77 %	2.87 %	2.82 %
Aqua America	2.97	2.77	2.87
California Water Service Group	3.19	3.10	3.15
SJW Corporation	2.10	2.16	2.13
Southwest Water Company	2.30	2.22	2.26
York Water Co.	3.06	3.18	3.12
Average	2.73 %	2.72 %	2.73 %
Median	2.87 %	2.82 %	2.85 %

Notes:
(1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 6/16/08.
(2) The average 3-month dividend yield was computed by relating the indicated annualized dividend rate and market price on the last trading day of each of the three months ended May 31, 2008.
(3) Equal weight has been given to the 3-month average and spot dividend yield. This provides recognition of current conditions, but does not place undue emphasis thereon.

Source of Information: S&P Stock Guides March-May 2008
Report Date: 6/2/2008
yahoo.finance.com

Exhibit No. ___
Schedule PMA-8

Ohio American Water Company
Current Institutional Holdings (1) and Individual Holdings (2) for
the Proxy Group of Six AUS Utility Reports Water Companies

Proxy Group of Six AUS Utility Reports Water Companies	1 June 2008 Percentage of Institutional Holdings	2 June 2008 Percentage of Individual Holdings (1)
American States Water Co.	57.84	42.16 %
Aqua America	49.46	50.54
California Water Service Group	52.85	47.15
SJW Corporation	48.26	51.74
Southwest Water Company	50.31	49.69
York Water Co.	16.96	83.04
Average	45.95 %	54.05 %

Notes: (1) (1 - column 1).

Source of Information: today.reuters.com, updated June 17, 2008

Thte American Water Company
Historical and Projected Growth

	1	2	3	4	5	6		7	8	9	10	11	12	13
	Value Line Historical Five Year Growth Rate (1)		Five-Year Historical BR + SV (2)	Value Line Projected 2004-06 to 2010-12 Growth Rate (1)		Reuters Mean Consensus Projected Five Year Growth Rate		Average Projected Five Year Growth Rate in EPS (3)	Projected Five Year BR + SV (4)	Range of Growth Rates			Median of all Growth Rates	Average of Midpoint and Median of all Growth Rates (5)
TO DO														
Proxy Group of Six AUS Utility Reports Water Companies	DPS	EPS		DPS	EPS	EPS	No. of Est.			Low	High	Midpoint		
American States Water Co.	1.50 %	1.50 %	4.61 %	5.00 %	10.00 %	4.00	[1]	7.00 %	8.24 %	1.50 %	10.00 %	5.75 %	4.61 %	6.18 %
Aqua America	7.00	8.00	8.85	9.50	7.50	9.50	[4]	8.65	4.68	4.68	9.50	7.22	7.50	7.36
California Water Service Group	0.50	4.50	5.17	1.00	9.50	8.00	[4]	5.75	7.72	0.50	9.50	5.00	5.17	5.09
SJW Corporation	5.50	9.50	7.09	NA	NA	14.00	[2]	14.00	NA	5.50	14.00	9.75	9.30	9.09
Southwest Water Company	9.00	(18.50)	8.41	7.50	14.00	6.00	[2]	10.00	7.51	6.00 (6)	14.00 (6)	10.00	8.26 (6)	9.13
York Water Co.	5.05 (5)	8.45 (5)	4.78	NA	NA	6.00	[1]	6.00	NA	4.78	9.00	6.90	6.20	6.90
Average	4.91 %	6.99 % (6)	6.34 %	5.75 %	10.25 %	8.50 %		8.40 %	7.03 %	3.82 %	10.83 %	7.36 %	6.67 %	7.02 %
Median	5.73 %	8.48 % (6)	6.05 %	6.25 %	9.75 %	8.00 %		8.70 %	7.62 %	4.71 %	9.50 %	8.61 %	6.86 %	6.83 %

Notes:
(1) As shown on pages 8 through 14 of this Schedule. Historical growth rates are five-year compound growth rates.
(2) From page 2 of this Schedule.
(3) Average of Columns 5 and 6.
(4) From page 6 of this Schedule.
(5) Calculated using the same methodology as Value Line Investment Survey, i.e., three-year base periods ending 2007.
(6) Average of Columns 1, 2, 3, 4, 5, 6, and 9.
(7) From Column 7.
(8) Excludes negatives.
(9) Average of Column 11 and Column 12.

Source of Information: Value Line Investment Survey, April 25, 2008
Reuters Company Research June 12, 2008

Exhibit No. ___
Schedule PMA-9
Page 1 of 13

Ohio American Water Company
Calculation of Historical BR + SV

Proxy Group of Six AUS Utility Reports Water Companies	1 BR (1)	2 S Factor (2)	3 V Factor (3)	4 SV (4)	5 BR + SV (5)
American States Water Co.	3.30 %	2.83 %	49.92 %	1.31 %	4.61 %
Aqua America	4.51	3.49	70.00	2.44	6.95
California Water Service Group	1.66	6.50	54.05	3.51	5.17
SJW Corporation	7.04	0.10	54.99	0.05	7.09
Southwest Water Company	3.14	12.14	51.68	6.27	9.41
York Water Co.	2.48	3.42	66.98	2.29	4.78
Average	3.69 %	4.71 %	57.93 %	2.65 %	6.34 %
Median	3.22 %	3.46 %	54.52 %	2.37 %	6.06 %

Notes: (1) From column 6, page 3 of this Schedule.
(2) From column 12, page 4 of this Schedule.
(3) From column 7, page 5 of this Schedule.
(4) Column 2 * column 3.
(5) Column 1 + column 4.

Ohio American Water Company
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Six AUS Utility Reports Water Companies
for the Years 2003 -2007

Proxy Group of Six AUS Utility Reports Water Companies	1 2007	2 2006	3 2005	4 2004	5 2003	6 Five-Year Average 2003-2007 Internal Growth Rate, i.e., BR
American States Water Co.						
Common Equity Return Rate	9.57 %	8.43 %	10.38 %	7.99 %	5.59 %	
Retention Ratio	41.30	32.40	43.59	25.17	(12.98)	
Internal Growth Rate (1)	3.95	2.73	4.52	2.01	(0.73)	3.30 % (2)
Aqua America						
Common Equity Return Rate	10.01 %	10.81 %	11.69 %	11.39 %	12.30 %	
Retention Ratio	32.89	36.93	43.90	42.75	43.61	
Internal Growth Rate (1)	3.29	3.92	5.13	4.87	5.36	4.51
California Water Service Group						
Common Equity Return Rate	8.16 %	7.56 %	9.31 %	9.72 %	8.68 %	
Retention Ratio	22.58	14.21	25.81	22.97	8.79	
Internal Growth Rate (1)	1.84	1.07	2.40	2.23	0.76	1.66
SJW Corporation						
Common Equity Return Rate	8.31 %	18.19 %	11.48 %	11.27 %	11.68 %	
Retention Ratio	42.61	72.66	55.23	52.90	52.56	
Internal Growth Rate (1)	3.54	13.22	6.34	5.96	6.14	7.04
Southwest Water Company						
Common Equity Return Rate	(3.11) %	5.99 %	6.38 %	4.40 %	10.20 %	
Retention Ratio	NMF	46.26	42.00	21.88	64.23	
Internal Growth Rate (1)	NMF	2.77	2.26	0.96	6.55	3.14
York Water Co.						
Common Equity Return Rate	9.67 %	10.52 %	11.85 %	12.17 %	11.65 %	
Retention Ratio	17.66	20.87	24.70	25.86	21.04	
Internal Growth Rate (1)	1.71	2.20	2.93	3.15	2.45	2.49
Average						3.69 %
Median						3.22 %

Notes: (1) The internal growth rate is calculated by multiplying the common equity return rate by the retention ratio (100% minus the dividend payout ratio). All data are on a consolidated basis.

(2) Excludes negatives.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database
EDGAR Online's I-Metrix Database
Company Annual Forms 10-K

Ohio American Water Company
Calculation of Five Year Average Growth in Common Shares Outstanding (1), i.e., S Factor

Proxy Group of Six AUS Utility Reports Water Companies	1 2002 Common Shares Outstanding (1)	2 02-03 Growth	3 2003 Common Shares Outstanding (1)	4 03-04 Growth	5 2004 Common Shares Outstanding (1)	6 04-05 Growth	7 2005 Common Shares Outstanding (1)	8 05-06 Growth	9 2006 Common Shares Outstanding (1)	10 06-07 Growth	11 2007 Common Shares Outstanding (1)	12 Five Year Average Common Share Growth
American States Water Co.	15.181	0.20 %	15.212	10.12 %	16.752	0.27 %	16.798	1.49 %	17.049	1.07 %	17.231	3.03 %
Aqua America	113.195	9.06	123.452	3.02	127.180	1.41	128.969	2.60	132.325	1.34	134.099	3.45
California Water Service Group	15.192	11.53	16.932	8.48	18.367	0.13	18.390	12.33	20.657	0.04	20.668	6.50
SJW Corporation	16.270	0.00	16.270	0.00	16.270	0.00	16.270	0.07	16.282	0.44	16.352	0.10
Southwest Water Company	13.682	18.38	16.173	26.92	20.356	3.75	21.129	12.85	23.802	0.00	23.802	13.14
York Water Co.	9.547	0.88	9.629	7.29	10.331	0.67	10.400	7.70	11.201	0.57	11.265	3.42
Average												4.71 %
Median												3.45 %

Notes: (1) Year-end shares outstanding.
(2) Excludes negatives.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database
EDGAR Online's I-Metrix Database
Company Annual Forms 10-K

Exhibit No. ___
Schedule PMA-9
Page 4 of 13

Ohio American Water Company
Calculation of the Premium/Discount of a
Company's Stock Price Relative to its Book Value, i.e., V Factor

	1	2	3	4	5	6	7
	2003 Market to Book Ratio (1)	2004 Market to Book Ratio (1)	2005 Market to Book Ratio (1)	2006 Market to Book Ratio (1)	2007 Market to Book Ratio (1)	Five Year Average Market to Book Ratio	V Factor (2)
Proxy Group of Six AUS Utility Reports Water Companies							
American States Water Co.	180.32 %	164.93 %	191.52 %	228.93 %	233.23 %	199.67 %	49.92 %
Aqua America	295.53	291.42	383.61	376.47	319.27	338.32	70.00
California Water Service Group	199.83	212.56	231.58	228.96	215.26	217.64	54.05
SJW Corporation	157.17	178.24	210.59	286.55	278.31	222.17	54.99
Southwest Water Company	208.16	222.48	185.84	215.62	204.75	206.97	51.68
York Water Co.	286.90	287.48	311.01	339.98	287.96	302.67	66.96
Average						247.07 %	57.93 %
Median						219.91 %	54.52 %

Notes: (1) Market to Book Ratio = average of yearly high-low market price divided by the average of beginning and ending year's balance of book common equity per share.
(2) (1 - (100 / column 6)).

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database
EDGAR Online's I-Metrix Database
Company Annual Forms 10-K

Exhibit No. ___
Schedule PMA-9
Page 5 of 13

Ohio American Water Company
Calculation of Projected BR + SV

	1	2	3	4	5	6	7	8	9	10	11
	Common Shares Outstanding (1) (000,000)			Projected 2011 - 2013 (1)							
Proxy Group of Six AUS Utility Reports Water Companies	Actual 2007	Projected 2011-2013	S Factor (2)	High Stock Price	Low Stock Price	Book Value	Average Stock Price (3)	V Factor (4)	SV (5)	BR (6)	BR + SV (7)
American States Water Co.	17.23	19.00	1.97 %	$60.00	$40.00	$19.20	$50.00	61.60 %	1.21 %	7.03 %	8.24 %
Aqua America	133.40	140.00	0.97	35.00	20.00	9.45	27.50	65.64	0.64	3.99	4.63
California Water Service Group	20.67	24.00	3.03	60.00	40.00	21.65	50.00	56.70	1.72	6.00	7.72
SJW Corporation	18.36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Southwest Water Company	24.27	28.00	2.90	20.00	14.00	7.90	17.00	57.06	1.65	6.88	7.51
York Water Co.	11.27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			2.22 %					60.25 %	1.31 %	5.72 %	7.03 %
Median			2.44 %					59.33 %	1.43 %	6.93 %	7.62 %

NA = Not Available

Notes:
(1) From pages 8 through 13 of this Schedule.
(2) The S Factor is the six or five year compound growth rate between the 2007 and 2012 (mid-point of 2011-2013 projection) common shares outstanding.
(3) The Average Stock Price is the average of column 4 and column 5.
(4) (1 - (column 6 / column 7))
(5) Column 3 * column 8.
(6) From page 7, column 14 of this Schedule.
(7) Column 9 + column 10.

Source of Information: Value Line Investment Survey, April 25, 2008

Exhibit No. ___
Schedule PMA-9
Page 6 of 13

Ohio American Water Company
Projected Internal Growth Rate

Proxy Group of Six AUS Utility Reports Water Companies	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	2007			2011-2013					2011-2013					
	Common Equity (%) (1)	Total Capital ($ mil) (1)	Common Equity ($ mil) (2)	Common Equity (%) (1)	Total Capital ($ mil) (1)	Common Equity ($ mil) (3)	Annual Common Equity Growth Rate (4)	ROE Adjustment Factor (5)	Return on Common Equity (1)	Return on Average Common Equity (6)	EPS (1)	DPS (1)	Retention Ratio (7)	Projected Internal Growth (8)
American States Water Co.	53.10 %	$889.40	$302.35	50.00 %	$780.00	$365.00	3.84 %	1.02 %	13.50 %	13.77 %	$2.45	$1.20	51.02 %	7.03 %
Aqua America	44.60	2,181.40	972.99	45.00	2,700.00	1,323.00	6.34	1.03	11.50	11.85	1.10	0.75	33.64	3.86
California Water Service Group	56.60	674.90	381.89	51.50	1,900.00	515.08	6.16	1.03	11.50	11.85	2.45	1.21	50.61	6.00
SJW Corporation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Southwest Water Company	60.00	290.00	145.00	60.00	550.00	330.00	17.85	1.06	9.50	10.28	0.70	0.30	57.14	5.86
York Water Co.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average														5.72 %
Median														5.93 %

NA = Not Available

Notes:
(1) From pages 8 through 13 of this Schedule.
(2) Column 1 * column 2.
(3) Column 4 * column 5.
(4) Five year compound growth rate in common equity from 2007 to 2011-2013 or ((((column 5 / column 3) ^ (1/5)) - 1)).
(5) 2 * ((1 + column 7) / (2 + column 7)).
(6) Column 8 * column 9.
(7) 1 - (column 12 / column 11).
(8) Column 10 * column 13.

Source of Information: Value Line Investment Survey, April 25, 2008

Exhibit No. ___
Schedule PMA-9
Page 7 of 13

AMER. STATES WATER NYSE-AWR

RECENT PRICE 37.10 | P/E RATIO 21.3 (Trailing: 23.0 / Median: 20.0) | RELATIVE P/E RATIO 1.34 | DIV'D YLD 2.7% | VALUE LINE

TIMELINESS 4 Lowered 8/15/08
SAFETY 3 New 2/1/08
TECHNICAL 3 Lowered 9/7/08
BETA 1.00 (1.00 = Market)

2011-13 PROJECTIONS

	Price	Gain	Annl Total Return
High	60	(+60%)	13%
Low	40	(+10%)	5%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	1	1	0	0	1	0	0
Options	1	0	2	2	0	4	0	0	0
to Sell	1	0	2	2	0	4	0	0	0

Institutional Decisions

	2Q2008	3Q2008	4Q2008
to Buy	65	63	65
to Sell	44	53	52
Hld(000)	9778	10424	9917

Target Price Range 2011 | 2012 | 2013

% TOT. RETURN 3/08

	3 YR.	5 YR.
STOCK	3.1	-11.0
S&P 500	-54.2	-19.2
INDUSTRY	79.9	126.5

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
	10.30	9.27	10.43	11.03	11.37	11.44	11.82	12.91	12.17	13.06	13.78	13.98	13.81	14.06	15.76	17.49	17.75	18.50	Revenues per sh	22.35
	1.81	1.67	1.89	1.75	1.75	1.85	2.04	2.26	2.29	2.63	2.64	2.08	2.23	2.54	2.89	3.31	3.60	3.90	"Cash Flow" per sh	4.60
	1.15	1.11	.95	1.03	1.13	1.04	1.06	1.19	1.28	1.26	1.34	.78	1.05	1.32	1.39	1.82	1.89	1.95	Earnings per sh A	2.45
	.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.89	.90	.91	.95	1.00	1.05	Div'd Decl'd per sh B=	1.20
	2.31	1.90	2.43	2.19	2.49	2.56	3.11	4.30	3.65	3.18	2.68	2.76	5.03	4.24	3.91	2.89	3.70	3.35	Cap'l Spending per sh	3.85
	8.85	9.85	10.87	10.29	11.61	11.26	11.48	11.82	12.74	13.22	14.65	13.97	15.01	15.72	16.64	17.53	17.75	18.85	Book Value per sh	19.20
	9.98	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	16.12	15.16	15.21	16.75	16.38	17.05	17.23	17.75	18.00	Common Shs Outst'g C	19.00
	10.8	13.4	12.6	11.5	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.9	23.2	21.8	27.7	24.0	Bold figures are Value Line estimates		Avg Annl P/E Ratio	21.0
	.84	.78	.84	.78	.78	.84	.81	.97	1.00	.86	1.00	1.82	1.23	1.17	1.50	1.26			Relative P/E Ratio	1.40
	8.3%	8.9%	8.6%	8.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.8%	3.5%	3.8%	3.1%	2.6%	2.5%			Avg Annl Div'd Yield	2.4%
	148.1	173.4	184.0	197.5	209.2	212.7	228.0	238.2	268.6	301.4	315	335	Revenues ($mill)	425
	14.5	16.1	18.0	20.4	20.3	11.9	16.6	22.5	23.1	28.0	33.8	37.0	Net Profit ($mill)	50.0
	40.9%	46.8%	46.7%	43.0%	39.9%	43.8%	27.4%	47.0%	40.5%	42.6%	42.6%	42.0%	Income Tax Rate	42.0%
	--	--	--	--	--	--	--	--	12.2%	8.5%	NM	NM	AFUDC % to Net Profit	NM
	43.6%	51.0%	47.5%	54.9%	52.0%	52.8%	47.7%	50.4%	48.6%	46.9%	47.0%	48.0%	Long-Term Debt Ratio	50.0%
	56.7%	48.4%	51.9%	44.7%	48.0%	46.8%	52.3%	49.6%	51.4%	53.1%	53.0%	52.0%	Common Equity Ratio	50.0%
	377.1	398.2	371.1	442.6	444.4	442.3	480.4	532.5	561.6	559.1	595	625	Total Capital ($mill)	735
	414.6	469.6	509.1	539.6	563.3	592.3	664.2	713.2	759.6	776.4	800	825	Net Plant ($mill)	925
	7.8%	8.6%	6.4%	6.1%	6.5%	4.8%	5.2%	5.4%	6.0%	6.7%	7.0%	7.5%	Return on Total Cap'l	8.0%
	9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	6.5%	6.5%	6.1%	8.3%	10.5%	11.5%	Return on Shr. Equity	12.5%
	9.4%	10.1%	9.3%	10.1%	9.5%	5.5%	6.5%	6.5%	6.1%	8.3%	10.5%	11.5%	Return on Com Equity	13.5%
	2.1%	2.9%	3.0%	3.6%	3.3%	NMF	1.6%	2.8%	2.7%	3.8%	5.0%	5.5%	Retained to Com Eq	7.0%
	78%	72%	86%	85%	85%	153%	84%	57%	67%	58%	54%	53%	All Div'ds to Net Prof	45%

CAPITAL STRUCTURE as of 12/31/07
Total Debt $305.0 mill. Due in 5 Yrs $41.1 mill
LT Debt $267.2 mill. LT Interest $24.7 mill.
(LT interest earned: 3.4x; total interest coverage: 3.2x) (47% of Cap'l)

Leases, Uncapitalized: None
Pension Assets-12/07 $70.9 mill.
Oblig. $85.4 mill
Pfd Stock None.

Common Stock 17,242,917 shs.
MARKET CAP: $626 million (Small Cap)

CURRENT POSITION ($MILL.)

	2005	2006	12/31/07
Cash Assets	13.0	3.2	1.7
Receivables	13.3	14.6	16.1
Inventory (Avg Cst)	1.4	1.6	1.6
Other	41.2	44.8	43.7
Current Assets	68.9	64.4	63.1
Accts Payable	15.7	24.0	29.1
Debt Due	27.6	32.6	37.6
Other	30.3	29.3	27.3
Current Liab.	77.6	85.9	94.2
Fix. Chg. Cov.	413%	268%	314%

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	3.5%	4.0%	6.0%
"Cash Flow"	5.0%	4.0%	8.0%
Earnings	3.0%	1.5%	10.0%
Dividends	1.0%	1.5%	6.0%
Book Value	4.5%	4.5%	3.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	49.8	59.5	68.1	57.8	235.2
2006	54.3	63.0	75.0	66.3	258.6
2007	72.3	78.3	75.8	74.8	301.4
2008	74.0	82.0	81.0	78.0	315
2009	77.0	87.0	87.0	84.0	335

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	.22	.34	.47	.29	1.32
2006	.35	.36	.32	.30	1.33
2007	.40	.42	.44	.35	1.52
2008	.38	.46	.55	.41	1.80
2009	.41	.50	.59	.46	1.95

Calendar	QUARTERLY DIVIDENDS PAID B= Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.221	.221	.221	.225	.89
2005	.225	.225	.225	.225	.90
2006	.225	.225	.225	.235	.91
2007	.235	.235	.235	.250	.96
2008	.250				

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to more than 250,000 customers in 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to nearly 23,250 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/08). Has roughly 573 employees. Officers & directors own 4.4% of common stock (4/08 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks, Inc: CA. Addr.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tele.: 909-394-3600. Internet: www.aswater.com.

Although not as strong as we originally thought, American States Water wrapped up 2007 in solid fashion. The company posted share earnings of $0.35 in the fourth quarter, 17% better than the year before. Revenues increased 12% to $74 million, thanks primarily to an improved regulatory environment. Elevated operating costs caused it to miss our earlier expectations, though.

This year should be good, too. Although heavy precipitation in the Golden State in recent months will likely limit earnings growth in the first quarter, the wet weather has replenished the company's water supply for the summer and sets the stage for strong comparisons in the quarters to follow. Likewise, so does an improving regulatory environment. The once draconian review process has become much friendlier in recent times, with quicker and more favorable decisions on general rate cases providing optimism going forward. The implementation of a water revenue adjustment mechanism, a strong possibility in our opinion, would further streamline the decision-making process and perhaps even safeguard revenues from variations in weather conditions. For now, though, we look for earnings growth of 11% in 2008.

Spending needs are a concern, longer term, however. Like its fellow water utility providers, American's infrastructure is aging and in need of renovation. In fact, maintenance costs increased 45% in the latest quarter. Unfortunately, it does not have the means to foot the bill on its own, and will probably have to tap debt and/or equity markets to meet the growing requirements we envision for the foreseeable future. We look for share-net growth to slow to 8% in 2009 due to a higher interest expense and increased share count. Meanwhile, limited capital is precluding American from increasing its coverage via acquisitions. The industry has been a hotbed of M&A activity in recent years.

Investors will probably want to take a pass on this untimely issue. Its 3- to 5-year appreciation potential is below average based on the capital requirements mentioned above. And the dividend yield is nothing special when compared with other income vehicles out there.

Andre J. Costanza *April 25, 2008*

(A) Primary earnings. Excludes nonrecurring gains: '91, 73¢; '92, 13¢; '04, 14¢; '05, 23¢; '06, 8¢. Next earnings report due early May.
(B) Dividends historically paid in early March, June, September, and December. ▪ Div'd reinvestment plan available.
(C) In millions, adjusted for splits.

Company's Financial Strength	B++
Stock's Price Stability	75
Price Growth Persistence	75
Earnings Predictability	80

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AQUA AMERICA NYSE-WTR

RECENT PRICE 18.51 | P/E RATIO 21.3 (Trailing: 23.7 Median: 24.0) | RELATIVE P/E RATIO 1.34 | DIV'D YLD 2.7% | VALUE LINE

TIMELINESS 4 Raised 3/28/97
SAFETY 3 Lowered 8/1/03
TECHNICAL 3 Raised 4/18/08
BETA .85 (1.00 = Market)

2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+90%)	15%
Low	20	(+10%)	4%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	0	0	0	0	0	0
Options	0	2	3	2	1	1	0	0	1
to Sell	0	2	2	3	1	1	0	0	0

Institutional Decisions

	2Q2007	3Q2007	4Q2007
to Buy	109	84	115
to Sell	109	114	88
Hld(000)	54821	55922	59981

High: 8.5 11.5 11.5 12.0 14.8 15.0 16.8 16.5 26.2 29.8 26.6 22.0
Low: 4.4 7.2 7.6 6.3 8.4 9.6 11.8 14.2 17.5 20.1 18.9 18.0

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
···· Relative Price Strength
3-for-2 split 7/95
4-for-3 split 5/98
6-for-5 split 12/02
2-for-1 split 12/01
3-for-2 split 12/05
4-for-3 split 12/06
Options: Yes
Shaded area indicates recession

Target Price Range 2011 2012 2013

% TOT. RETURN 3/08

	AQUA STOCK	VALUELINE INDEX
1 yr	-14.5	-11.8
3 yr	4.7	13.2
5 yr	56.1	106.5

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
1.82	1.79	1.82	1.84	1.86	2.02	2.09	2.45	2.45	2.70	2.85	2.97	3.48	3.85	4.03	4.82	4.80	4.95	Revenues per sh	5.65
.39	.42	.42	.47	.51	.56	.61	.72	.76	.86	.94	.98	1.09	1.21	1.25	1.37	1.55	1.60	"Cash Flow" per sh	1.85
.24	.24	.26	.28	.30	.34	.40	.42	.47	.51	.54	.57	.64	.71	.70	.71	.80	.83	Earnings per sh A	1.10
.20	.21	.21	.22	.23	.24	.26	.27	.28	.30	.32	.35	.37	.40	.44	.48	.55	.59	Div'd Decl'd per sh B=	.73
.50	.47	.46	.52	.48	.58	.52	.96	1.16	1.08	1.20	1.32	1.54	1.84	2.05	1.78	2.75	2.20	Cap'l Spending per sh	2.30
2.09	2.20	2.41	2.46	2.60	2.84	3.21	3.42	3.85	4.15	4.36	5.34	5.89	6.30	6.86	7.32	8.10	8.30	Book Value per sh	9.45
51.20	50.40	50.71	53.74	85.76	87.47	72.20	108.80	111.82	113.07	113.19	120.45	127.18	128.97	132.33	133.46	136.00	137.00	Common Shs Outst'g C	140.00
12.5	14.4	12.5	12.0	16.6	17.8	22.5	21.2	18.2	33.6	23.5	24.5	25.1	31.8	34.7	32.0	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	25.0
.76	.85	.88	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.40	1.33	1.89	1.67	1.68			Relative P/E Ratio	1.65
6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%			Avg Ann'l Div'd Yield	2.7%
151.0	257.3	276.5	307.3	322.0	367.2	442.0	496.8	539.5	582.5	650	680	Revenues ($mill)	780
28.8	45.0	50.7	58.8	62.7	67.3	80.0	91.2	92.6	95.0	115	120	Net Profit ($mill)	155
40.5%	36.4%	36.8%	39.3%	38.5%	39.3%	38.4%	36.4%	36.8%	36.9%	39.0%	39.0%	Income Tax Rate	39.0%
--	--	--	--	--	--	--	--	2.0%	3.1%	2.5%	2.5%	AFUDC % to Net Profit	2.0%
52.7%	52.5%	52.8%	52.2%	54.2%	51.4%	50.0%	52.0%	51.9%	55.1%	52.0%	52.0%	Long-Term Debt Ratio	51.0%
46.5%	45.2%	47.0%	47.7%	45.5%	48.6%	50.0%	48.0%	48.1%	44.6%	48.0%	48.0%	Common Equity Ratio	49.0%
495.6	792.7	901.1	990.4	1096.2	1355.7	1497.3	1690.4	1904.4	2191.4	2300	2375	Total Capital ($mill)	2700
609.8	1135.4	1251.4	1388.1	1490.8	1624.3	2063.0	2289.0	2506.0	2792.8	3500	3200	Net Plant ($mill)	3625
7.6%	7.6%	7.4%	7.8%	7.9%	8.4%	8.7%	8.9%	8.6%	8.3%	5.0%	4.0%	Return on Total Cap'l	6.5%
12.3%	12.2%	11.7%	12.3%	12.7%	13.2%	13.7%	14.2%	10.0%	9.7%	10.5%	12.5%	Return on Shr. Equity	11.5%
12.4%	12.5%	11.7%	12.4%	12.7%	13.2%	13.7%	14.2%	10.0%	9.7%	10.5%	12.5%	Return on Com Equity	11.5%
4.5%	4.5%	4.7%	5.1%	5.2%	4.2%	4.6%	4.9%	3.7%	3.2%	3.5%	5.5%	Retained to Com Eq	4.0%
64%	65%	60%	59%	59%	69%	67%	66%	63%	68%	65%	69%	All Div'ds to Net Prof	66%

CAPITAL STRUCTURE as of 12/31/07
Total Debt $1,285.9 mill. Due in 5 Yrs $215.0 mill.
LT Debt $1215.1 mill. LT Interest $65.8 mill.
(LT interest earned: 3-bc total interest coverage: 3.1x) (55% of Cap'l)

Pension Assets-12/07 $147.8 mill. Oblig. $194.5 mill.

Pfd Stock None
Common Stock 133,425,687 shares as of 2/11/08

MARKET CAP: $2.5 billion (Mid Cap)

CURRENT POSITION ($MILL.)

	2005	2006	12/31/07
Cash Assets	11.9	44.0	14.5
Receivables	82.7	72.1	82.9
Inventory (Avg Cst)	7.8	10.2	8.8
Other	7.6	8.4	9.3
Current Assets	90.0	134.7	115.5
Accts Payable	55.5	48.4	45.8
Debt Due	165.1	150.4	80.8
Other	44.7	55.8	56.6
Current Liab.	263.3	255.6	183.2
Fix. Chg. Cov.	377%	360%	332%

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '04-'06 to '11-'13
Revenues	7.5%	8.5%	6.0%
"Cash Flow"	10.0%	8.0%	7.0%
Earnings	9.0%	8.0%	7.5%
Dividends	6.5%	7.0%	9.5%
Book Value	9.5%	11.0%	6.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	114.0	123.1	136.8	122.9	496.8
2006	117.9	131.7	147.0	136.9	533.5
2007	137.3	150.6	165.5	149.1	602.5
2008	145	165	185	155	650
2009	150	175	195	160	680

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.15	.17	.22	.17	.71
2006	.13	.17	.21	.19	.70
2007	.13	.17	.21	.19	.71
2008	.20	.24	.24	.22	.90
2009	.21	.25	.24	.23	.93

QUARTERLY DIVIDENDS PAID B=

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.09	.09	.09	.093	.37
2005	.093	.093	.098	.107	.40
2006	.107	.107	.115	.115	.44
2007	.115	.115	.125	.125	.48
2008	.125				

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately 2.8 million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Divested lines of four non-water businesses in '97; telemarketing group in '03; and others. Acquired AquaSource, 7/03; Consumers Water, 4/06; and others. Water supply revenues '07: residential, 60%; commercial, 14%; industrial & other, 26%. Officers and directors own 1.4% of the common stock (4/08 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com

We look for Aqua America to post a healthy share-net advance in 2008. We expect the water utility to earn $0.90 a share this year, which represents a 27% gain over the year-ago tally. Aqua completed 26 acquisitions in 2007, and the larger customer base ought to help earnings. Moreover, it has numerous rate applications currently in progress in nine of its 18 states, which together amount to requests for more than $67 million in new revenue. Finally, margins should expand somewhat this year, as a number of expenses that were incurred in 2007 are not likely to reappear. A withdrawn rate case application in Florida took a toll, as did high taxes related to an acquisition in New York. Aqua introduced a new customer information system, replacing 35 separate, regional billing locations. It had to overstaff its service department until the new network was fully operational, in effect running two parallel networks, which hurt results. Moreover, the new billing system has more stringent requirements for writing down bad customer debt, so that cost item was higher than normal. Aqua will likely make fewer acquisitions this year. The company has sizable debt loads and little cash on its balance sheet, which limits its ability to add new parts. However, management has expressed interest in making fewer but larger deals. This approach makes sense, in our view, because larger municipal utilities should be less expensive to integrate. Despite the strong growth prospects, these shares are untimely (Rank: 4). Investors should be aware of some problems that may arise in the year ahead. The city of Fort Wayne, Indiana has seized a sizable amount of land under the eminent domain doctrine. This action has deprived Aqua of about a third of its customers in that city. Aqua has deemed the government's compensation for the loss inadequate, and is pursuing legal action. Meanwhile, the housing market continues to struggle, which may make regulators wary of allowing major rate increases. Income-oriented accounts ought to look elsewhere, as well. Aqua will likely continue to make small adjustments to its dividend. However, the raises are not likely to improve the yield considerably.

Christopher Robertson *April 25, 2008*

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 6¢; '03, 4¢. Excl. gain from disc. operations: '96, 2¢. May not sum due to rounding. Next earnings report due early May.
(B) Dividends historically paid in early March, June, Sept. & Dec. = Div'd. reinvestment plan available (3% discount).
(C) In millions, adjusted for stock splits.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	80
Earnings Predictability	100

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CALIFORNIA WATER NYSE-CWT

RECENT PRICE 40.57 | PE RATIO 23.6 (Trailing: 27.0 Median: 22.0) | RELATIVE PE RATIO 1.48 | DIV'D YLD 2.9% | VALUE LINE

TIMELINESS 3 Raised 3/7/08
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Lowered 2/22/08
BETA 1.10 (1.00 = Market)

2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+50%)	12%
Low	40	(Nil)	2%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	1	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2007	4Q2007	1Q2008
to Buy	54	46	52
to Sell	43	46	49
Hld(000)	8564	9561	9554

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
	12.29	13.34	12.59	13.17	14.48	15.48	14.75	15.98	16.15	16.28	17.33	16.37	17.18	17.44	16.20	17.76	18.80	20.45	Revenues per sh	24.25
	1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.76	2.92	2.20	2.85	2.51	2.83	3.03	2.71	3.12	3.40	3.75	"Cash Flow" per sh	4.25
	1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.69	1.31	.94	1.25	1.21	1.46	1.47	1.34	1.50	1.75	1.95	Earnings per sh A	2.45
	.93	.96	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.14	1.15	1.16	1.17	1.19	Div'd Decl'd per sh B ■	1.21
	3.09	2.63	2.36	2.17	2.83	2.51	2.74	3.44	2.45	4.89	5.82	4.39	3.73	4.01	4.28	3.68	3.55	3.70	Cap'l Spending per sh	3.90
	10.51	10.90	11.56	11.72	12.22	13.00	13.33	13.43	12.99	12.95	13.12	14.44	15.08	15.79	16.15	16.59	19.05	19.75	Book Value per sh C	21.65
	11.98	11.38	12.49	12.56	12.62	12.62	12.62	12.94	15.15	16.10	15.10	16.93	16.37	16.39	20.58	20.67	21.25	21.75	Common Shs Outst'g D	24.00
	14.1	13.6	14.1	13.7	13.9	12.6	17.8	17.8	19.6	27.1	19.8	22.1	20.1	24.8	29.2	28.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
	.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.26	1.06	1.33	1.58	1.37			Relative P/E Ratio	1.40
	6.1%	5.2%	5.8%	6.4%	5.8%	4.8%	4.2%	4.6%	4.3%	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%			Avg Ann'l Div'd Yield	2.4%
							1883	208.4	244.8	348.8	285.2	277.1	315.6	320.7	334.7	367.1	400	445	Revenues ($mill)	510
							18.4	18.8	20.0	14.4	18.1	19.4	26.8	27.2	25.6	31.2	37.0	43.0	Net Profit ($mill)	60.0
							36.4%	37.9%	42.3%	39.4%	38.7%	38.9%	39.5%	42.4%	37.4%	39.5%	41.8%	41.6%	Income Tax Rate	41.0%
							--	--	--	--	--	10.3%	3.2%	3.8%	10.8%	8.3%	5.0%	5.0%	AFUDC % to Net Profit	5.0%
							44.2%	46.9%	48.0%	50.3%	55.3%	50.2%	48.9%	48.9%	43.5%	42.8%	44.0%	45.5%	Long-Term Debt Ratio	48.0%
							54.7%	52.9%	50.2%	48.8%	44.8%	48.1%	50.5%	51.1%	56.9%	56.6%	56.0%	54.0%	Common Equity Ratio	51.5%
							358.6	338.8	388.6	462.7	452.1	498.4	565.9	568.1	679.1	674.9	720	795	Total Capital ($mill)	1080
							478.3	515.4	562.0	624.3	687.8	758.5	803.3	882.7	941.5	1010.2	1060	1080	Net Plant ($mill)	1225
							7.8%	7.8%	6.8%	5.3%	5.8%	6.6%	6.1%	6.3%	5.2%	5.8%	6.5%	7.0%	Return on Total Cap'l	7.5%
							10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	8.9%	9.3%	6.8%	8.1%	9.0%	10.5%	Return on Shr. Equity	11.5%
							10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	9.0%	9.3%	6.8%	8.1%	9.0%	10.5%	Return on Com Equity	11.5%
							2.8%	3.5%	1.8%	NMF	1.8%	.7%	2.1%	2.7%	1.0%	1.8%	3.0%	4.5%	Retained to Com Eq	6.0%
							.74%	70%	82%	119%	80%	91%	77%	78%	86%	77%	67%	57%	All Div'ds to Net Prof	48%

CAPITAL STRUCTURE as of 12/31/07
Total Debt $291.9 mill. Due in 5 Yrs $16.2 mill
LT Debt $289.2 mill. LT Interest $19.7 mill.
(LT Interest earned: 3.8x; total int. cov.: 3.6x)

Pension Assets-12/07 $85.3 mill.
Oblig. $105.6 mill.

Pfd Stock $3.5 mill. Pfd Div'd $.15 mill.
139,000 shares, 4.4% cumulative ($25 par)

Common Stock 20,666,204 shs.
as of 2/22/08

MARKET CAP: $825 million (Small Cap)

CURRENT POSITION

($MILL.)	2005	2006	12/31/07
Cash Assets	9.5	60.3	6.7
Other	42.7	49.3	53.3
Current Assets	52.2	109.6	60.0
Accts Payable	36.1	33.1	36.7
Debt Due	1.1	1.8	2.7
Other	39.6	35.3	30.9
Current Liab.	76.8	70.2	68.7
Fix. Chg. Cov.	361%	317%	365%

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	2.0%	0.5%	3.5%
"Cash Flow"	1.5%	4.0%	6.0%
Earnings	-0.5%	4.5%	8.5%
Dividends	1.0%	0.5%	7.0%
Book Value	3.5%	8.0%	3.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	80.3	81.5	101.1	77.8	320.7
2006	85.2	81.1	107.6	80.6	334.7
2007	71.6	95.8	113.8	85.9	367.1
2008	75.0	100	135	100	400
2009	85.0	115	135	110	445

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.03	.41	.71	.32	1.47
2006	.04	.31	.68	.31	1.34
2007	.07	.37	.57	.39	1.50
2008	.10	.45	.73	.47	1.75
2009	.13	.58	.85	.49	1.95

QUARTERLY DIVIDENDS PAID B ■

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.283	.283	.283	.283	1.13
2005	.285	.285	.285	.285	1.14
2006	.2875	.2875	.2875	.2875	1.15
2007	.290	.290	.290	.290	1.16
2008	.293				

BUSINESS: California Water Service Group provides regulated and nonregulated water service to roughly 463,800 customers in 83 communities in California, Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired National Utility Company (5/04); Rio Grande Corp. (11/00). Revenue breakdown, '07: residential, 68%; business, 18%; public authorities, 5%; industrial, 5%; other, 3%. '07 reported depreciation rate: 2.2%. Has roughly 500 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson (4/07 Proxy). Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwatergroup.com

California Water Service Group bounced back to finish up 2007 in solid fashion. Indeed, the company posted earnings of $0.39 a share in the fourth quarter, marking a 26% year-over-year increase, well above our expectations. Note that earnings include a $0.06-per-share gain from the sale of land that we deem as normal business practice for the water utility provider. Revenues grew 6.5%, to roughly $86 million, helping offset higher operating costs (see below).

We've upped our 2008 share-net estimate by a dime, to $1.75 ... Recent wet weather conditions have refilled water supplies in California. This ought to boost margins as the company will probably not have to purchase water this summer. Meanwhile, the recent decision regarding the 2006 general rate case (GRC) allows for a $7.7 million increase and a 10.2% ROE effective January 1, 2007.

... and are introducing a 2009 share-net growth rate of 11%. CWT is still awaiting a ruling on its 2007 GRC, requesting $67.5 million increase in revenues with an allowed ROE of 10.2%. We expect a favorable decision will be handed down sometime by yearend.

The company is looking to increase its footprint outside the Golden State's borders. CWT increased its customer base in Washington last year via the purchase of five small systems, and operations and maintenance agreements with 11 new water system owners. However, there looks to be more on the agenda. Its Hawaii subsidiary is awaiting regulatory approval on the acquisition of Pukalani Sewerage Treatment Works as well as West Hawaii Utilities, which combined serve nearly 10,000 customers.

Still, we think that these shares are pricey. Although water is a necessity, so is the maintenance and upkeep of water infrastructures. However, the company is strapped for cash and will probably have to look to outside financiers to take some of the burden off its shoulders and keep up with increasingly tougher regulations. Unfortunately, the financing will likely limit shareholder gains going forward. Meanwhile, we believe that investors can find better income vehicles, given the capital constraints we envision.

Andre J. Costanza *April 25, 2008*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; 02, 8¢. Next earnings report due early May.

(B) Dividends historically paid in mid-Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.

(C) Incl. deferred charges in '07: $69.7 mill., $3.37/sh.

(D) In millions, adjusted for split.

Company's Financial Strength B++
Stock's Price Stability 65
Price Growth Persistence 75
Earnings Predictability 70

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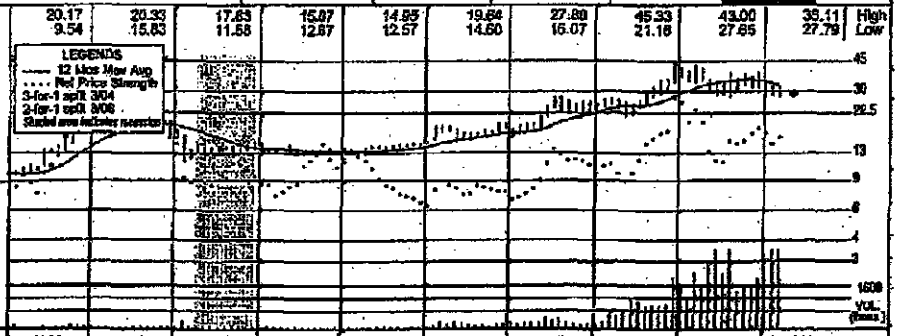
SJW CORP. NYSE-SJW

RECENT PRICE 29.01 | TRAILING P/E RATIO 27.9 | RELATIVE P/E RATIO 1.66 | DIV'D YLD 2.2% | VALUE LINE

RANKS
PERFORMANCE 3 Average
Technical 3 Average
SAFETY 3 Average
BETA 1.10 (1.00 = Market)

Financial Strength B+
Price Stability 55
Price Growth Persistence 60
Earnings Predictability 85



© VALUE LINE PUBLISHING, INC.	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008/2009
SALES PER SH	6.40	6.74	7.45	7.97	8.20	9.14	9.86	10.35	11.25	
"CASH FLOW" PER SH	1.43	1.23	1.48	1.55	1.75	1.89	2.21	2.38	2.30	
EARNINGS PER SH	.87	.58	.77	.78	.91	.87	1.12	1.19	1.04	1.30 A.5/NA
DIV'DS DECL'D PER SH	.40	.41	.43	.46	.49	.51	.53	.57	.61	
CAP'L SPENDING PER SH	1.77	1.89	2.63	2.06	3.41	2.31	2.83	3.87	8.82	
BOOK VALUE PER SH	7.88	7.90	8.17	8.40	9.11	10.11	10.72	12.48	12.90	
COMMON SHS OUTST'G (MILL.)	18.27	18.27	18.27	18.27	18.27	18.27	18.27	18.28	18.36	
AVG ANN'L P/E RATIO	15.5	33.1	18.6	17.3	15.4	19.6	19.7	23.6	33.4	22.3/NA
RELATIVE P/E RATIO	.83	2.15	.95	.94	.88	1.04	1.04	1.27	1.75	
AVG ANN'L DIV'D YIELD	3.0%	2.1%	3.0%	3.4%	3.5%	3.0%	2.4%	2.0%	1.7%	
SALES ($MILL.)	117.0	123.2	136.1	145.7	149.7	166.9	180.1	189.2	206.5	
OPERATING MARGIN	33.2%	30.2%	64.4%	63.7%	56.0%	56.4%	55.9%	57.0%	41.8%	
DEPRECIATION ($MILL.)	10.2	11.9	13.2	14.0	15.2	16.5	19.7	21.3	22.9	
NET PROFIT ($MILL.)	15.9	10.7	14.0	14.2	16.7	16.0	20.7	22.2	19.3	
INCOME TAX RATE	35.9%	41.0%	34.5%	40.4%	36.2%	42.1%	41.6%	40.8%	39.4%	
NET PROFIT MARGIN	13.6%	8.7%	10.3%	9.8%	11.2%	9.6%	11.5%	11.7%	9.4%	
WORKING CAP'L ($MILL.)	d3.0	d11.4	d3.8	d4.9	12.0	13.0	10.8	22.2	d1.4	
LONG-TERM DEBT ($MILL.)	90.0	90.0	110.0	110.0	139.6	143.6	145.3	163.6	216.3	
SHR. EQUITY ($MILL.)	143.9	144.3	149.4	153.5	166.4	184.7	196.9	228.2	236.9	
RETURN ON TOTAL CAP'L	8.2%	5.9%	6.7%	6.9%	6.9%	6.5%	7.6%	7.8%	5.7%	
RETURN ON SHR. EQUITY	11.0%	7.4%	9.4%	9.3%	10.0%	8.7%	10.6%	9.7%	8.2%	
RETAINED TO COM EQ	5.9%	2.2%	4.1%	3.8%	4.7%	3.6%	5.6%	5.2%	3.5%	
ALL DIV'DS TO NET PROF	46%	70%	59%	59%	53%	58%	47%	46%	57%	

Bold figures are consensus earnings estimates and, using the recent price, P/E ratios.

A Nbr. of analysts changing estn. last in last 12 days: 0 up, 0 down, consensus 5-year earnings growth 10.0% per year. B Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	7.5%	8.5%
"Cash Flow"	10.0%	-3.5%
Earnings	9.5%	-12.5%
Dividends	6.5%	7.0%
Book Value	8.0%	3.5%

Fiscal Year	QUARTERLY SALES ($mill.) 1Q	2Q	3Q	4Q	Full Year
12/31/05	33.3	44.8	58.5	43.5	180.1
12/31/06	33.7	47.9	63.1	44.5	189.2
12/31/07	35.0	55.1	64.3	47.8	206.6
12/31/08					

Fiscal Year	EARNINGS PER SHARE 1Q	2Q	3Q	4Q	Full Year
12/31/04	.09	.27	.30	.21	.87
12/31/05	.15	.31	.53	.13	1.12
12/31/06	.14	.35	.48	.22	1.19
12/31/07	.12	.29	.43	.20	1.04
12/31/08					

Cal-endar	QUARTERLY DIVIDENDS PAID 1Q	2Q	3Q	4Q	Full Year
2005	.134	.134	.134	.134	.54
2006	.141	.141	.141	.141	.56
2007	.151	.151	.151	.151	.60
2008	.161				

INSTITUTIONAL DECISIONS

	2Q'07	3Q'07	4Q'07
to Buy	40	32	43
to Sell	27	28	27
Hld's(000)	8696	8654	8717

ASSETS ($mill.)	2005	2006	12/31/07
Cash Assets	9.4	3.8	2.4
Receivables	18.4	20.9	23.0
Inventory	.6	.9	.8
Other	3.3	33.9	5.4
Current Assets	31.7	59.6	31.6
Property, Plant & Equip. at cost	695.0	776.2	934.3
Accum. Depreciation	219.2	234.5	258.8
Net Property	484.8	541.7	645.5
Other	71.2	104.7	98.2
Total Assets	587.7	705.9	767.3
LIABILITIES ($mill.)			
Accts Payable	6.1	7.3	9.3
Debt Due	.3	16.0	5.6
Other	15.5	13.9	18.1
Current Liab	20.9	37.2	33.0

LONG-TERM DEBT AND EQUITY as of 12/31/07

Total Debt $221.9 mill. Due in 5 Yrs. $12.1 mill.
LT Debt $216.3 mill.
Including Cap. Leases: None (48% of Cap'l)
Leases, Uncapitalized Annual rentals $5.7 mill.

Pension Liability $23.4 mill. in '07 vs. $26.3 mill. in '06

Pfd Stock: None Pfd Div'd Paid: None

Common Stock 18,381,733 shares (52% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: SJW Corp., through its subsidiaries, engages in the production, purchase, storage, purification, distribution, and retail sale of water. The company offers nonregulated water-related services, including water system operations, cash remittances, and maintenance contract services. SJW also owns undeveloped land; a 70% limited partnership interest in 444 West Santa Clara Street, L.P.; and operates commercial buildings in Arizona, California, Connecticut, Florida, Tennessee, and Texas. As of December 31, 2007, SJW provided water service to approximately 225,000 connections that served a population of approximately one million people in the San Jose area. Has 364 employees. Chairman: Charles J. Toeniskoetter. Inc.: CA. Address: 374 W. Santa Clara Street, San Jose, CA 95113. Tel.: (408) 279-7800. Internet: http://www.sjwater.com.

L.Y.

April 25, 2008

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 3/31/2008

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-17.10%	-15.43%	-27.96%	73.20%	154.61%

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SOUTHWEST WATER NDQ-SWWC

RECENT PRICE 11.18 | P/E RATIO 32.7 (Trailing: 30.7 / Median: 21.0) | RELATIVE P/E RATIO 2.06 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 4 Lowered 11/23/07
SAFETY 3 New 10/29/04
TECHNICAL 3 Lowered 4/25/08
BETA 1.00 (1.00 = Market)

2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	20	(+80%)	16%
Low	14	(+25%)	8%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	1	0	0	0	0	0
Options	0	0	1	0	0	0	0	0	0
to Sell	1	1	2	1	1	1	1	1	0

Institutional Decisions

	3Q2007	4Q2007	1Q2008
to Buy	33	34	31
to Sell	28	27	26
Hld's(000)	12560	10813	11080

LEGENDS
3.50 x Dividends p sh divided by Interest Rate
Relative Price Strength
6-for-5 split 12'98
5-for-4 split 10'98
3-for-2 split 10'99
5-for-4 split 1'01
6-for-5 split 1'04
Options: No
Shaded area indicates recession

Target Price Range 2011 | 2012 | 2013

% TOT. RETURN 12/07

	THIS STOCK	VL ARITH. INDEX
1 yr	-7.4	1.3
3 yr	-2.2	25.2
5 yr	43.2	117.2

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
	3.77	4.03	4.20	4.84	5.31	5.61	5.63	6.16	7.49	8.15	9.12	10.70	9.23	9.10	9.42	8.95	9.80	9.60	Revenues per sh	10.75
	.44	.38	.38	.44	.46	.53	.59	.65	.78	.87	.86	.91	.67	.78	.85	.65	1.05	1.15	"Cash Flow" per sh	1.45
	.19	.08	.09	.12	.15	.21	.25	.31	.38	.42	.39	.44	.23	.34	.40	.31	.49	.59	Earnings per sh A	.70
	.13	.14	.08	.06	.09	.09	.10	.11	.13	.14	.15	.16	.18	.20	.21	.23	.24	.26	Div'd Decl'd per sh B	.32
	.42	.60	.72	.84	.96	.74	.79	.83	.95	1.06	1.16	1.34	1.26	1.66	1.87	1.78	1.75	1.85	Cap'l Spending per sh	1.60
	2.42	2.31	2.31	2.45	2.40	2.52	2.70	3.05	3.44	3.84	4.27	4.98	5.17	6.49	6.98	5.98	6.20	6.45	Book Value per sh D	7.30
	11.80	11.87	12.13	11.74	12.46	12.65	12.83	13.12	13.39	14.17	14.35	16.17	20.36	22.33	23.68	24.27	25.60	26.60	Common Shs Outst'g C	28.60
	14.6	35.6	22.3	14.6	15.6	19.9	17.2	19.6	17.0	19.8	24.8	21.2	51.6	35.5	34.8	--	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	25.0
	.88	2.11	1.46	.96	1.03	.97	.89	1.12	1.11	1.01	1.35	1.21	2.73	1.89	1.88	--			Relative P/E Ratio	1.65
	6.6%	4.7%	4.2%	4.7%	3.4%	2.7%	2.3%	1.8%	2.9%	1.7%	1.5%	1.7%	1.5%	1.6%	1.5%	1.8%			Avg Ann'l Div'd Yield	1.7%
							72.2	88.9	104.7	116.5	130.8	173.0	188.0	203.2	224.2	217.3	229	250	Revenues ($mill)	380
							3.8	4.2	5.4	6.2	6.0	7.2	4.5	7.3	8.3	5.0	10.0	13.0	Net Profit ($mill)	18.5
							38.5%	38.0%	37.8%	35.0%	34.5%	35.9%	38.1%	36.0%	35.0%	NMF	35.0%	35.0%	Income Tax Rate	36.5%
							--	--	--	14.4%	3.2%	--	11.0%	9.5%	12.5%	11.0%	11.5%	12.0%	AFUDC % to Net Profit	14.0%
							48.7%	45.2%	48.8%	51.4%	56.7%	47.9%	47.9%	44.7%	43.5%	50.0%	46.0%	45.5%	Long-Term Debt Ratio	40.0%
							50.5%	54.1%	50.7%	48.2%	42.9%	51.8%	52.0%	55.1%	56.3%	50.0%	53.0%	54.5%	Common Equity Ratio	60.0%
							68.5	73.9	95.0	113.8	142.8	152.8	362.0	282.9	255.2	290.0	285	290	Total Capital ($mill)	550
							109.2	113.7	157.6	171.1	203.9	219.5	302.6	344.8	389.6	410.3	435	455	Net Plant ($mill)	700
							7.1%	7.5%	7.6%	7.6%	5.8%	6.2%	3.1%	4.1%	4.5%	3.0%	5.0%	5.5%	Return on Total Cap'l	7.0%
							9.5%	10.3%	11.1%	11.4%	9.7%	9.0%	3.6%	5.0%	5.5%	3.5%	6.5%	8.0%	Return on Shr. Equity	9.5%
							9.6%	10.4%	11.1%	11.4%	9.7%	9.1%	3.6%	5.0%	5.9%	3.5%	6.5%	8.0%	Return on Com Equity	9.5%
							6.0%	7.0%	7.8%	7.8%	6.5%	5.8%	1%	2.1%	2.8%	NMF	2.5%	3.5%	Retained to Com Eq	4.5%
							38%	33%	31%	32%	32%	36%	78%	58%	54%	NMF	60%	52%	All Div'ds to Net Prof	43%

CAPITAL STRUCTURE as of 12/31/07
Total Debt $147.3 mill. Due in 5 Yrs $60.5 mill
LT Debt $145.4 mill. LT Interest $8.0 mill.
(Total interest coverage: 2.7x) (48% of Cap'l)

Leases, Uncapitalized: Annual rentals $6.7 mill.
Pension Liability None

Pfd Stock $.458 mill. Pfd Div'd $.028 mill.
Common Stock 24,435,213 shs
as of 3/20/08

MARKET CAP: $380 million (Small Cap)

CURRENT POSITION ($MILL.)	2005	2006	12/31/07
Cash Assets	3.0	4.5	2.9
Receivables	26.5	27.5	28.0
Inventory (Avg Cst)	--	--	--
Other	18.2	16.6	32.7
Current Assets	47.7	48.5	61.6
Accts Payable	10.0	12.7	14.9
Debt Due	9.6	1.4	1.9
Other	21.1	21.7	29.4
Current Liab.	40.8	35.8	46.2

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	5.5%	2.0%	3.0%
"Cash Flow"	2.0%	-6.5%	11.0%
Earnings	-1.5%	-19.5%	14.5%
Dividends	9.5%	9.0%	7.5%
Book Value	10.5%	11.5%	8.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	45.2	51.3	54.7	52.0	203.2
2006	50.8	55.4	60.1	57.9	224.2
2007	48.1	55.9	57.4	55.8	217.3
2008	50.0	58.0	60.0	62.0	230
2009	55.0	65.0	67.0	63.0	250

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	d.01	.15	.14	.06	.34
2006	.03	.08	.18	.13	.40
2007	.03	.09	.09	.11	.32
2008	.04	.11	.11	.14	.40
2009	.05	.13	.14	.17	.50

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.044	.044	.044	.048	.18
2005	.048	.048	.048	.052	.20
2006	.052	.052	.052	.056	.21
2007	.056	.056	.056	.058	.23
2008	.06	.06			

BUSINESS: Southwest Water Company provides a broad range of services including water production, treatment and distribution; wastewater collection and treatment; utility billing and collection; utility infrastructure construction management; and public works services. It operates out of two groups, Utility (43% of 2007 revenues) and Services (57%). Utility owns and manages rate-regulated public water utilities in California, New Mexico, Oklahoma, and Texas. Services does mostly maintenance work on a contract basis. Off. & dir. own 6.4% of com. shs.; Steh Rae Investment Council, 8.2% (4/08 proxy). CEO and Chairman: Mark Swatek, Inc.: DE. Addr.: One Wilshire Building, 624 S. Grand Ave. Ste. 2900, Los Angeles, CA 90017. Tel.: 213-929-1800. Internet: www.swwc.com.

Earnings prospects were dry in 2007 for Southwest Water. Revenues declined 5%, year over year. The housing market slowdown had dampened top-line growth for the Services division, with a decrease of new home construction tapping and inspections. And bad weather conditions during the year hampered Texas facilities' construction repair projects. These weaknesses were also shown in the southeast services region. Investors should note that we are excluding a charge of $17.2 million, or $0.54 per share, accrued in the December interim. This is from the impairment of goodwill associated with the Texas plant.

Restructuring efforts should lead to margin improvements over the next few years. In order to lower operating costs, approximately 3% of employees of the service business were released, including 12 positions in management. Excluding related severance charges, savings of about $2.6 million per annum will likely be realized. Other activities taken to improve margins were the closure of an electrical business in Colorado and the elimination of a wholesale- and wastewater project in Texas. Also, the company is in the process of consolidating much of its back-office functions, such as the merging of three call centers into one facility. The IT systems have also been refurbished, and the financial accounting processes have been centralized. Further options are being explored in the company's non core business divisions.

The acquisition of the Riverview System should benefit earnings over the next few years. Towards the end of January, Southwest Water purchased the assets of a wastewater collection system and associated treatment plant from the Shelby County Governmental Utility Services Corporation for $22.5 million in cash. **These shares are untimely.** The aforementioned restructuring efforts, combined with rising volume, stand to contribute to a solid earnings recovery in the years to come. However, the issue's current quotation appears to discount some of this bright outlook. These projections may be enhanced if Southwest Water can complete more acquisitions to bolster its core segments over the next few years.

John D. Burke *April 25, 2008*

(A) Diluted earnings. Excludes nonrecurring gains (losses): '08, (3¢); '01, (5¢); '02, 1¢; '06, (23¢); '07, (54¢). Next earnings report due mid-June.
(B) Dividends historically paid in late January, April, July, and October. ■ 50.83/share
(C) In millions, adjusted for splits.
(D) Includes intangibles. In 2007: $19.9 million, $0.83/share

Company's Financial Strength	B
Stock's Price Stability	55
Price Growth Persistence	70
Earnings Predictability	60

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YORK WATER CO NDQ-YORW

RECENT PRICE 15.27 | TRAILING P/E RATIO 26.8 | RELATIVE P/E RATIO 1.60 | DIV'D YLD 3.2% | VALUE LINE

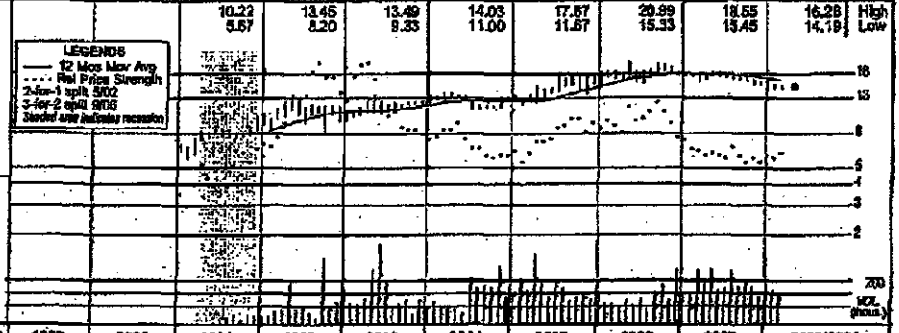
RANKS

PERFORMANCE 3 Average
Technical 3 Average
SAFETY 3 Average
BETA .45 (1.00 = Market)

Financial Strength B+
Price Stability 75
Price Growth Persistence 40
Earnings Predictability 90

LEGENDS
12 Mos Mov Avg
Rel Price Strength
2-for-1 split 5/02
3-for-2 split 9/03
Shaded area indicates recession

10.22 5.67 | 13.45 8.20 | 13.49 9.33 | 14.03 11.00 | 17.67 11.67 | 20.99 15.33 | 18.55 15.45 | 16.28 14.19 | High Low



© VALUE LINE PUBLISHING, INC.	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008/2009
REVENUES PER SH	—	—	2.05	2.05	2.17	2.18	2.58	2.56	2.79	
"CASH FLOW" PER SH	—	—	.59	.57	.65	.68	.79	.77	.86	
EARNINGS PER SH	—	—	.43	.40	.47	.49	.56	.56	.57	.57[A,B]/NA
DIV'D DECL'D PER SH	—	—	.34	.36	.37	.39	.42	.45	.48	
CAP'L SPENDING PER SH	—	—	.76	.86	1.97	2.59	1.89	1.85	1.69	
BOOK VALUE PER SH	—	—	3.79	3.90	4.06	4.65	4.85	5.84	6.97	
COMMON SHS OUTST'G (MILL.)	—	—	9.46	9.56	9.63	10.33	10.40	11.20	11.27	
AVG ANN'L P/E RATIO	—	—	17.9	25.9	24.5	25.7	26.9	31.2	30.3	22.8/NA
RELATIVE P/E RATIO	—	—	.92	1.47	1.40	1.36	1.39	1.58	1.59	
AVG ANN'L DIV'D YIELD	—	—	4.3%	3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	
REVENUES ($MILL.)	—	16.5	19.4	19.6	20.9	22.5	26.6	28.7	31.4	
NET PROFIT ($MILL.)	—	3.8	4.0	3.8	4.4	4.8	5.8	6.1	6.4	
INCOME TAX RATE	—	35.7%	35.8%	34.9%	34.8%	36.7%	38.7%	34.4%	36.5%	
AFUDC % TO NET PROFIT	—	—	2.2%	3.7%	—	—	—	7.2%	3.6%	
LONG-TERM DEBT RATIO	—	50.2%	47.7%	46.7%	43.4%	42.5%	44.1%	48.3%	48.5%	
COMMON EQUITY RATIO	—	49.8%	52.3%	53.3%	56.6%	57.5%	55.9%	51.7%	51.5%	
TOTAL CAPITAL ($MILL.)	—	65.2	68.8	69.8	69.0	83.6	90.3	126.5	125.7	
NET PLANT ($MILL.)	—	97.0	102.3	106.7	116.5	140.0	155.3	174.4	191.6	
RETURN ON TOTAL CAP'L	—	7.5%	7.0%	7.4%	8.5%	7.6%	8.4%	6.2%	6.7%	
RETURN ON NET WORTH	—	11.6%	11.2%	10.2%	11.4%	10.0%	11.6%	9.3%	9.5%	
RETURN ON COM EQUITY	—	11.6%	11.2%	10.2%	11.4%	10.0%	11.6%	9.3%	9.5%	
RETAINED TO COM EQ	—	2.5%	2.5%	1.3%	2.6%	2.1%	3.0%	2.2%	1.7%	
ALL DIV'DS TO NET PROF	—	78%	78%	88%	77%	79%	74%	77%	82%	

Bold figures are consensus earnings estimates and, using the recent price, P/E ratios.

[A] No. of analysts changing earn. est. in last 12 days: 0 up, 0 down; consensus 5-year earnings growth 11.0% per year. [B] Based upon 3 analysts' estimates.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Revenues	5.0%	9.9%
"Cash Flow"	6.5%	11.5%
Earnings	6.5%	-1.5%
Dividends	—	4.5%
Book Value	7.5%	2.5%

Fiscal Year	QUARTERLY SALES ($mill.) 1Q	2Q	3Q	4Q	Full Year
12/31/05	6.2	6.7	7.2	6.7	26.8
12/31/06	6.6	7.0	7.7	7.4	28.7
12/31/07	7.4	7.9	8.3	7.8	31.4
12/31/08					

Fiscal Year	EARNINGS PER SHARE 1Q	2Q	3Q	4Q	Full Year
12/31/04	.12	.11	.12	.14	.49
12/31/05	.12	.14	.17	.13	.56
12/31/06	.12	.14	.17	.15	.58
12/31/07	.12	.16	.15	.15	.57
12/31/08	.14	.17	.20		

Cal-endar	QUARTERLY DIVIDENDS PAID 1Q	2Q	3Q	4Q	Full Year
2005	.104	.104	.104	.104	.42
2006	.112	.112	.112	.112	.45
2007	.118	.118	.118	.118	.47
2008	.121	.121			

INSTITUTIONAL DECISIONS

	2Q'07	3Q'07	4Q'07
to Buy	14	10	11
to Sell	5	4	11
Hld's(000)	1418	1595	1631

ASSETS ($mill.)	2005	2006	12/31/07
Cash Assets	.0	.0	0
Receivables	3.8	4.8	5.2
Inventory (Avg cost)	.8	.8	.8
Other	.6	1.1	.8
Current Assets	5.1	6.7	6.8
Property, Plant & Equip. at cost	182.4	202.7	223.1
Accum Depreciation	27.1	28.3	31.5
Net Property	155.3	174.4	191.6
Other	11.9	15.8	12.6
Total Assets	172.3	196.1	211.0
LIABILITIES ($mill.)			
Accts Payable	2.5	1.6	3.2
Debt Due	19.9	1.2	15.0
Other	2.8	3.1	3.2
Current Liab	24.7	5.9	21.4

LONG-TERM DEBT AND EQUITY as of 12/31/07

Total Debt 573.5 mill. Due in 5 Yrs: 530.4 mill.
LT Debt $58.5 mill.
Including Cap. Leases None (46% of Cap'l)
Leases, Uncapitalized Annual rentals None

Pension Liability $4.9 mill. in '07 vs. $5.9 mill. in '06

Pfd Stock None Pfd Div'd Paid None

Common Stock 11,284,923 shares (54% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: The York Water Company engages in the impounding, purification, and distribution of water in York County and Adams County, Pennsylvania. The company supplies water for residential, commercial, industrial, and other customers. It has two reservoirs, Lake Williams and Lake Redman, which together hold approximately 2.2 billion gallons of water. The company also has a 15-mile pipeline from the Susquehanna River to Lake Redman that provides access to an additional supply of water. It serves 39 municipalities in York County and seven municipalities in Adams County. In March, Jeffrey R. Hines was named president and chief executive officer. Has 109 employees. C.E.O. & President: Jeffrey R. Hines. Inc.: PA. Address: 130 East Market Street, York, PA 17401. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com.

L.Y.

April 25, 2008

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 3/31/2008

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-2.41%	-9.50%	-8.12%	28.12%	53.55%

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Ohio American Water Company
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six AUS Utility Reports Water Companies
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	5.67 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.72 (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	6.39 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.00 (3)
5.	Adjusted Prospective Bond Yield	6.39
6.	Equity Risk Premium (5)	5.36
7.	Risk Premium Derived Common Equity Cost Rate	11.75 %

Notes:
(1) Derived in Note (3) on page 6 of this Schedule.
(2) The average yield spread of A rated public utility bonds over Aaa rated corporate
(3) No adjustment necessary as the average Moody's bond rating of the proxy group is A2 as shown on page 2 of this Schedule.
(4) From page 5 of this Schedule.

Ohio American Water Company
Comparison of Bond Ratings, Business Risk and Financial Risk Profiles for
the Proxy Group of Six AUS Utility Reports Water Companies

Proxy Group of Six AUS Utility Reports Water Companies	Moody's Bond Rating May 2008		Standard & Poor's Bond Rating May 2008							
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	Business Risk Profile (2)	Numerical Weighting (1)	Financial Risk Profile (2)	Numerical Weighting (1)
American States Water Co. (3)	A2	6	A	6	A	6	Excellent	1.0	Intermediate	2.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	Excellent	1.0	Intermediate	2.0
California Water Service Group (5)	NR	--	NR	--	A+	5	Excellent	1.0	Intermediate	2.0
SJW Corporation (6)	NR	--	NR	--	NR	--	NR	--	NR	--
Southwest Water Company (7)	NR	--	NR	--	NR	--	NR	--	NR	--
York Water Company	NR	--	A-	7	A-	7	Excellent	1.0	Intermediate	2.0
Average	A2	6.0	AA- / A+	5.7	A	5.8	Excellent	1.0	Intermediate	2.0

Notes:
(1) From page 3 of this Schedule.
(2) From Standard & Poor's Issuer Ranking: U.S. Investor-Owned Water Utilities, Strongest to Weakest, May 8, 2008.
(3) Ratings, business risk and financial risk profiles are those of Golden State Water Company
(4) Ratings, business risk and financial risk profiles are those of Aqua Pennsylvania, Inc.
(5) Ratings, business risk and financial risk profiles are those of California Water Service Company.
(6) Ratings, business and financial risk profiles are those of San Jose Water Company.
(7) Ratings, business risk and financial risk profiles are a composite of those of Hornsby Bond Utility Co., New Mexico Utilities, Inc., Suburban Water Systems, and Windermere Utility Co.

Source of Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Exhibit No. ___
Schedule PMA-10
Page 2 of 9

Ohio American Water Company
Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings
Standard & Poor's Business and Financial Risk Profiles

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-

Standard & Poor's

Business Risk Profile	Numerical Weighting	Financial Risk Profile	Numerical Weighting
Excellent	1	Modest	1
Strong	2	Intermediate	2
Satisfactory	3	Aggressive	3
Weak	4	Highly Leveraged	4
Vulnerable	4		

Moody's
Comparison of Interest Rate Trends
for the Three Months Ending May 2008 (1)

Years	Corporate Bonds Aaa Rated	Public Utility Bonds Aa Rated	Public Utility Bonds A Rated	Public Utility Bonds Baa Rated	Spread - Corporate v. Public Utility Bonds Aa (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds A (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds Baa (Pub. Util.) over Aaa (Corp.)	Spread - Public Utility Bonds A over Aa	Spread - Public Utility Bonds Baa over A
March-08	5.51	5.99	6.21	6.68 %					
April-08	5.55	5.99	6.29	6.82					
May-08	5.57	6.07	6.27	6.79					
Average of Last 3 Months	5.54 %	6.02 %	6.26 %	6.76 %	0.48 %	0.72 %	1.22 %	0.24 %	0.50 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record, June 2008, Vol. 75, No. 6

Exhibit No. ___
Schedule PMA-10
Page 4 of 9

Ohio American Water Company
Judgment of Equity Risk Premium for
the Proxy Group of Six AUS Utility Reports Water Companies

Line No.		Proxy Group of Six AUS Utility Reports Water Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	6.20
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.51
3.	Average equity risk premium	5.36 %

Notes: (1) From page 6 of this Schedule.
(2) From page 8 of this Schedule.

Ohio American Water Company
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
the Proxy Group of Six AUS Utility Reports Water Companies

Line No.		Proxy Group of Six AUS Utility Reports Water Companies
1.	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index - 1926-2007 (1)	12.30 %
2.	Arithmetic mean yield on Aaa and Aa Corporate Bonds 1926-2007 (2)	(6.10)
3.	Historical Equity Risk Premium	6.20 %
4.	Forecasted 3-5 year Total Annual Market Return (3)	16.50 %
5.	Prospective Yield an Aaa Rated Corporate Bonds (4)	(5.67)
6.	Forecasted Equity Risk Premium	10.83 %
7.	*Conclusion of Equity Risk Premium (5)*	6.20 %
8.	Adjusted Value Line Beta (6)	1.00
9.	Beta Adjusted Equity Risk Premium	6.20 %

Notes:

(1) Ibbotson SBBI - 2008 Valuation Yearbook - Market Results for Stocks Bonds, Bills, and Inflation 1926 - 2007

(2) From Moody's Industrial Manual and Mergent Bond Record Monthly Update.

(3) From page 3 of Schedule PMA-11.

(4) Average forecast based upon six quarterly estimates of Aaa rated corporate bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated June 1, 2008 (see page 7 of this Schedule). The estimates are detailed below.

Second Quarter 2008	5.50 %
Third Quarter 2008	5.60
Fourth Quarter 2008	5.60
First Quarter 2009	5.60
Second Quarter 2009	5.80
Third Quarter 2009	5.90
Average	5.67 %

(5) The average of the Historical Equity Risk Premium of 6.20% from Line No. 3 and the Forecasted Equity Risk Premium of 10.83% from Line No. 6 ((6.20% + 10.83%) / 2 = 8.52%. Normally, Ms. Ahern would use the average Historical Equity Risk Premium in her Risk Premium Analysis. However, in Ms. Ahern's opinion, the current and recent substantial volatility in the stock market is extraordinary and not representative of the expected long-term. Consequently, in this instance, Ms. Ahern will not consider what she believes is an extraordinary expected capital appreciation and instead will rely only upon the 6.20% historical market premium.

(6) From page 9 of this Schedule.

Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

	History							
	Average For Week End				Average For Month			Latest Q
Interest Rates	May 16	May 9	May 2	Apr. 25	Apr.	Mar.	Feb.	1Q 2008
Federal Funds Rate	1.96	1.94	2.28	2.25	2.28	2.61	2.98	3.18
Prime Rate	5.00	5.00	5.21	5.25	5.24	5.66	6.00	6.21
LIBOR, 3-mo.	2.70	2.72	2.83	2.92	2.80	2.78	3.09	3.26
Commercial Paper, 1-mo.	1.97	1.96	2.05	2.13	2.10	2.36	2.90	2.96
Treasury bill, 3-mo.	1.82	1.64	1.45	1.29	1.31	1.28	2.17	2.09
Treasury bill, 6-mo.	1.89	1.75	1.71	1.67	1.58	1.54	2.10	2.16
Treasury bill, 1 yr.	2.07	1.94	1.93	1.88	1.74	1.54	2.05	2.10
Treasury note, 2 yr.	2.44	2.32	2.37	2.30	2.05	1.62	1.97	2.02
Treasury note, 5 yr.	3.12	3.07	3.10	3.05	2.84	2.48	2.78	2.75
Treasury note, 10 yr.	3.86	3.85	3.83	3.81	3.68	3.51	3.74	3.66
Treasury note, 30 yr.	4.58	4.57	4.53	4.52	4.44	4.39	4.52	4.41
Corporate Aaa bond	5.56	5.57	5.56	5.58	5.55	5.51	5.53	5.46
Corporate Baa bond	6.92	6.89	6.90	6.98	6.97	6.89	6.82	6.75
State & Local bonds	4.53	4.62	4.63	4.68	4.70	4.93	4.64	4.61
Home mortgage rate	6.01	6.05	6.06	6.03	5.92	5.97	5.92	5.88

	History							
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Key Assumptions	2006	2006	2006	2007	2007	2007	2007	2008
Major Currency Index	82.2	81.7	81.6	81.9	79.3	77.0	73.3	72.0
Real GDP	2.4	1.1	2.1	0.6	3.8	4.9	0.6	0.6
GDP Price Index	3.5	2.4	1.7	4.2	2.6	1.0	2.4	2.6
Consumer Price Index	3.9	3.8	-1.6	3.8	4.6	2.7	5.1	4.2

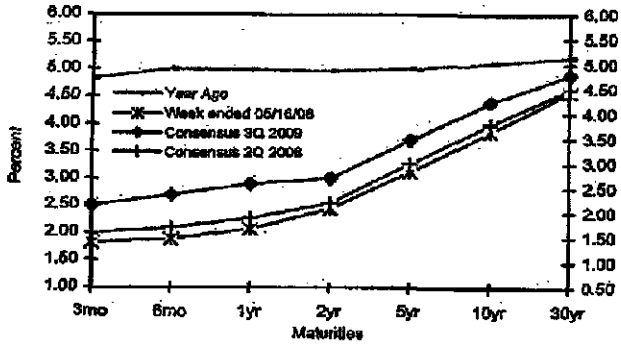
Consensus Forecasts Quarterly Avg.					
2Q 2008	3Q 2008	4Q 2008	1Q 2009	2Q 2009	3Q 2009
2.1	2.0	1.9	2.0	2.2	2.5
5.1	5.0	5.0	5.1	5.3	5.6
2.5	2.5	2.5	2.5	2.7	3.0
2.2	2.2	2.2	2.3	2.6	2.9
1.6	1.7	1.7	1.9	2.2	2.5
1.7	1.8	1.9	2.1	2.3	2.7
1.9	2.0	2.1	2.3	2.5	2.9
2.2	2.5	2.5	2.5	2.8	3.0
3.0	3.1	3.1	3.3	3.5	3.7
3.8	3.9	3.9	4.1	4.2	4.4
4.5	4.5	4.6	4.7	4.8	4.9
5.5	5.6	5.6	5.6	5.8	5.9
6.9	6.9	6.9	6.9	7.0	7.1
4.6	4.6	4.6	4.6	4.6	4.8
5.9	5.9	6.0	6.0	6.1	6.3

Consensus Forecasts Quarterly Avg.					
2Q 2008	3Q 2008	4Q 2008	1Q 2009	2Q 2009	3Q 2009
70.6	70.7	71.4	71.9	72.7	73.5
0.1	1.2	1.2	1.8	2.3	2.7
2.5	2.6	2.4	2.5	2.2	2.2
3.5	3.5	2.6	3.5	2.8	2.5

Individual panel members' forecasts are on pages 4 through 9. Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15. LIBOR quotes available from *The Wall Street Journal*. Definitions reported here are same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for the U.S Federal Reserve Board's Major Currency Index is from FRSR H.10 and G.5. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).

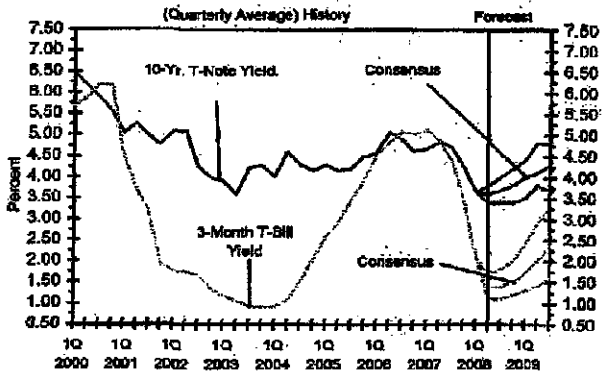
U.S. Treasury Yield Curve

Week ended May 16, 2008 and Year Ago vs. 2Q 2008 and 3Q 2008 Consensus forecasts



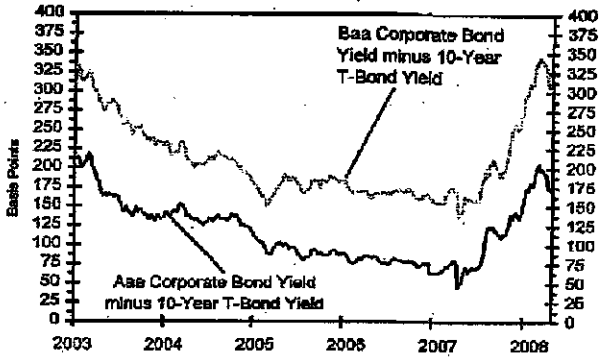
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield

(Quarterly Average) History — Forecast



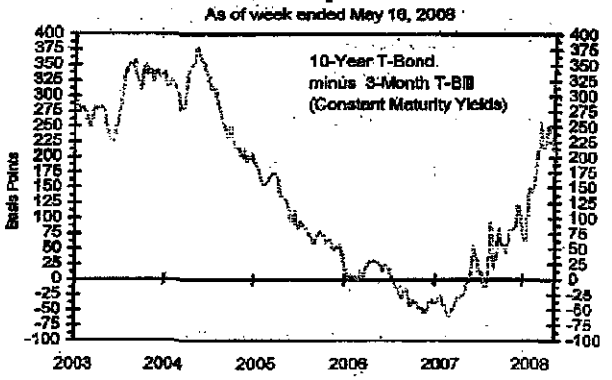
Corporate Bond Spreads

As of week ended May 16 2008



U.S. Treasury Yield Curve

As of week ended May 16, 2008



Ohio American Water Company
Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

Line No.		Over A Rated Public Utility Bonds AUS Consultants - Utility Services Study (1)
Time Period		1928-2006
1.	Arithmetic Mean Holding Period Returns (2): Standard & Poor's Public Utility Index	11.11 %
2.	Arithmetic Mean Yield on: Moody's A Rated Public Utility Bonds	(6.60)
3.	Equity Risk Premium	4.51 %

Notes: (1) S&P Public Utility Index and Moody's Public Utility Bond Average Annual Yields 1928-2006, (AUS Consultants - Utility Services, 2007).

(2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

Ohio American Water Company
Value Line Adjusted Betas for
the Proxy Group of Six AUS Utility Reports Water Companies

Proxy Group of Six AUS Utility Reports Water Companies	Value Line Adjusted Beta
American States Water Co.	1.00
Aqua America, Inc.	0.95
California Water Service Group	1.10
SJW Corporation	1.10
Southwest Water Company	1.00
York Water Co.	0.45
Average	0.93
Median	1.00

Source of Information: Value Line Investment Survey, April 25, 2008
Standard Edition and Small and Mid-Cap Edition

Ohio American Water Company
of the Capital Asset Pricing Model for
the Proxy Group of Six AUS Utility Reports Water Companies

Line No.		Proxy Group of Six AUS Utility Reports Water Companies
1.	Traditional Capital Asset Pricing Model (1)	11.77 %
2.	Empirical Capital Asset Pricing Model (1)	11.77 %
3.	Conclusion	11.77 %

Notes: (1) From page 2 of this Schedule.

Ohio American Water Company
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	1	2	3
	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 7.10% (1)	CAPM Result Including Risk-Free Rate of 4.67% (2)
Traditional Capital Asset Pricing Model (3)			
Proxy Group of Six AUS Utility Reports Water Companies			
American States Water Co.	1.00	7.10 %	11.77 %
Aqua America, Inc.	0.95	6.75	11.42
California Water Service Group	1.10	7.81	12.48
SJW Corporation	1.10	7.81	12.48
Southwest Water Co.	1.00	7.10	11.77
York Water Co.	0.45	3.20	7.87
Average	0.93	6.63 %	11.30 %
Median	1.00	7.10 %	11.77 %
Empirical Capital Asset Pricing Model (5)			
Proxy Group of Six AUS Utility Reports Water Companies			
American States Water Co.	1.00	7.10 %	11.77 %
Aqua America, Inc.	0.95	6.83	11.50
California Water Service Group	1.10	7.63	12.30
SJW Corporation	1.10	7.63	12.30
Southwest Water Co.	1.00	7.10	11.77
York Water Co.	0.45	4.17	8.84
Average	0.93	6.74 %	11.41 %
Median	1.00	7.10 %	11.77 %

See page 3 for notes.

Ohio American Water Company
Development of the Market-Required Rate of Return on Common Equity Using
the Capital Asset Pricing Model for
the Proxy Group of Six AUS Utility Reports Water Companies
Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return

Notes:

(1) For reasons explained in Ms. Ahern's accompanying direct testimony, from the three previous month-end (Mar. '08 – May '08), as well as a recently available (June 20, 2008), Value Line Summary & Index, a forecasted 3-5 year total annual market return of 16.50% can be derived by averaging the 3-month and spot forecasted total 3-5 year total appreciation, converting it into an annual market appreciation and adding the Value Line average forecasted annual dividend yield.

The 3-5 year average total market appreciation of 71% produces a four-year average annual return of 14.35% ($(1.71^{1/4}) - 1$). When the average annual forecasted dividend yield of 2.15% is added, a total average market return of 16.50% (2.15% + 14.35%) is derived.

The 3-month and spot forecasted total market return of 16.50% minus the risk-free rate of 4.67% (developed in Note 2) is 11.83% (16.50% - 4.67%). The Morningstar, Inc. (Ibbotson Associates) calculated market premium of 7.10% for the period 1926-2007 results from a total market return of 12.30% less the average income return on long-term U.S. Government Securities of 5.20% (12.30% - 5.20% = 7.10%). This is then averaged with the 11.83% Value Line market premium resulting in a 9.47% market premium. In Ms. Ahern's opinion, the current and recent substantial volatility in the stock market is extraordinary and not representative of the expected long-term. Consequently, in this instance, Ms. Ahern will not consider what she believes is an extraordinary expected capital appreciation and instead will rely only upon the 7.10% historical market premium which will be then multiplied by the beta in column 1 of page 2 of this Schedule.

(2) Average forecast based upon six quarterly estimates of 30-year Treasury Bond yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated June 1, 2008 (see page 7 of Schedule PMA-10.) The estimates are detailed below:

	30-Year Treasury Bond Yield
Second Quarter 2008	4.50%
Third Quarter 2008	4.50
Fourth Quarter 2008	4.60
First Quarter 2009	4.70
Second Quarter 2009	4.80
Third Quarter 2009	4.90
Average	4.67%

(3) The traditional Capital Asset Pricing Model (CAPM) is applied using the following formula:

$R_S = R_F + \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

(4) The empirical CAPM is applied using the following formula:

$R_S = R_F + .25 (R_M - R_F) + .75 \beta (R_M - R_F)$

Where R_S = Return rate of common stock
R_F = Risk-Free Rate
β = Value Line Adjusted Beta
R_M = Return on the market as a whole

Source of Information:
Value Line Summary & Index
Blue Chip Financial Forecasts, June 1, 2008
Value Line Investment Survey, April 25, 2008, Standard Edition and Small and Mid-Cap Edition
Ibbotson SBBI - 2008 Valuation Yearbook - Market Results for Stocks Bonds, Bills, and Inflation 1926 - 2007

Ohio American Water Company
Comparable Earnings Analysis
for a Proxy Group of Two Hundred Eighteen Non-Utility Companies Comparable to the
Proxy Group of Six AUS Utility Reports Water Companies (1)

Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital 5-year Median (2) Percent	Student's Statistic	5-Year Projected (3) Percent	Student's Statistic
ABM Industries Inc.	0.90	0.89	3.4027	0.1256	8.90 %	(0.80)	13.00 %	(0.36)
Advance Auto Parts	1.00	0.94	3.5084	0.1274	25.40	1.35	20.00	0.85
Affiliated Computer	1.00	0.99	3.5169	0.1278	13.90	(0.14)	15.50	-
Albemarle Corp.	1.20	1.28	2.8985	0.1058	11.80	(0.42)	19.00	0.58
Allergan, Inc.	0.85	0.76	2.8734	0.1079	30.40 (4)	2.04	13.50	(0.22)
Alliance Bernstein	1.20	1.27	2.9343	0.1102	18.70	0.49	25.00	1.38
Allied Capital Corp.	0.85	0.75	3.1408	0.1141	18.00	(0.66)	25.30	1.42
Amer. Cap. Strategies	1.15	1.19	2.9621	0.1079	16.80	(0.55)	12.00	(0.60)
Amer. Greetings	0.80	0.63	3.1980	0.1201	7.80	(0.95)	9.50	(0.86)
Amgen	0.80	0.66	3.0528	0.1109	18.10	0.41	13.50	(0.26)
Anadarko Petroleum	1.00	0.94	3.2440	0.1179	18.70	0.49	16.00	(0.07)
Analog Devices	0.95	0.92	3.6531	0.1327	15.00	-	30.50 (4)	2.17
Annaly Capital Mgmt.	0.85	0.74	3.5289	0.1282	4.30	(1.41)	3.00	(1.80)
Aon Corp.	1.00	0.93	3.8593	0.1374	12.10	(0.38)	11.50	(0.57)
Apache Corp.	1.00	0.93	3.4419	0.1251	19.30	0.67	16.50	0.15
Apartment Investment	0.95	0.85	3.1945	0.1161	9.20	(0.76)	10.50	(0.72)
Applied Biosystems	0.80	0.83	2.9776	0.1082	15.60	0.06	21.00	0.80
Arch Chemicals	1.15	1.20	3.4962	0.1270	10.50	(0.59)	13.00	(0.36)
Archer Daniels Midld	1.05	1.01	3.4456	0.1252	19.80	(0.64)	13.50	(0.26)
Arrow Electronics	1.15	1.17	3.6203	0.1315	11.20	(0.50)	10.00	(0.79)
AvalonBay Communities	1.05	1.01	2.8491	0.1035	4.80	(1.49)	9.50	(0.86)
Baker Hughes	1.00	0.96	3.5895	0.1304	18.60	0.48	17.00	0.22
Beckman Coulter	0.75	0.55	2.9061	0.1056	16.80	0.11	12.00	(0.58)
Bed Bath & Beyond	1.05	1.01	3.2562	0.1183	23.00	1.06	21.00	0.80
Belo Corp. 'A'	0.95	0.86	3.0624	0.1101	8.30	(0.88)	10.00	(0.79)
Berkley (W.R.)	0.95	0.90	2.8515	0.1070	20.80	0.74	17.00	0.22
Bio-Rad Labs. 'A'	0.90	0.81	3.5259	0.1324	11.70	(0.43)	12.50	(0.43)
Black & Decker	1.00	0.96	2.9576	0.1078	35.70 (4)	2.74	23.00	1.09
Block (H&R)	1.00	0.99	3.0871	0.1115	32.20 (4)	2.26	30.50 (4)	2.17
BMC Software	1.10	1.16	3.5591	0.1374	16.80	0.20	16.50	0.44
Bob Evans Farms	0.85	0.77	3.2511	0.1181	8.20	(0.90)	12.50	(0.43)
BorgWarner	1.20	1.28	2.9047	0.1090	13.50	(0.19)	16.00	0.37
BRE Properties	0.95	0.88	2.9128	0.1053	7.80	(1.01)	7.50	(1.15)
Brinker Int'l	1.00	0.97	3.4897	0.1261	16.00	0.40	57.50 (4)	6.06
Brink's (The) Co.	1.10	1.12	3.4060	0.1236	12.50	(0.33)	14.00	(0.21)
Brown & Brown	0.80	0.82	2.9573	0.1110	19.70	0.63	13.50	(0.26)
C.H. Robinson	1.05	1.03	3.4121	0.1240	26.10	1.47	24.50	1.30
CA Inc.	1.10	1.08	3.4951	0.1270	3.30	(1.54)	19.50	0.58
Cabot Corp.	1.15	1.17	2.9673	0.1076	11.30	(0.49)	14.00	(0.21)
Cadence Design Sys.	1.15	1.17	3.6725	0.1379	11.80	(0.42)	10.50	(0.72)
Cameron Int'l Corp.	1.05	1.03	3.4467	0.1253	10.70	(0.56)	22.00	0.94
Capital Trust	1.15	1.21	3.6077	0.1334	15.00	(0.20)	18.50	0.44
Cardinal Health	0.90	0.85	3.5514	0.1374	18.90	0.48	20.00	0.85
Carlisle Cos.	0.95	0.91	2.9819	0.1119	16.90	0.26	15.00	(0.07)
Casey's Gen'l Stores	1.05	1.06	3.1822	0.1156	10.80	(0.66)	12.00	(0.50)
CBRL Group	1.00	0.94	3.4872	0.1267	14.80	(0.06)	26.50	1.66
Charles River	0.85	0.71	3.9492	0.1217	7.80	(0.88)	10.00	(0.79)
Cheesecake Factory	1.10	1.14	3.6301	0.1316	12.80	(0.29)	14.00	(0.21)
ChoicePoint Inc.	0.80	0.83	3.0891	0.1122	16.10	0.15	16.50	0.44
Cisco Systems	1.10	1.12	3.2882	0.1227	23.30	1.10	25.00	1.38
CLARCOR Inc.	1.05	1.04	3.1412	0.1141	15.40	0.06	13.50	(0.26)
Clear Channel	0.90	0.78	2.9769	0.1197	5.80	(0.84)	10.00	(0.79)
Coca-Cola Bottling	0.80	0.82	3.2850	0.1195	30.50 (4)	2.65	40.00 (4)	3.84
Columbia Sportswear	1.00	0.92	3.4537	0.1255	17.80	0.35	15.00	(0.07)
Community Health	0.80	0.83	3.0504	0.1336	12.20	(0.37)	12.50	(0.43)
Computer Sciences	1.00	0.97	3.4852	0.1269	9.70	(0.70)	10.00	(0.79)
Conmed Corp.	1.05	1.04	3.3769	0.1227	9.20	(0.76)	9.00	(0.93)
ConocoPhillips	1.05	1.06	2.8212	0.1059	19.00	0.53	16.00	0.08
Constellation Brands	0.85	0.76	3.3304	0.1210	11.30	(0.49)	8.50	(1.01)

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Ohio American Water Company
Comparable Earnings Analysis
for a Proxy Group of Two Hundred Eighteen Non-Utility Companies Comparable to the
Proxy Group of Six AUS Utility Reports Water Companies (1)

Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital 5-year Median (2) Percent	5-year Median (2) Student's Statistic	5-Year Projected (3) Percent	5-Year Projected (3) Student's Statistic
Con-way Inc.	1.05	1.08	2.4598	0.1257	12.40	0.58	16.00	0.06
Corrections Corp. Amer.	0.90	0.83	3.1968	0.1162	10.10	(0.84)	11.50	(0.57)
Covance Inc.	0.75	0.57	3.9210	0.1207	13.70	0.15	15.00	(0.07)
CVS Caremark Corp.	0.75	0.57	2.6949	0.1053	13.60	(0.19)	11.50	(0.57)
Cytec Inds.	1.20	1.28	2.5787	0.1091	11.40	(0.47)	11.00	(0.65)
Datascope Corp.	1.10	1.09	3.4861	0.1257	8.20	(0.90)	10.00	(0.79)
DaVita Inc.	0.80	0.69	2.9345	0.1064	24.40	1.25	14.50	(0.14)
Dell Inc.	1.00	0.98	3.2448	0.1179	58.20 (4)	5.72	21.00	0.60
Developers Div. Rlty.	1.00	0.95	2.9887	0.1085	4.10	(1.44)	4.00	(1.06)
Dionex Corp.	0.95	0.89	3.1622	0.1149	22.50	1.01	28.50	1.95
DRS Technologies	1.00	0.99	3.5884	0.1348	8.50	(0.86)	9.50	(0.58)
DRS Technologies	1.00	0.99	3.5884	0.1348	8.50	(0.86)	9.50	(0.58)
Duke Realty Corp.	1.00	0.96	2.8352	0.1030	5.10	(1.17)	6.00	(1.37)
Eastman Chemical	1.15	1.17	2.8925	0.1051	20.40	0.72	24.00	1.23
Edwards Lifesciences	0.75	0.59	2.8518	0.1070	18.60	0.22	17.00	0.22
Electronic Data Sys.	1.10	1.11	3.3879	0.1251	8.60	(1.11)	9.50	(0.86)
Equity Residential	1.05	1.05	2.8349	0.1064	2.50	(1.65)	2.50	(1.87)
Ethan Allen Interiors	1.15	1.15	3.3701	0.1225	19.00	0.53	15.50	-
Federal Rlty. Inv. Trust	1.00	0.97	2.8307	0.1028	19.60	(0.55)	12.00	(0.80)
First Commonwealth	1.10	1.11	2.9662	0.1656	9.30	(0.75)	9.50	(0.58)
Flowers Foods	0.95	0.91	3.0595	0.1112	12.30	(0.35)	15.00	(0.07)
FMC Corp.	1.20	1.24	2.9498	0.1107	17.90	0.32	22.00	0.94
G&K Services 'A'	1.00	0.88	3.1697	0.1161	5.30	(0.66)	7.50	(1.16)
Gentex Corp.	1.20	1.25	3.5028	0.1362	15.00	-	16.50	0.15
Glatfelter	1.15	1.18	3.3191	0.1206	4.00	(1.45)	10.00	(0.79)
Global Payments	0.95	0.90	3.4741	0.1262	15.30	0.65	16.00	0.08
Goodrich Corp.	1.05	1.08	3.1958	0.1200	16.80	0.22	19.50	0.66
Griffon Corp.	1.10	1.13	3.4429	0.1251	13.50	(0.18)	10.50	(0.72)
Haemonetics Corp.	0.75	0.61	3.3628	0.1270	11.20	(0.50)	13.50	(0.28)
Hain Celestial Group	0.90	0.78	3.3550	0.1219	6.20	(1.16)	9.50	(0.85)
Halliburton Co.	1.10	1.08	3.0603	0.1284	26.30	1.60	20.50	0.73
Hancock Holding	1.05	0.83	3.2174	0.1169	12.80	(0.31)	11.50	(0.57)
Hanover Insurance	1.15	1.16	3.0654	0.1158	6.00	(1.19)	9.00	(0.93)
Harley-Davidson	0.85	0.89	3.3677	0.1231	31.10 (4)	2.12	33.50 (4)	2.60
Harte-Hanks	0.85	0.75	2.8921	0.1051	20.40	0.72	19.00	0.51
Hasbro Inc.	0.95	0.89	2.8550	0.1037	15.00	-	22.00	0.94
Healthcare Rlty Trust	0.90	0.82	3.1856	0.1168	4.50	(1.36)	7.00	(1.22)
Heartland Express	1.10	1.14	3.5885	0.1340	16.80	0.22	16.50	-
Hewlett-Packard	1.10	1.13	3.1236	0.1135	12.70	(0.30)	23.50	1.18
Hill Corp.	0.90	0.81	3.3646	0.1291	22.70	1.02	20.00	0.65
IDEXX Labs.	0.75	0.61	3.2100	0.1166	21.40	0.85	19.00	0.51
Ingles Markets	0.85	0.77	3.4634	0.1227	11.00	(0.53)	16.00	(0.07)
Integra LifeSciences	0.85	0.75	3.5268	0.1382	10.50	(0.65)	16.00	0.06
Intuit Inc.	1.00	0.97	3.4611	0.1258	22.10	0.94	16.50	0.44
Iron Mountain	0.80	0.83	2.9785	0.1060	8.30	(0.88)	12.00	(0.50)
Journal Communications	0.80	0.76	2.8642	0.1176	12.80	(0.31)	7.50	(1.15)
Kaydon Corp.	1.20	1.24	3.0055	0.1128	12.90	(0.27)	13.00	(0.36)
Kelly Services 'A'	1.10	1.09	3.0148	0.1065	5.80	(1.31)	9.00	(0.93)
Kimco Realty	1.00	0.97	2.9198	0.1061	11.40	(0.47)	11.50	(0.57)
Kirby Corp.	1.20	1.25	3.2043	0.1203	12.90	(0.29)	12.50	(0.43)
Leader (Estee)	0.90	0.89	3.0535	0.1110	25.80	1.41	37.00 (4)	3.11
Leggett & Platt	0.95	0.87	3.0612	0.1120	12.30	(0.35)	13.50	(0.28)
Liberty Property	1.05	1.04	2.8264	0.1061	8.20	(0.90)	11.50	(0.57)
Limited Brands	1.20	1.26	3.5655	0.1336	22.80	1.04	24.00	1.23

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Ohio American Water Company
Comparable Earnings Analysis
for a Proxy Group of Two Hundred Eighteen Non-Utility Companies Comparable to the
Proxy Group of Six AUS Utility Reports Water Companies (1)

Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital 5-year Median (2) Percent	Student's Statistic	5-Year Projected (3) Percent	Student's Statistic
Liz Claiborne	0.95	0.89	3.2222	0.1171	15.90	0.11	10.00	(0.76)
Lowe's Cos.	1.00	0.96	3.2332	0.1176	15.90	0.52	11.50	(0.57)
Mack-Cali Rlty	0.90	0.84	2.8325	0.1068	4.80	(1.37)	8.00	(1.37)
Macy's Inc.	1.20	1.24	3.5429	0.1330	9.80	(0.66)	8.50	(1.91)
Manpower Inc.	1.15	1.20	3.5816	0.1112	12.10	(0.38)	14.50	(0.14)
Mattel Inc.	0.85	0.78	3.0250	0.1100	23.10	1.05	25.00	1.38
MAXIMUS Inc.	0.95	0.85	3.4887	0.1313	8.90	(0.60)	20.00	0.85
McClatchy Co.	0.80	0.82	3.2986	0.1256	11.10	(0.51)	17.00	0.22
McKesson Corp.	0.85	0.71	3.4285	0.1246	12.50	(0.39)	14.50	(0.14)
Mohawk Inds.	1.05	1.03	3.0207	0.1098	12.80	(0.31)	8.50	(1.91)
Molex Inc.	1.15	1.20	3.0804	0.1112	9.80	(0.79)	10.00	(0.79)
MSC Industrial Direct	1.15	1.22	3.6527	0.1331	21.20	0.82	19.00	0.51
Murphy Oil Corp.	1.00	0.95	3.4771	0.1263	16.30	0.15	15.00	(0.07)
Nabors Inds.	1.10	1.09	3.6307	0.1363	17.30	0.31	12.00	(0.50)
National Instruments	1.15	1.15	3.8892	0.1393	12.20	(0.37)	18.00	0.37
National Presto Ind.	0.90	0.82	2.9788	0.1082	7.20	(1.83)	16.50	-
New York Community	0.98	0.91	2.8492	0.1035	8.80	(0.82)	15.00	(0.07)
Newell Rubbermaid	1.05	1.04	3.0184	0.1097	21.80	0.88	17.50	0.29
Noble Energy	1.05	1.01	3.3380	0.1213	20.40	0.72	11.50	(0.57)
Norfolk Southern	1.15	1.18	3.3379	0.1213	12.50	(0.33)	12.50	(0.45)
Occidental Petroleum	1.10	1.14	2.9826	0.1084	22.70	1.02	14.50	(0.14)
Old Nat'l Bancorp	1.00	0.98	3.1704	0.1190	11.90	(0.46)	13.00	(0.38)
Oracle Corp.	1.05	1.03	3.1146	0.1132	32.70 (4)	2.35	27.00	1.88
O'Reilly Automotive	1.05	1.07	3.1825	0.1149	12.80	(0.29)	12.00	(0.80)
Owens & Minor	0.80	0.85	3.1925	0.1160	13.00	(0.26)	12.00	(0.80)
Pactiv Corp.	1.10	1.15	3.1167	0.1130	19.90	0.65	15.00	(0.07)
Pall Corp.	1.05	1.00	2.9882	0.1086	12.40	(0.34)	17.50	0.29
Papa John's Int'l	0.90	0.82	3.2830	0.1192	28.00	1.72	20.00	0.65
Patterson Cos.	0.70	0.52	5.6570	0.1328	18.10	0.41	16.00	0.08
Paychex Inc.	0.90	0.84	2.8783	0.1046	28.80	1.84	38.50 (4)	3.47
Pediatrix Medical	0.95	0.91	3.0922	0.1305	15.40	0.86	14.50	(0.14)
Penn Virginia Res.	0.85	0.88	3.1881	0.1162	16.40	0.45	20.00	0.88
Penn. R.E.I.T.	0.90	0.78	3.2855	0.1194	3.20	(1.56)	8.50	(1.29)
Penske Auto	1.20	1.27	3.5494	0.1332	10.40	(0.60)	10.50	(0.72)
People's United Fin'l	0.95	0.97	3.0432	0.1186	7.60	(0.85)	6.50	(1.23)
PerkinElmer Inc.	1.15	1.19	3.3226	0.1233	8.40	(0.67)	12.50	(0.43)
Prologis	1.05	1.04	2.9172	0.1060	7.50	(0.89)	14.00	(0.21)
Public Storage	0.95	0.89	2.9664	0.1077	8.00	(0.82)	7.50	(1.15)
Qualcomm Inc.	1.05	1.06	3.6137	0.1357	16.90	0.52	18.00	0.51
Ralcorp Holdings	0.75	0.66	3.3718	0.1266	15.00	-	15.50	-
Realty Income Corp.	1.00	0.95	2.8765	0.1081	9.90	(0.79)	9.00	(0.95)
Regions Financial	1.05	1.05	2.8532	0.1075	8.10	(0.91)	9.50	(0.80)
Regis Corp.	1.10	1.13	2.9286	0.1065	13.50	(0.18)	10.00	(0.79)
ResMed Inc.	0.80	0.67	3.4968	0.1279	13.70	(0.17)	14.50	(0.14)
Reynolds American	0.80	0.68	3.3526	0.1218	15.00	-	17.00	0.22
Rockwell Automation	1.30	1.26	3.2202	0.1208	29.70	1.95	29.00	1.95
Rollins Inc.	0.85	0.89	3.2679	0.1187	27.30	1.68	25.00	1.32
Ross Stores	1.05	1.05	3.5041	0.1310	25.90	1.64	27.50	1.88
Royal Caribbean Cruises	1.10	1.10	3.8255	0.1316	9.90	(0.57)	9.50	(0.80)
Ruddick Corp.	0.85	0.85	3.0476	0.1107	11.30	(0.48)	12.00	(0.50)
Ryder System	1.15	1.18	3.4190	0.1242	13.50	(0.19)	12.00	(0.80)
Safeco Corp.	0.80	0.67	3.2778	0.1230	15.80	0.11	10.50	(0.72)
Safeway Inc.	0.95	0.87	3.2117	0.1167	13.30	(0.22)	13.50	(0.36)
SAP AG	1.15	1.20	3.0815	0.1149	29.00	1.95	22.00	0.94
Schlumberger Ltd.	1.05	1.04	3.4499	0.1254	26.60	1.64	16.50	0.15

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for a Proxy Group of Two Hundred Eighteen Non-Utility Companies Comparable to the
Proxy Group of Six AUS Utility Reports Water Companies (1)

Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital			
					5-Year Median (2)		5-Year Projected (3)	
					Percent	Student's Statistic	Percent	Student's Statistic
Scholastic Corp.	0.85	0.81	3.2422	7.6500	6.90	(1.07)	7.00	(1.22)
Schulman (A.)	1.03	1.04	3.5788	0.1300	8.40	(1.13)	7.50	(1.15)
Scotts Miracle-Gro	1.10	1.14	3.1078	0.1128	12.30	(0.35)	21.00	0.80
Sealed Air	0.95	0.90	2.8703	0.1043	17.10	0.28	12.50	(0.43)
Selective Ins. Group	0.85	0.87	2.8575	0.1038	12.50	(0.20)	12.50	(0.43)
Sensient Techs.	0.95	0.91	2.8460	0.1034	9.60	(0.71)	9.50	(0.68)
Silgan Holdings	1.10	1.10	3.3024	0.1200	34.60 (4)	2.50	16.50	0.15
Smithfield Foods	0.95	0.85	3.1526	0.1146	9.40	(0.74)	9.50	(0.68)
Snap-on Inc.	1.00	0.97	2.8252	0.1061	9.90	(0.57)	16.00	0.05
Sonic Automotive	1.16	1.21	3.4288	0.1246	12.50	(0.35)	13.50	(0.28)
Southwest Airlines	0.90	0.80	2.9143	0.1094	8.60	(1.06)	9.50	(0.68)
Sovereign Bancorp	1.15	1.22	3.2416	0.1178	11.10	(0.51)	12.00	(0.50)
SPX Corp.	1.15	1.15	3.5657	0.1298	8.60	(0.82)	15.00	(0.07)
Standex Intl	1.10	1.11	3.5310	0.1288	11.10	(0.51)	14.50	(0.14)
Staples Inc.	1.10	1.09	3.0650	0.1114	17.40	0.32	17.00	0.22
Starbucks Corp.	0.95	0.91	3.1403	0.1141	33.70	1.15	25.00	1.35
Stericycle Inc.	0.95	0.76	3.4458	0.1252	17.40	0.32	15.50	(0.07)
STERIS Corp.	0.85	0.74	3.1238	0.1135	11.40	(0.47)	16.00	0.08
Stryker Corp.	0.90	0.82	2.8494	0.1070	21.00	0.90	25.00	1.58
SUPERVALU INC.	0.96	0.87	3.3072	0.1202	12.30	(0.35)	10.50	(0.72)
Sequa Corp. Series A	1.15	1.16	3.0685	0.1115	9.30	(0.75)	8.50	(1.01)
Sybase Inc.	0.95	0.86	3.2591	0.1184	11.30	(0.49)	12.00	(0.50)
Target Corp.	0.95	0.91	3.0074	0.1093	17.00	0.27	19.50	0.58
TCF Financial	1.05	1.03	2.8412	0.1032	24.50	1.20	17.50	0.29
Tech Data	1.00	0.99	3.1722	0.1153	8.70	(1.00)	8.00	(1.08)
Teckne Corp.	1.05	1.04	3.0920	0.1124	19.40	0.59	19.00	0.51
Teekay Corp.	1.05	1.00	3.8482	0.1328	10.70	(0.66)	14.50	(0.14)
Tennant Co.	1.05	1.01	3.4639	0.1259	11.90	(0.41)	13.50	(0.28)
Texas Instruments	1.15	1.19	3.6118	0.1312	16.60	0.48	16.00	0.08
Tidewater Inc.	1.10	1.06	3.5741	0.1379	11.60	(0.45)	12.00	(0.50)
TJX Companies	0.90	0.79	3.0079	0.1093	41.30 (4)	3.48	35.50 (4)	3.52
Total System Svcs.	1.05	1.05	3.4888	0.1267	19.23	0.55	17.50	0.29
United Stationers	1.05	1.01	3.1302	0.1175	12.80	(0.27)	15.00	(0.07)
UnitedHealth Group	0.70	0.58	3.0986	0.1128	23.20	1.09	20.00	0.66
Universal Corp.	0.85	0.72	2.8238	0.1062	11.00	(0.53)	12.50	(0.43)
Universal Health Sv. 'B'	0.75	0.66	3.2462	0.1179	13.20	(0.23)	11.50	(0.57)
Varian Inc.	1.05	1.07	3.4389	0.1250	10.30	(0.62)	12.50	(0.43)
Varian Medical Sys.	0.95	0.85	3.0084	0.1312	28.00	1.72	17.50	0.29
Vlad Corp.	1.15	1.09	3.3335	0.1483	8.90	(0.89)	11.00	(0.68)
W.P. Carey & Co. LLC	0.80	0.68	2.8754	0.1045	11.20	(0.50)	17.00	0.22
Watson Pharmac.	0.95	0.85	3.4977	0.1271	5.20	(0.90)	15.00	(0.79)
WD-40 Co.	1.05	1.02	3.4235	0.1244	21.50	0.96	15.50	
Werner Enterprises	1.10	1.13	3.4127	0.1240	11.30	(0.49)	11.50	(0.57)
Whirlpool Corp.	1.15	1.20	3.3092	0.1202	24.20	1.22	14.50	(0.14)
Wilmington Holding	1.15	1.08	2.9089	0.1062	10.70	(0.58)	11.50	(0.57)
World Wrestling Ent.	0.80	0.68	3.2826	0.1186	11.90	(0.41)	25.50	1.45
Wyeth	0.80	0.80	2.9756	0.1081	32.60 (4)	2.36	16.00	0.51
Xerox Corp.	1.05	1.07	2.8618	0.1036	12.90	(0.27)	14.50	(0.14)
Zebra Techn. 'A'	1.15	1.08	3.4815	0.1255	13.10	(0.25)	13.00	(0.36)
Zimmer Holdings	0.85	0.74	3.4097	0.1239	18.30	0.16	13.50	(0.24)
	1.00	0.97	3.2277	0.1180				
Average for the Proxy Group of Six AUS Utility Reports Water Companies	0.98	0.91	3.2465 (5)	0.1219				
Median					12.60%		14.50%	
Conclusion (6)						13.55% (6)		
Conservative Median (7)					12.60%		14.00%	
Conservative Conclusion (8)						13.30% (8)		

See page 9 for notes.

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Proxy Group of Six AUS Utility Reports Water Companies (1)

Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital					
					2003	2004	2005	2006	2007	5-Year Projected
ABM Industries Inc.	0.90	0.60	3.4027	0.1236	9.2 %	9.5 %	9.8 %	8.9 %	8.2 %	13.0 %
Advance Auto Parts	1.00	0.94	3.6054	0.1274	28.4	28.3	25.5	22.4	23.6	20.0
Affiliated Computer	1.00	0.99	3.5169	0.1278	12.8	13.9	14.3	14.6	12.2	16.5
Albemarle Corp.	1.2	1.20	2.9885	0.1045	18.3	16.8	11.8	19.2	16.2	19.5
Allergan, Inc.	0.85	0.78	2.5734	0.1079	42.4	33.2	30.4	14.4	15.4	13.6
Alliance Bernstein	1.2	1.27	2.5046	0.1102	15.0	15.6	16.7	22.8	26.1	26.0
Allied Capital Corp.	0.85	0.76	3.1408	0.1141	10.0	12.6	33.3	8.8	5.6	28.3
Amer. Cap. Strategies	1.15	1.19	2.9621	0.1876	12.0	11.8	10.6	8.8	9.2	12.0
Amer. Greetings	0.8	0.63	3.1869	0.1291	8.3	7.8	7.4	2.8	6.0 E	9.5
Amgen	0.80	0.69	3.0526	0.1109	11.7	14.6	18.1	22.0	21.0	13.5
Anadarko Petroleum	1.00	0.94	3.2440	0.1179	14.4	17.2	22.3	18.7	20.1	15.0
Analog Devices	0.95	0.92	3.0521	0.1327	9.1	15.0	13.2	18.6	20.3	30.0
Annaly Capital Mgmt.	0.85	0.74	3.5289	0.1282	4.3	6.7	6.5	3.3	2.7	3.0
Ann Corp.	1	0.89	3.6893	0.1374	14.8	11.2	12.1	12.2	10.9	11.5
Apache Corp.	1.00	0.93	3.4419	0.1251	19.1	20.4	24.9	19.3	18.3	16.5
Apartment Investment	0.95	0.89	3.1948	0.1181	7.7	8.8	9.2	9.7	9.5	10.5
Applied Biosystems	0.80	0.63	2.9726	0.1862	13.8	13.9	15.6	18.8	16.8	21.0
Arch Chemicals	1.15	1.20	3.4952	0.1276	4.8	4.8	10.9	10.8	11.8	13.0
Archer Daniels Mid'd	1.05	1.01	3.4456	0.1252	6.2	9.7	10.9	12.4	13.9	13.5
Arrow Electronics	1.15	1.17	3.5283	0.1316	9.0	10.7	11.2	12.0	11.5	10.0
Avalon Bay Communities	1.05	1.01	2.5481	0.1035	5.8	3.8	4.0	6.8	6.3	9.5
Baker Hughes	1.00	0.92	3.5868	0.1304	9.0	13.6	18.5	26.0	24.0	17.0
Beckman Coulter	0.75	0.55	2.9061	0.1056	20.3	19.3	15.6	13.8	14.2	12.0
Bed Bath & Beyond	1.05	1.01	3.2562	0.1183	20.1	22.9	28.3	23.1	23.0 E	21.0
Beta Corp. "A"	0.95	0.85	2.6824	0.1191	8.1	9.7	8.3	9.0	8.3	10.0
Bentley (A.R.)	0.85	0.8	2.6815	0.167	17.0	19.5	20.7	20.8	20.6	17.0
Bio-Rad Labs. "A"	0.9	0.84	3.0259	0.1324	17.3	13.1	11.7	11.4	10.4	12.5
Black & Decker	1.00	0.98	2.9528	0.1075	36.6	28.3	35.7	41.8	27.5 E	23.0
Block (H&R)	1.00	0.99	3.0671	0.1115	37.1	32.2	24.6	28.5	49.0 E	30.5
BMC Software	1.1	1.1	3.6991	0.1374	6.0	6.6	16.5	20.6	26.9 E	16.5
Bob Evans Farms	0.85	0.77	3.2511	0.1181	11.4	5.7	6.8	8.2	9.0 E	12.5
BorgWarner	1.2	1.28	2.9047	0.109	13.9	13.5	15.0	12.5	13.0 E	18.0
BRE Properties	0.85	0.89	2.9123	0.1058	6.0	7.0	9.0	7.4	7.3	7.5
Bunker Int'l	1.00	0.97	3.4887	0.1261	19.1	20.7	18.0	18.0	27.2	57.5
Bunk's (The) Co.	1.10	1.12	3.4080	0.1238	3.7	14.9	6.1	12.6	14.2	14.0
Brown & Brown	0.8	0.62	2.9978	0.111	22.2	20.8	16.7	16.5	17.4	13.5
C.H. Robinson	1.05	1.03	3.4121	0.1240	22.1	22.1	28.1	28.3	31.1	24.5
CA Inc.	1.15	1.08	3.4961	0.1276	1.9	4.1	3.3	3.2	19.5 E	19.5
Cabot Corp.	1.15	1.17	2.9873	0.1076	11.8	10.2	11.0	8.8	11.3	14.0
Cadence Design Sys.	1.15	1.17	3.6729	0.1378	8.9	11.8	14.0	8.4	14.2	10.0
Cameron Int'l Corp.	1.00	1.09	3.4487	0.1253	5.7	7.7	10.7	17.2	22.4	22.0
Capital Trust	1.45	1.31	3.6977	0.1384	23.9	6.8	13.0	12.7	16.9	18.5
Cardinal Health	0.9	0.85	3.6814	0.1378	18.8	19.6	16.5	18.8	18.7	20.0
Carlisle Cos.	0.85	0.81	2.9910	0.1157	14.1	16.9	16.3	16.8	16.4	15.0
Casey's Gen'l Stores	1.05	1.05	3.1922	0.1158	9.3	9.1	12.0	10.8	13.0 E	12.5
CBRL Group	1.00	0.94	3.4872	0.1267	13.4	13.2	14.8	38.6	73.0	28.5
Charles River	0.85	0.71	3.3462	0.1217	17.3	6.5	6.4	7.2	6.4	10.0
Cheesecake Factory	1.10	1.14	3.6201	0.1315	12.6	12.8	13.5	11.4	13.5	14.0
ChoicePoint Inc.	0.80	0.63	3.0891	0.1122	18.1	15.0	16.0	20.9	41.4	18.5
Cisco Systems	1.1	1.12	3.2882	0.1227	15.3	20.7	24.8	23.3	23.3	25.0
CLARCOR Inc.	1.05	1.04	3.1612	0.1141	14.7	14.9	15.8	16.4	16.3	13.5
Clear Channel	0.9	0.78	2.9763	0.1117	4.8	5.7	7.2	8.6	8.8	10.0
Coca-Cola Bottling	0.80	0.68	3.2980	0.1185	68.8	33.9	30.5	24.7	16.5	40.0
Columbia Sportswear	1.00	0.92	3.4637	0.1255	19.7	17.8	17.6	14.8	14.9	15.0
Community Health	0.60	0.63	3.6504	0.1329	9.7	12.8	12.2	12.3	10.7	12.6
Computer Sciences	1.00	0.97	3.4652	0.1259	9.7	7.8	9.2	11.1	12.0 E	10.0
Comtech Corp.	1.05	1.04	3.3759	0.1227	10.2	11.3	9.2	6.4	7.9	9.0

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Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital					
					2003	2004	2005	2006	2007	5-Year Projected
ConocoPhillips	1.05	1.05	2.8212	0.1659	13.4	19.0	20.3	19.8	16.9	16.0
Constellation Brands	0.85	0.75	3.3304	0.1216	11.2	11.3	12.6	11.8	10.9	8.5
Con-way Inc.	1.05	1.06	3.4585	0.1267	10.5	13.6	24.4	28.3	14.7	16.0
Corrections Corp. Amer.	0.90	0.83	3.1966	0.1162	19.2	7.7	6.0	19.1	19.6	11.5
Covance Inc.	0.75	0.57	3.3210	0.1207	13.5	15.4	16.3	15.7	15.3	16.0
CVS Caremark Corp.	0.75	0.67	2.8949	0.1052	14.1	13.1	14.1	13.5	8.4	11.5
Cytec Inds.	1.2	1.25	2.8787	0.1091	12.0	13.2	11.4	10.8	9.7	11.0
Datascope Corp.	1.10	1.09	3.4881	0.1267	7.9	8.2	6.5	9.1	8.2	10.0
DaVita Inc.	0.80	0.68	2.9848	0.1084	53.2	41.5	24.4	21.3	18.7	14.5
Dell Inc.	1.00	0.98	3.2448	0.1179	42.1	61.2	92.6	58.2	76.9	21.0
Developers Div. Rlty	1.00	0.95	2.9887	0.1086	5.6	3.9	3.8	4.1	4.1	4.0
Dionex Corp.	0.85	0.86	3.1822	0.1148	19.7	22.8	24.9	19.3	24.4	28.5
DRS Technologies	1	0.99	3.5884	0.1348	7.8	8.7	6.9	8.5	9.8	9.5
DRS Technologies	1	0.99	3.5884	0.1348	7.8	8.7	6.9	8.5	9.8	9.5
Duke Realty Corp.	1.00	0.96	2.6352	0.1638	7.9	7.5	5.4	6.1	5.6	6.0
Eastman Chemical	1.15	1.17	2.8925	0.1851	7.2	16.8	30.1	20.5	20.4	24.0
Edwards Lifesciences	0.75	0.69	2.9518	0.107	19.2	16.8	16.1	17.0	18.5	17.0
Electronic Data Sys.	1.10	1.11	3.3870	0.1231	7.9	2.1	3.2	6.8	8.7	9.5
Equity Residential	1.05	1.05	2.894	0.1064	4.8	2.9	2.6	1.3	1.6	2.5
Ethan Allen Interiors	1.15	1.15	3.5701	0.1226	16.3	18.3	16.4	21.2	19.0	15.5
Federal Rlty. Inv. Trust	1.00	0.97	2.8307	0.1029	10.8	12.5	16.6	12.1	8.6	12.0
First Commonwealth	1.10	1.11	2.9482	0.1066	11.8	7.5	9.4	8.5	8.1	9.5
Flowers Foods	0.95	0.91	3.0585	0.1112	9.1	9.5	12.3	13.3	14.6	E 15.0
FMC Corp.	1.2	1.26	2.9449	0.2107	11.8	19.4	17.8	21.2	22.4	22.0
G&K Services 'A'	1.05	0.96	3.1687	0.1151	6.9	6.3	8.4	7.6	7.3	7.5
Gentex Corp.	1.2	1.26	3.8028	0.1362	15.4	14.4	13.8	15.5	15.0	E 16.5
Glatfelter	1.15	1.15	3.3191	0.1206	2.9	3.2	4.8	6.3	7.4	10.0
Global Payments	0.85	0.80	3.4741	0.1262	14.3	13.9	16.5	16.5	15.2	16.0
Goodrich Corp.	1.05	1.00	3.1958	0.12	3.2	12.8	16.6	17.0	19.2	18.5
Griffon Corp.	1.10	1.13	3.4429	0.1251	16.1	16.9	13.5	12.0	4.7	10.5
Haemonetics Corp.	0.75	0.61	3.0829	0.127	10.5	11.2	11.6	10.5	11.5	E 13.5
Hain Celestial Group	0.80	0.78	3.3580	0.1219	6.2	5.4	6.0	6.5	5.6	9.5
Halliburton Co.	1.10	1.08	3.5603	0.1294	15.2	9.8	26.3	37.4	34.8	20.5
Hancock Holding	1.00	0.93	3.2174	0.1169	12.8	12.5	11.3	15.9	13.6	11.5
Hanover Insurance	1.15	1.15	3.0864	0.1168	4.5	6.0	3.6	9.7	10.2	9.0
Harley-Davidson	0.85	0.69	3.5877	0.1231	29.7	27.6	31.1	37.9	38.3	33.5
Harte-Hanks	0.85	0.75	2.8921	0.1051	19.7	17.1	20.4	22.7	22.7	19.0
Hasbro Inc.	0.85	0.89	2.8550	0.1037	16.3	13.3	13.8	15.0	25.4	22.0
Healthcare Rlty Trust	0.90	0.82	3.1858	0.1158	7.7	6.0	4.1	4.8	2.6	7.0
Heartland Express	1.1	1.14	3.5583	0.154	15.8	16.0	16.6	17.6	22.2	15.5
Hewlett-Packard	1.15	1.13	3.1236	0.1135	9.4	10.6	12.7	15.1	16.8	23.5
HNI Corp.	0.90	0.81	3.3048	0.1201	13.6	17.1	22.7	24.9	27.1	20.0
IDEXX Labs.	0.75	0.61	3.2100	0.1166	14.9	16.6	21.5	21.4	23.3	19.0
Ingles Markets	0.85	0.77	3.4034	0.1237	7.9	11.0	9.6	14.0	14.2	15.0
Integra LifeSciences	0.85	0.79	3.6288	0.1382	10.0	6.5	12.6	9.8	13.0	15.0
Intuit Inc.	1.00	0.97	3.4611	0.1258	15.0	17.4	22.1	25.4	24.9	16.5
Iron Mountain	0.80	0.63	2.9735	0.1080	7.9	7.7	6.3	8.3	8.5	12.0
Journal Communications	0.90	0.78	2.8542	0.1175	14.4	16.0	12.8	11.8	6.6	7.5
Kaydon Corp.	1.2	1.21	3.0066	0.1128	10.9	12.4	12.9	16.9	16.6	13.0
Kelly Services 'A'	1.10	1.09	3.0148	0.1095	6.5	3.4	5.6	7.5	6.6	9.0
Kimco Realty	1.00	0.97	2.6198	0.1061	11.4	12.6	13.9	10.6	6.7	11.5
Kirby Corp.	1.2	1.25	3.2043	0.1203	11.9	11.4	12.8	15.1	16.0	12.5
Lauder (Estee)	0.80	0.69	3.0833	0.1116	19.7	21.7	25.6	25.7	37.4	37.0
Leggett & Platt	0.95	0.87	3.0812	0.1128	9.7	12.3	12.3	12.5	2.4	15.5
Liberty Property	1.05	1.04	2.8284	0.1066	10.8	10.1	8.0	8.2	6.9	11.5
Limited Brands	1.2	1.25	3.5856	0.1356	11.1	27.3	22.7	22.8	32.4	24.0

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Table 1

Utility Investment Water Company
Comparable Earnings Analysis
for a Proxy Group of Two Hundred Eighteen Non-Utility Companies Comparable to the
Proxy Group of Six AUS Utility Reports Water Companies (1)

Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital					
					2003	2004	2005	2006	2007	5-Year Projected
Liz Claiborne	0.95	0.89	3.2222	0.1171	17.7	17.3	15.8	14.5	8.6	10.0
Lowe's Cos.	1.00	0.98	3.2332	0.1175	18.1	18.9	18.3	18.7	17.4	11.5
Mack-Cali Rlty	0.90	0.84	2.8325	0.1068	6.3	6.4	5.9	4.8	4.5	6.8
Macy's Inc.	1.2	1.24	3.5429	0.139	11.0	11.2	8.2	8.4	9.8	8.5
Manpower Inc.	1.15	1.20	3.9016	0.1112	10.6	11.3	12.1	13.3	16.8	14.5
Mattel Inc.	0.85	0.76	3.9260	0.1160	24.9	21.3	23.1	22.6	25.2	25.0
Maxtrus Inc.	0.85	0.85	3.4697	0.1313	10.9	10.4	6.9	9.9	4.9	20.0
McCleichy Co.	0.9	0.82	3.2995	0.1239	11.8	11.1	10.3	8.7	28.8	17.0
McKesson Corp.	0.85	0.71	3.4285	0.1245	12.5	12.4	12.5	14.0	16.7	14.5
Mohawk Inds.	1.05	1.03	3.0287	0.1088	13.5	13.5	12.6	12.0	9.3	6.5
Molex Inc.	1.15	1.20	3.0804	0.1112	6.0	6.5	9.0	11.8	10.4	10.0
MSC Industrial Direct	1.15	1.22	3.6827	0.1331	19.2	13.1	21.2	21.5	24.1	19.0
Murphy Oil Corp.	1.00	0.95	3.4771	0.1263	13.1	17.5	21.0	14.8	19.3	16.0
Nabors Inds.	1.1	1.09	3.6397	0.1308	7.7	10.3	17.3	30.6	20.1	12.0
National Instruments	1.15	1.15	3.6662	0.1333	7.8	10.0	12.2	12.2	13.1	16.0
National Presto Ind.	0.80	0.62	2.8788	0.1062	8.5	6.0	7.2	10.0	13.1	16.5
New York Community	0.95	0.91	2.8462	0.1035	11.3	11.1	8.8	8.3	6.7	15.0
Newell Rubbermaid	1.05	1.04	3.0164	0.1097	20.2	21.8	26.6	24.9	21.3	17.5
Noble Energy	1.05	1.01	3.3366	0.1213	13.1	22.4	28.4	20.8	19.2	11.5
Norfolk Southern	1.18	1.18	3.3378	0.1213	7.8	10.8	12.6	15.4	16.1	12.5
Occidental Petroleum	1.10	1.14	2.9828	0.1084	20.3	25.4	26.4	22.7	19.2	14.5
Old Nat'l Bancorp	1	0.99	3.1704	0.115	9.8	9.8	12.1	12.4	11.5	13.0
Oracle Corp.	1.08	1.03	3.1148	0.1132	36.8	33.5	32.7	28.3	31.3	27.0
O'Reilly Automotive	1.05	1.07	3.1529	0.1146	12.8	12.4	13.9	13.1	12.2	12.0
Owens & Minor	0.90	0.83	3.1905	0.1160	13.1	15.1	13.0	10.2	11.6	12.0
Pactiv Corp.	1.10	1.10	3.1107	0.1130	21.7	19.7	17.7	28.8	19.9	15.0
Pall Corp.	1.05	1.00	2.9862	0.1086	16.4	14.4	12.4	12.3	12.0	17.5
Papa John's Int'l	0.80	0.82	3.2539	0.1182	23.0	28.0	26.7	32.0	39.3	20.0
Patterson Cos.	0.70	0.62	3.6579	0.1329	15.6	16.1	16.8	15.1	22.4	16.0
Paychex Inc.	0.90	0.84	2.8763	0.1045	27.2	25.2	26.8	28.1	28.4	39.5
Pediatrix Medical	0.85	0.81	3.5922	0.1305	14.7	17.1	16.1	14.4	16.4	14.5
Penn Virginia Res.	0.85	0.85	3.1981	0.1162	14.8	22.9	23.0	18.4	16.2	20.0
Penn. R.E.I.T.	0.90	0.79	3.2256	0.1194	2.8	4.8	5.1	5.2	2.3	6.5
Penske Auto	1.2	1.37	3.6494	0.1332	10.6	10.4	10.4	8.8	8.0	10.5
People's United Fin'l	0.85	0.87	3.0432	0.1106	8.4	7.8	9.7	8.3	3.4	6.8
Perkinelmer Inc.	1.15	1.19	3.3928	0.1233	4.1	6.7	8.4	9.1	8.8	12.5
Prologis	1.05	1.04	2.9172	0.1060	5.7	7.5	8.6	11.2	11.6	14.0
Public Storage	0.85	0.89	2.9534	0.1077	8.8	8.3	8.6	3.8	5.2	7.5
Qualcomm Inc.	1.35	1.35	3.8137	0.1387	12.1	16.9	19.3	18.4	20.9	19.0
Ralcorp Holdings	0.75	0.65	3.3710	0.1286	13.9	15.0	13.8	15.4	16.0	15.5
Realty Income Corp.	1	0.95	2.8758	0.1081	9.8	9.2	9.0	8.7	8.3	9.0
Regions Financial	1.05	1.05	2.8832	0.1075	14.8	8.1	9.4	8.5	7.0	9.5
Regis Corp.	1.10	1.13	2.9258	0.1065	18.4	16.3	13.6	11.4	10.4	10.0
ResMed Inc.	0.80	0.87	3.4958	0.1270	16.0	15.8	13.7	12.8	11.8	14.5
Reynolds American	0.80	0.83	3.3526	0.1218	4.3	10.2	15.0	18.1	18.1	17.0
Rockwell Automation	1.2	1.28	3.8282	0.1390	13.4	18.5	29.7	32.7	32.7	29.0
Rollins Inc.	0.85	0.89	3.2679	0.1187	25.8	26.1	29.6	27.3	27.7	25.0
Ross Stores	1.05	1.06	3.6041	0.1310	39.2	23.5	23.9	28.8	26.9	27.0
Royal Caribbean Cruises	1.10	1.10	3.6258	0.1316	6.8	9.9	11.9	10.4	8.9	9.5
Ruddick Corp.	0.55	0.65	3.0478	0.1107	12.1	11.8	11.3	10.8	11.0	12.0
Ryder System	1.15	1.16	3.4190	0.1242	16.1	12.7	14.9	14.3	13.5	12.0
Safeco Corp.	0.9	0.97	3.3776	0.123	8.1	14.5	16.8	18.8	18.9	10.5
Safeway Inc.	0.95	0.87	3.2117	0.1167	22.0	18.0	12.8	13.7	13.3	13.5
SAP AG	1.15	1.2	3.0915	0.1149	28.0	28.5	27.6	30.5	29.7	22.0
Schlumberger Ltd.	1.05	1.04	3.4489	0.1254	15.0	20.2	26.5	36.0	34.6	16.5
Scholastic Corp.	0.95	0.91	3.2422	7.6000	7.9	7.1	6.9	6.5	5.2	7.0

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Ohio American Water Company
Comparable Earnings Analysis
for a Proxy Group of Two Hundred Eighteen Non-Utility Companies Comparable to the
Proxy Group of Six AUS Utility Reports Water Companies (1)

Proxy Group of Two Hundred Eight Non-Utility Companies Comparable to the Proxy Group of Six AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Book Common Equity, Net Worth or Partners' Capital 2003	2004	2005	2006	2007		5-Year Projected
Schulman (A.)	1.05	1.04	3.5765	0.1309	4.2	6.6	6.9	5.1	5.3		7.5
Scotts Miracle-Gro	1.10	1.14	3.1878	0.1129	14.3	11.5	9.8	12.3	23.7		21.0
Sealed Air	0.95	0.90	2.8706	0.1045	21.4	16.2	16.4	17.1	16.5		12.5
Selective Ins. Group	0.85	0.87	2.8576	0.1035	7.7	12.8	14.0	13.0	11.8		12.5
Sensient Techn.	0.85	0.91	2.8469	0.1034	13.4	11.5	9.1	9.4	9.6		9.5
Silgan Holdings	1.10	1.10	3.3024	0.1200	48.5	40.1	34.8	29.8	26.3		16.5
Smithfield Foods	0.95	0.85	3.1536	0.1146	10.1	16.7	8.4	5.4	5.5	E	9.5
Snap-on Inc.	1	0.97	2.8992	0.1061	7.8	7.4	8.9	11.2	14.8		16.0
Sonic Automotive	1.35	1.21	3.4288	0.1246	12.8	12.4	12.3	10.9	12.2		13.5
Southwest Airlines	0.8	0.8	2.8145	0.1024	6.9	9.7	7.0	9.2	6.8		9.5
Sovereign Bancorp	1.15	1.22	3.2416	0.1178	12.9	11.1	11.6	7.8	7.2		12.0
SPX Corp.	1.15	1.16	3.5857	0.1296	12.8	1.0	9.7	9.8	13.6		19.0
Standex Int'l	1.10	1.11	3.5310	0.1287	11.1	13.5	14.4	10.5	7.5		14.5
Staples Inc.	1.10	1.09	3.0650	0.1114	15.1	17.2	18.0	18.9	17.4		17.0
Starbucks Corp.	0.95	0.91	3.1403	0.1141	12.9	15.6	23.7	28.1	29.4		26.0
Stericycle Inc.	0.95	0.76	3.4458	0.1252	15.3	19.4	17.4	17.4	14.1		15.0
STERIS Corp.	0.85	0.74	3.1239	0.1135	13.8	11.4	9.8	11.4	12.6		15.0
Stryker Corp.	0.9	0.82	2.8494	0.107	21.0	21.3	22.1	19.8	16.6		20.0
SUPERVALU INC.	0.95	0.87	3.3072	0.1202	13.1	13.3	12.3	8.5	10.0		10.0
Susquehanna Bancshs.	1.15	1.16	3.0668	0.1115	11.4	8.3	10.6	8.9	4.0		8.5
Sybase Inc.	0.85	0.86	3.3591	0.1184	10.5	8.7	12.2	11.3	13.1		12.0
Target Corp.	0.95	0.91	3.0074	0.1093	19.6	14.5	17.0	17.5	18.6		19.5
TCF Financial	1.05	1.03	2.8412	0.1032	23.4	28.6	28.8	23.7	24.3		17.5
Tech Data	1.00	0.88	3.1722	0.1153	6.4	7.8	8.7	4.2	7.1		8.0
Textron Corp.	1.05	1.04	3.0930	0.1124	19.2	16.3	24.7	21.6	19.4		19.0
Teekay Corp.	1.05	1.06	3.5462	0.1325	10.7	33.9	25.5	19.7	5.6		14.5
Tennant Co.	1.05	1.01	3.4639	0.1259	8.5	8.5	11.8	13.0	13.6		13.5
Texas Instruments	1.15	1.18	3.5118	0.1312	7.1	14.2	18.8	23.2	26.5		18.0
Transocean Inc.	1.1	1.04	3.5741	0.1316	4.3	4.8	11.8	17.3	18.4		12.0
TJX Companies	0.90	0.78	3.0078	0.1093	42.4	41.3	33.5	33.0	41.2		36.5
Total System Svcs.	1.05	1.05	3.4695	0.1287	19.2	17.4	19.2	20.5	30.7	E	17.5
United Stationers	1.05	1.01	3.1562	0.1178	12.3	13.4	12.7	12.9	16.8		15.0
UnitedHealth Group	0.70	0.53	3.0958	0.1125	35.8	24.1	18.8	20.0	23.2		20.0
Universal Corp.	0.85	0.72	2.8235	0.1002	16.3	12.8	6.8	10.6	11.8	E	12.5
Universal Health Sv. 'B'	0.75	0.56	3.2452	0.1179	17.7	13.2	13.2	10.9	10.8		11.5
Varian Inc.	1.05	1.07	3.4389	0.1258	11.7	11.7	9.3	9.1	10.3		12.0
Varian Medical Sys.	0.95	0.95	3.6894	0.1312	25.2	27.3	31.3	28.0	20.2		17.5
Viad Corp.	1.10	1.08	3.3135	0.1485	13.2	8.7	9.2	8.9	7.9		11.0
W.P. Carey & Co. LLC	0.90	0.68	2.8764	0.1045	10.5	11.2	7.1	13.9	14.1		17.0
Watson Pharmac.	0.95	0.88	3.4977	0.1271	10.0	9.1	7.3	6.7	8.2		10.0
WD-40 Co.	1.05	1.02	3.4235	0.1244	27.9	22.6	21.6	18.2	18.8		16.5
Weatherford Enterprises	1.10	1.13	3.4127	0.1240	10.4	11.3	11.4	11.3	9.5		11.5
Whirlpool Corp.	1.15	1.20	3.3092	0.1202	31.8	25.3	24.2	14.8	16.6		14.5
Wolverine Holding	1.1	1.08	2.8999	0.1092	11.7	10.7	10.8	13.0	10.7		11.5
World Wrestling Ent.	0.80	0.66	3.3626	0.1158	14.9	10.1	11.8	8.2	13.6		25.5
Wyeth	0.90	0.90	2.8756	0.1061	32.8	34.9	33.0	29.2	26.4		19.0
Xerox Corp.	1.05	1.07	2.8618	0.1038	11.5	11.0	12.9	14.5	13.2		14.5
Zebra Techn. 'A'	1.10	1.08	3.4615	0.1258	14.1	15.1	13.1	13.0	12.6		13.0
Zimmer Holdings	0.85	0.74	3.4067	0.1236	8.3	15.2	18.6	17.0	16.3		13.5
Average	1.00	0.98	3.2332	0.1529							
Median	1.00	0.97	3.2277	0.1189							
Average for the Proxy Group of Six AUS Utility Reports Water Companies	0.98	0.91	3.2485	(6) 0.1219							

See page 9 for notes.

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Ohio American Water Company
Comparable Earnings Analysis

E = Estimated

Notes: (1) The criteria for selection of the proxy group of one hundred ninety eight non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on book common equity, shareholders' equity, net worth, or partners' capital for each of the five years ended 2007 or projected 2011 - 2013 as reported in Value Line Investment Survey (Standard Edition). The proxy group of one hundred ninety eight non-utility companies was selected based upon the proxy group of six AUS Utility Reports water companies' unadjusted beta range of 0.54 – 1.28 and standard error of the regression range of 2.8187 – 3.6743. These ranges are based upon plus or minus three standard deviations of the unadjusted beta and standard error of the regression as detailed in Ms. Ahern's direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(2) Ending 2007.

(3) 2011 – 2013 / 2010 - 2012.

(4) The Student's T-statistic associated with these returns exceeds 1.96 at the 95% level of confidence. Therefore, they have been excluded, as outliers, to arrive at proper, i.e., conservative, historical and projected returns as fully explained in Ms. Ahern's testimony.

(5) The standard deviation of group of six AUS Utility Reports water companies' standard error of the regression is 0.1426. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1426 = \frac{3.2465}{\sqrt{518}} = \frac{3.2465}{22.7596}$$

(6) Mid-point of the median of the historical five year average and five year projected rate of return on book common equity, shareholder's equity, net worth, or partners' capital.

(7) Median of the historical five year average and five year projected rate of return on book common equity, shareholder's equity, net worth, or partners' capital excluding returns identified as outliers as outlined in Note (4) above.

(8) Mid-point of the median of the historical five year average and five year projected rate of return on book common equity, shareholder's equity, net worth, or partners' capital excluding returns identified as outliers as outlined in Note (4) above.

Source of Information: Value Line, Inc., June 16, 2008
Value Line Investment Survey (Standard Edition)

Ohio American Water Company
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		1 Market Capitalization on June 16, 2008 (1) (millions)	(times larger)	2 Applicable Decile of the NYSE/AMEX/ NASDAQ	3 Applicable Size Premium		4 Spread from Applicable Size Premium for (2)
1.	Ohio American Water Company						
	Based Upon the Staff's Group of Four Comparable Water Companies	$ 65.908		10 (4)	5.82%	(5)	
2.	Staff's Group of Four Comparable Water Companies	$ 970.502	14.7 x	8 (7)	2.20%	(6)	3.62%

Decile	Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Midpoint (millions)
1 - Largest	$20,386.369	$472,516.672	$246,452.521
2	9,274.049	20,234.526	14,754.288
3	5,025.807	9,206.713	7,116.260
4	3,426.586	5,012.577	4,219.582
5	2,413.583	3,422.743	2,918.163
6	1,633.668	2,411.794	2,022.731
7	1,129.192	1,633.320	1,381.256
8	725.267	1,128.765	927.016
9	363.549	723.258	543.404
10 - Smallest	1.922	363.479	182.701

See page 2 for notes.

Exhibit No. ___
Schedule PMA-13
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Ohio American Water Company
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE

Notes:

(1) From page 3 of this Schedule.

(2) Line No. 1 – Line No. 2 and Line No. 1 – Line No. 3 of Columns 3 and 4, respectively. For example, the 3.62% in Column 5, Line No. 2 is derived as follows 3.62%% = 5.82% - 2.20.

(3) From Ohio American Water Company's 2007 Annual Report to the Public Utilities Commission of Ohio.

(4) With an estimated market capitalization of $65.908 million (based upon the Staff's group of four comparable water companies) Ohio American Water Company falls in the 10th decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of $113.637 as shown in the table on the bottom half of page 3 of this Schedule.

(5) Size premium applicable to the 10th decile of the NYSE/AMEX/NASDAQ as shown on page 17 of Schedule PMA-1.

(6) With an estimated market capitalization of $970.502 million, the Staff's group of four comparable water companies falls in the in the 8th decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of $766.270 million as shown in the table on the bottom half of page 3 of this Schedule.

(7) Average size premium applicable to the 8th decile of the NYSE/AMEX/NASDAQ as gleaned shown on page 17 of Schedule PMA-1.

Source of Information: Ibbotson SBBI - 2008 Valuation Yearbook – Market Results for Stocks, Bonds, Bills and Inflation for 1926-2007, Morningstar, Inc., 2008, Chicago, IL

Ohio American Water Company
Market Capitalization of Ohio American Water Company and
the Staff's Group of Four Comparable Water Companies

Company	1 Common Stock Shares Outstanding at December 31, 2007 (millions)	2 Book Value per Share at December 31, 2007 (1)	3 Total Common Equity at December 31, 2007 (millions)	4 Closing Stock Market Price on June 16, 2008	5 Market-to-Book Ratio on June 16, 2008 (2)	6 Market Capitalization on June 16, 2008 (3) (millions)
Ohio American Water Company	NA	NA	$ 33.270 (4)	NA		
Based Upon the Staff's Group of Four Comparable Water Companies					198.1 % (5)	$ 65.908 (6)
Staff's Group of Four Comparable Water Companies						
American States Water Co.	17.231	$ 17.534	$ 302.129	36.120	206.0 %	$ 622.384
Aqua America, Inc.	133.400	7.319	976.298	16.850	230.2	2,247.790
California Water Services Group	20.666	18.664	385.709	36.690	196.6	758.236
Southwest Water Company	24.268	6.541	158.736	10.450	159.8	253.601
Average	48.891	$ 12.515	$ 455.718	$ 25.028	198.1 %	$ 970.502

NA = Not Available

Notes:
(1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) Company provided.
(5) The market-to-book ratio of Ohio American Water Company on June 16, 2008 is assumed to be equal to the average market-to-book ratio at June 16, 2008 of the Staff's group of four comparable water companies.
(6) Ohio American Water Company's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at June 16, 2008 of the Staff's group of four comparable water companies, 198.1%, and Ohio American Water Company's market capitalization on June 16, 2008 would therefore have been $65.908 million. ($65.908 = $33.270 * 198.1%).

Source of Information: 2007 Annual Forms 10K
EDGAR Online's I-Metrix Database, 6/12/08

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Schedule PMA-13
Page 3 of 3

Exhibit No. ___
Schedule PMA-14

Ohio American Water Company
PUCO Staff Report's CAPM Corrected to Reflect
the Correct Arithmetic Mean Historical Market Equity Risk Premium,
a Forecasted Risk-Free Rate and the Empirical Capital Asset Pricing Model (ECAPM)

Line No.		PUCO Staff Traditional CAPM	
	Historical Market Equity Risk		
1.	Premium	7.10	(1)
2.	Proxy Group Beta	1.025	(2)
	Proxy Group Specific Equity Risk		
3.	Premium	7.278	%
4.	Risk-Free Rate	4.67	(3)
5.	Traditional CAPM Result	11.948	%
		Empirical CAPM	
	Historical Market Equity Risk		
6.	Premium	7.10	% (1)
7.	Proxy Group Beta	1.025	(2)
	Proxy Group Specific Equity Risk		
8.	Premium	7.233	% (4)
9.	Risk-Free Rate	4.67	(2)
10.	Empirical CAPM Result	11.903	%
	Average of Traditional &		
11.	Empirical CAPM	11.926	%
12.	PUCO Staff's CAPM Result	10.941%	(6)

Notes:
(1) From note 1 on page 3 of Schedule PMA-11.
(2) From PUCO Staff Reprot, Case NO. 07-1112-WS-AIR, Schedule D-1.3, page 6.
(3) From note 2 on page 3 of Schedule PMA-11.
(4) Calculated using the formula shown in note 5 on page 29 of Schedule PMA-21 of this Exhibit.