COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

Application of Water Service Corporation	)	
of Kentucky for an Adjustment of Rates	)	Case No. 2005-00325
	)	

Attorney General Response 5d

Volume I

AQUA ILLINOIS, INC. – OAK RUN DIVISION

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

COMMON EQUITY COST RATE

DECEMBER 2004

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Appendix A to the Direct Testimony of Pauline M. Ahern

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I. INTRODUCTION

1

2 Q. Please state your name, occupation and business address.

3

4 A. My name is Pauline M. Ahern and I am a Vice President of AUS Consultants -
5   Utility Services. My business address is 155 Gaither Drive, P.O. Box 1050,
6   Moorestown, New Jersey 08057.

7

8 Q. Please summarize your educational background and professional experience.

9

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

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

20   I am also the Publisher of C. A. Turner Utility Reports, responsible for the
21   production, publication, distribution and marketing of these reports. C. A. Turner
22   Utility Reports provides financial data and related ratios covering approximately
23   150 public utility companies on a monthly, quarterly, and annual basis.
24   Coverage includes electric, combination gas and electric, gas distribution, gas
25   transmission, telephone, water and international utilities. The Reports are
26   distributed to about 100 subscribers, which include utilities, state utility
27   commissions, federal agencies, individuals, brokerage firms, attorneys and public

1   and collegiate libraries.

2   I also calculate and maintain the A.G.A. Index under contract with the

3   American Gas Association (A.G.A.). The A.G.A. Index is a market capitalization

4   weighted index of the common stocks of about 70 corporate members of the

5   A.G.A.

6   I have co-authored an article with Frank J. Hanley, President, AUS

7   Consultants - Utility Services entitled "Comparable Earnings: New Life for an Old

8   Precept" which was published in the American Gas Association's Financial

9   Quarterly Review, Summer 1994. I also assisted in the preparation of an article

10   authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification

11   Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of

12   Public Utilities Fortnightly.

13   I am a member of the Society of Utility and Regulatory Financial Analysts,

14   formerly the National Society of Rate of Return Analysts serving as

15   Secretary/Treasurer for 2004-2006. In 1992, I was awarded the professional

16   designation "Certified Rate of Return Analyst" (CRRA) by the National Society of

17   Rate of Return Analysts. This designation is based upon education, experience

18   and the successful completion of a comprehensive written examination.

19   I am an associate member of the National Association of Water

20   Companies, serving on its Finance Committee, and a member of the Energy

21   Association of Pennsylvania, formerly the Pennsylvania Gas Association.

22

23   Q.   What is the purpose of your testimony?

24

25   A.   The purpose is to provide testimony on behalf of Aqua IL – Oak Run Division

26   (Aqua IL - Oak Run or the Company) as to the appropriate common equity cost

27   rate which it should be afforded the opportunity to earn on the common equity

1   financed portion of its jurisdictional rate base.

2

3   Q.   What is your recommended common equity cost rate?

4

5   A.   Although the Company is basing its filing upon a requested common equity cost

6   rate of 10.75%, current capital market conditions indicate that a common equity

7   cost rate of 11.30% is applicable to a 51.39% average common equity ratio

8   estimated for the test year ending December 31, 2005. The capital structure and

9   the embedded cost rates of long- and short-term debt as well as preferred stock

10   are supported by Company Witness Jack Schreyer.

11

12   Q.   Have you prepared an exhibit which supports your overall recommended fair rate

13   of return?

14

15   A.   Yes, I have. It has been marked for identification as Aqua Exhibit No. 3.0 and

16   consists of Aqua Schedules 3.1 through 3.16. Hereinafter, references to

17   Schedules within this testimony will be from this Exhibit, unless otherwise noted.

18

19   II. SUMMARY

20   Q.   Please summarize your recommended common equity cost rate.

21

22   A.   The basis of the 11.30% common equity cost rate recommendation is

23   summarized on Aqua Schedule 3.1, page 2 and results in an overall cost of

24   capital of 9.283% when applied to Aqua IL - Oak Run's average capital structure

25   and related ratios and fixed capital cost rates estimated at December 31, 2005

26   which is summarized on Aqua Schedule 3.1, page 1.

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

3

Table 1

	Capital Structure Ratios	Cost Rate	Weighted Return
Long-Term Debt	47.90%	7.19%	3.446%
Short-Term Debt	0.38	3.07	0.012
Total Debt	48.28		3.458
Preferred Stock	0.32	5.48	0.018
Common Equity	51.39	11.30	5.807
Total	99.99%(1)		9.283%

(1) Does not add due to rounding.

Because Aqua IL - Oak Run's common stock is not publicly traded, market-based common equity cost rates cannot be determined directly for Aqua IL - Oak Run. Therefore, in arriving at my recommended common equity cost rate of 11.30%, 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 Aqua IL - Oak Run and suitable for cost of capital purposes. It is appropriate to look to a proxy group or groups of companies as similar in risk as possible whose common stocks are actively traded for insight into an appropriate common equity cost rate applicable to Aqua IL - Oak Run and then adjust the results upward to reflect Aqua IL - Oak Run's greater investment risk (vis-à-vis the proxy group(s)). 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

---

[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).

4

1   can be selected to be identical in risk to Aqua IL - Oak Run and therefore, the

2   proxy group(s)' results must be adjusted to reflect the greater relative investment

3   risk of Aqua IL - Oak Run as will be subsequently discussed in detail. Therefore,

4   I have evaluated the market data of two proxy groups of water companies and a

5   group of utility companies in arriving at my recommended common equity cost

6   rate. The bases of selection are described below.

7   As explained in more detail below, my analysis reflects current capital

8   market conditions and results from the application of four well-tested market-

9   based cost of common equity models, the Discounted Cash Flow (DCF)

10   approach, the Risk Premium Model (RPM), the Capital Asset Pricing Model

11   (CAPM), and the Comparable Earnings Model (CEM).

12   The results derived from each are as follows:

Table 2

	Proxy Group of Six C.A. Turner Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Discounted Cash Flow Model	10.6%	11.0%	10.8%
Risk Premium Model	10.6	10.8	10.9
Capital Asset Pricing Model	10.0	10.3	10.3
Comparable Earnings Model	14.2	14.0	13.8
Indicated Common Equity Cost Rate Before Investment Risk Adjustment	10.80%	11.00%	11.00%
Investment Risk Adjustment	0.30	0.30	0.50
Common Equity Cost Rate After Adjustment for Investment Risk	11.10%	11.10%	11.50%
Recommended Common Equity Cost Rate		11.30%	

37   After reviewing the cost rates based upon the four models, I conclude that

38   a common equity cost rate before an investment risk adjustment of 10.80% is

39   indicated based upon the application of all four models to the proxy group of six

40   C.A. Turner water companies, 11.00% for the proxy group of three Value Line

1	(Standard Edition) water companies, and 11.00% for the proxy group of fifteen
2	utilities selected on the basis of least relative distance. After applying investment
3	risk adjustments due to Aqua IL - Oak Run's small size and greater credit risk[3]
4	vis-a-vis the two proxy groups as will be discussed in detail subsequently, the
5	indicated common equity cost rate for each proxy group is 11.10%, 11.30%, and
6	11.50%, respectively. Based upon these cost rates, I recommend a common
7	equity cost rate of 11.30% applicable to the Company's proposed common equity
8	ratio of 51.39%.
9	
10	III. GENERAL PRINCIPLES
11	Q. What general principles have you considered in arriving at your recommended
12	common equity cost rate of 11.30%.
13	
14	A. In unregulated industries, marketplace competition is the principal determinant of
15	the price of a product or service. In the case of regulated public utilities,
16	regulation must act as a substitute for marketplace competition. Consequently,
17	marketplace data must be relied upon to assure that the utility can fulfill its
18	obligations to the public and provide adequate service at all times. This requires
19	a level of earnings sufficient to maintain the integrity of presently invested capital
20	and permit the attraction of needed new capital at a reasonable cost in
21	competition with other comparable-risk firms. These standards for a fair rate of
22	return have been established by the U.S. Supreme Court in the Hope and
23	Bluefield cases cited previously. Consequently, in my determination of a fair rate
24	of return, I have also evaluated data gathered from the marketplace for utilities as
25	similar in risk as possible to Aqua IL - Oak Run.
26	

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[3] Due to Aqua IL NAIC2 rating, which is equivalent to a Moody's Baa bond rating and to a Standard & Poor's (S&P) bond rating of BBB.

1

2 Q. Please define business risk and explain why it is important to the determination

3   of a fair rate of return?

4

5 A. Business risk incorporates all of the risks of a firm other than financial risk, which

6   will be discussed subsequently. Examples of business risk include the quality of

7   management and the regulatory environment which have a direct bearing on

8   earnings.

9   Business risk is important to the determination of a fair rate of return

10   because the greater the level or risk, the greater the rate of return investors

11   demand, consistent with the basic financial precept of risk and return.

12

13 Q. Please discuss the business risks facing the water industry in general.

14

15 A. The water utility industry faces significant risks related to replacing aging

16   transmission and distribution systems. Value Line Investment Survey[4] observes:

17
18   Infrastructure costs continue to climb higher as water utility
19   companies, with little help from strapped government branches, are
20   forced to deal with maintaining and upgrading existing facilities.
21   Costs are becoming an even greater concern as time passes
22   because a number of the functioning systems currently in place are
23   over 100 years old and in need of significant repair. That said, we
24   believe that it will take hundreds of billions of dollars to renovate
25   existing pipelines over the next few decades. To make matters
26   worse, the costs of staying in compliance with regulatory laws are
27   growing even more difficult, due to fears of terrorist activities
28   against the country's drinking supplies. Although the Safe Drinking
29   Water Act (SDWA) of 1974 remains the authority for the safety and
30   purity of drinking water, recent amendments are making compliance
31   even more demanding. In 1996, an amendment authorized the

---

[4] Value Line Investment Survey, October 29, 2004.

1 Environmental Protection Agency (EPA) to step up local compliance
2 levels. And, governing law-makers now insist that the EPA work
3 with local and state governments to test for impurities in drinking
4 water and to regulate the levels of contaminants that are
5 acceptable.

6 In addition, because the water industry is much more capital-intensive than the

7 electric, natural gas or telephone industries, the investment required to produce a

8 dollar of revenue is greater. And, because investor-owned water utilities typically

9 do not receive federal funds for infrastructure replacement, the challenge to

10 investor-owned water utilities is exacerbated and their access to financing is

11 restricted, thus increasing risk.

12 The water utility industry also experiences lower relative depreciation

13 rates. Lower depreciation rates, as one of the principal sources of internal cash

14 flows for all utilities, mean that water utility depreciation as a source of internally-

15 generated cash is far less than for electric, natural gas or telephone utilities.

16 Water utilities' assets have longer lives and, hence, longer capital recovery

17 periods. As such, water utilities face greater risk due to inflation which results in

18 a higher replacement cost per dollar of net plant than for other types of utilities.

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

20
21 Environmental regulations, which can be particularly stringent for
22 water utilities, impact credit quality. Mandatory compliance with
23 environmental legislation is often quite capital intensive. This is
24 particularly so in the areas of wastewater discharge and drinking
25 water quality. In most jurisdictions observed by Standard & Poor's,
26 pressures from environmental standards is likely to increase. High
27 compliance costs can impact a water utility's creditworthiness if their
28 financing is up-front and their recovery is over a long period,
29 potentially putting stress on the financial profile in the short term.
30
31 A key rating consideration is the extent of the link between a water
32 utility's legislated environmental standards and its rate-setting
33 mechanism. Stringent environmental rules requiring expensive

---

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

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

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

In view of the foregoing, it is clear that their high degree of capital intensity

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[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.

1   coupled with the need for substantial infrastructure capital spending and

2   increased anti-terrorism security spending, require regulatory support in the form

3   of adequate and timely rate relief so water utilities will be able to successfully

4   meet the challenges they face.

5

6   Q.   Does Aqua IL - Oak Run face additional extraordinary business risk?

7

8

9   A.   Yes. Aqua IL - Oak Run's smaller size, i.e., total capital of $112.954 million at

10   December 31, 2003 (see page 3 of Aqua Schedule 3.1) vis-à-vis average total

11   capital of $502.690 million in 2003 for the proxy group of six C.A. Turner water

12   companies (see page 3 of Aqua Schedule 3.1), $865.130 million for the proxy

13   group of three Value Line (Std. Ed.) water companies, and $6.719 billion for the

14   proxy group of fifteen utilities selected on the basis of least relative distance (see

15   page 3 of Aqua Schedule 3.1) indicates greater relative business risk because all

16   else equal, size has a bearing on risk.

17

18   Q.   Please explain why size has a bearing on business risk.

19

20   A.   Smaller companies are less capable of coping with significant events which affect

21   sales, revenues and earnings.

22   The loss of revenues from a few larger customers, for example, would

23   have a greater effect on a small company than on a much larger company with a

24   larger customer base. Because Aqua IL - Oak Run is the regulated utility to

25   whose rate base the Illinois Commerce Commission's (ICC or the Commission)

26   ultimately allowed overall cost of capital and fair rate of return will be applied, the

10

1 relevant risk reflected in the cost of capital must be that of Aqua IL - Oak Run,

2 including the impact of its small size on common equity cost rate. Size is an

3 important factor which affects common equity cost rate, and Aqua IL - Oak Run,

4 as represented by Aqua IL, is significantly smaller than the average company in

5 the proxy group based upon total investor-provided capital as shown below:

Table 3

	2003 Total Capital ($ millions)	Times Greater than The Company	Market Capitalization(1) ($ Millions)	Times Greater than the Company
Proxy Group of Six C.A. Turner Water Companies	$502.690	4.5x	$605.425	4.4x
Proxy Group of Three Value Line (Std. Ed.) Water Companies	865.130	7.7x	1,054.633	8.0x
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	6,719.260	59.5x	5,517.271	49.9x
Aqua IL	112.954		136.749 (2) 132.125 (3) 110.465 (4)	

(1) From Aqua Schedule 3.1, page 3.
(2) Based upon the average market-to-book ratio of the proxy group of six C.A. Turner water companies.
(3) Based upon the average market-to-book ratio of the proxy group of three Value Line (Std. Ed.) water companies.
(4) Based upon the average market-to-book ratio of the proxy group of fifteen utilities selected on the basis of least relative distance.

35 I have also done a study of the market capitalization of the proxy groups of

36 six C.A. Turner water companies, three Value Line (Std. Ed.) water companies,

37 and fifteen utilities. The results are shown on page 5 of Aqua Schedule 3.1

38 which summarizes the market capitalizations as of December 7, 2004.

39 Aqua IL's common stock is not publicly traded. Consequently, I have

40 assumed that if it were publicly traded, its consolidated common shares would be

41 selling at the same market-to-book ratio as the average market-to-book ratio for

42 the proxy group, or 233.6% (six water companies), 225.7% (three water

1　companies), and 188.7% (fifteen utilities) at December 7, 2004. Hence, Aqua IL's

2　market capitalization is estimated at $136.749 million, $132.125, and $110.465

3　based upon the average market-to-book ratios of each proxy group, respectively,

4　as of December 7, 2004. In contrast, the market capitalization of the average

5　C.A. Turner water company was $605.425 million on December 7, 2004, or 4.4

6　times larger than Aqua IL's estimated market capitalization. In addition, the

7　market capitalization of the average Value Line (Std. Ed.) water company was

8　$1.055 billion and of the average utility company selected on the basis of least

9　relative distance, $5.517 billion at December 7, 2004, or 8.0 and 49.9 times

10　larger than Aqua IL, respectively. It is conventional wisdom, supported by actual

11　returns over time, and a general premise contained in basic finance textbooks,

12　that smaller companies tend to be more risky causing investors to expect greater

13　returns as compensation for that risk.

14

15　Q.　Does the financial literature affirm a relationship between size and common

16　　　equity cost rate?

17

18　A.　Yes. Brigham[7] states"

19
20　　　A number of researchers have observed that portfolios of small-firms
21　　　have earned consistently higher average returns than those of large-
22　　　firms stocks; this is called "small-firm effect." On the surface, it would
23　　　seem to be advantageous to the small firms to provide average returns in
24　　　a stock market that are higher than those of larger firms. In reality, it is
25　　　bad news for the small firm; what *the small-firm effect means is that the*
26　　　*capital market demands higher returns on stocks of small firms than on*
27　　　*otherwise similar stocks of the large firms.* (italics added)

28

29

---

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

V. FINANCIAL RISK

1

2   Q.   Please define financial risk and explain why it is important to the determination of

3   a fair rate of return?

4

5   A.   Financial risk is the additional risk created by the introduction of senior capital,

6   i.e., debt and preferred stock, into the capital structure. In other words, the

7   higher the proportion of senior capital in the capital structure, the higher the

8   financial risk.

9   Utilities formerly were considered to have much less business risk vis-a-

10   vis unregulated enterprises, and, as a result, a larger percentage of debt capital

11   was acceptable to investors. In June 2004, S&P revised its utility financial

12   guidelines and assigned new business profile scores to U.S. utility and power

13   companies to better reflect the relative business risk among companies in the

14   sector. S&P's revised financial guidelines to the bond rating process for utilities

15   can be found in Aqua Schedule 3.2, page 14, while pages 1 through 9 describe

16   the utility bond rating process. As shown on page 14, S&P's revised financial

17   guidelines for utilities establishes financial target ratios for ten levels of business

18   position/profile with "1" being considered lowest risk and "10" being highest risk.

19   As shown on Aqua Schedule 3.14, page 2, the average S&P bond rating

20   (issue credit rating) and business profile of the six C.A. Turner water companies

21   is A+ and "2.6", which rounds to "3", A+/A and "2.7" (rounded to "3"), for the three

22   Value Line (Std. Ed.) water companies, and A and "3.5" for the fifteen utilities

23   selected on the basis of least relative distance.

24

25   Q.   How can one measure the combined business and financial risks, i.e., investment

26   risk of an enterprise?

27

1 A.   Similar bond ratings/issue credit ratings reflect similar combined business and

2   financial risks, i.e., total risk. Although the specific business or financial risks

3   may differ between companies, the same bond rating indicates that the combined

4   risks are similar as the bond rating process reflects acknowledgment of all

5   diversifiable business and financial risks. For example, S&P expressly states

6   that the bond rating process encompasses a qualitative analysis of business and

7   financial risks (see pages 3 through 9 of Aqua Schedule 3.2). There is no perfect

8   single proxy, such as bond rating or common stock ranking, by which one can

9   differentiate common equity risk between companies. However, the bond rating

10   provides a useful means to compare/differentiate common equity risk between

11   companies because it is the result of a thorough and comprehensive analysis of

12   all diversifiable business and financial risks, i.e., investment risk.

13   Aqua IL's debt has been assigned the bond / issue credit rating equivalent

14   of an NAIC (National Association of Insurance Commissioners) Rating of 2 by

15   NatCity Investments, Inc., the investment banker which privately places Aqua IL's

16   debt with insurance companies. According to the NAIC[8]:

17   **NAIC 2** is assigned to obligations of high quality. Credit risk is low but
18   may increase in the intermediate future and the issuer's credit profile
19   is reasonably stable. This means that for the present, the obligation's
20   protective elements suggest a high likelihood that interest, principal or
21   both will be paid in accordance with the contractual agreement, but
22   there are suggestions that an adverse change in circumstances or
23   economic, financial or business conditions will affect the degree of
24   protection and lead to a weakened capacity to pay. An NAIC 2
25   obligation should be eligible for relatively favorable treatment under
26   the NAIC Financial Conditions Framework.

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[8] National Association of Insurance Commissioners, _Purposes and Procedures Manual of the NAIC Securities Valuation Office_, December 31, 2003 Update, Part Three: Definitions of NAIC Designation Categories, Valuation Indicators and Administrative Symbols, p. 1.

1   The NAIC also compares its ratings to those of "Nationally Recognized

2   Statistical Rating Organizations", such as Moody's and S&P. Thus, according to

3   the NAIC, an NAIC 2 rating is equivalent to Moody's Baa1, Baa2, and Baa3 and

4   S&P's BBB+, BBB, and BBB- bond ratings.[9] Hence, Aqua IL's credit risk is

5   greater than that of either proxy group whose average Moody's and S&P bond /

6   issue credit ratings are A2 and A+, for the six water companies, A2 and A+/A, for

7   the three water companies, respectively, and A3 and A, for the fifteen utilities,

8   respectively.

9   VI. AQUA IL – OAK RUN DIVISION

10   Q.   Have you reviewed financial data for Aqua IL - Oak Run?

11

12   A.   Yes. Aqua IL - Oak Run provides water service to approximately 2,600 retail

13   customers in Knox County. Oak Run is a division of Aqua IL which is a

14   subsidiary of Consumers Water Company. Thus, the Company's common stock

15   is not publicly traded.

16   VII. PROXY GROUPS

17   Q.   Please explain how you chose the proxy group of six C.A. Turner water

18   companies.

19

20   A.   The basis of selection for the proxy group of six C.A. Turner water companies

21   were those companies that meet the following criteria: 1) they are included in the

22   Water Company Group of C.A. Turner Public Utility Reports (December 2004); 2)

23   they have Value Line or Thomson FN/First Call Consensus; and 3) they have

24   more than 70% of their 2003 operating revenues derived from water operations.

[9]   Id., Appendix A, Section 4, "List of Nationally Recognized Statistical Rating Organizations and the Rating Equivalent of Their Systems to NAIC Designations", pp. A-13 and A-14.

1   Six companies met all of these criteria.

2

3   Q.   Please describe Aqua Schedule 3.4.

4

5   A.   Aqua Schedule 3.4 contains comparative capitalization and financial statistics for

6   the six C.A. Turner water companies for the years 1999 through 2003.   The

7   schedule consists of three pages. Page 1 contains a summary of the comparative

8   data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as

9   the basis of selection and names of the individual companies in the proxy group.

10   Page 3 contains the capital structure ratios based upon total capital (including

11   short-term debt) by company and on average for the years 1999-2003.

12   During the five-year period ending 2003, the achieved average earnings rate

13   on book common equity for this group ranged between 8.97% in 2003, and 10.82%

14   in 1999, and averaged 10.16%. The five-year average market/book ratio ending

15   2003 was 212.98%. The five-year ending 2003 average common equity ratio

16   based upon total investor-provided capital was 43.09%, while the five-year average

17   dividend payout ratio was 80.17%.

18   Coverage of interest charges, excluding all AFUDC from funds from

19   operations for the years 1999-2003 ranged between 3.10 and 3.38 times and

20   averaged 3.26 times during the five-year period, while funds from operations

21   relative to total debt ranged from 13.57% in 2003 to 15.57% in 1999 and averaged

22   14.36% for the five-year period.

23

24   Q.   Please explain how you chose the proxy group of three Value Line water

25   companies.

26

27   A.   The basis of selection for the proxy group of three Value Line (Standard Edison)

1	water companies was to include those companies which are part of Value Line's
2	(Standard Edition) Water Utility Industry Group.
3	
4	Q. Please describe Aqua Schedule 3.5.
5	
6	A. Schedule 3.5 contains comparative capitalization and financial statistics for the
7	three Value Line (Standard Edition) water companies for the years 1999 through
8	2003. The schedule consists of three pages. Page 1 contains a summary of the
9	comparative data for the years 1999-2003. Page 2 contains notes relevant to page
10	1, as well as the basis of selection and names of the individual companies in the
11	proxy group. Page 3 contains the capital structure ratios based upon total capital
12	(including short-term debt) by company and on average for the years 1999-2003.
13	During the five-year period ending 2003, the achieved average earnings rate
14	on book common equity for this group ranged between 8.86% in 2003, and 11.28%
15	in 1999, and averaged 10.60%. The five-year average market/book ratio ending
16	2003 was 219.34%. The five-year ending 2003 average common equity ratio
17	based upon total investor-provided capital was 43.01%, while the five-year average
18	dividend payout ratio was 75.16%.
19	Coverage of interest charges, excluding all AFUDC from funds from
20	operations for the years 1999-2003 ranged between 3.40 and 3.63 times and
21	averaged 3.54 times during the five-year period, while funds from operations
22	relative to total debt ranged from 14.60% to 18.17% and averaged 15.89% during
23	the five-year period.
24	
25	Q. Please explain how you chose the proxy group of fifteen utilities selected on the
26	basis of least relative distance.
27	

1   A. Investment risk is the sum of business and financial risks. I chose to examine eight

2   operating / financial ratios that I believe provide comprehensive insight into the

3   business and financial risks of utilities, including water companies. I based my

4   analyses upon the average results for the years 2001, 2002, and 2003. As the

5   benchmark I utilized, for Aqua IL, the three-year average for each of eight ratios

6   which are described as follows: 1) pretax interest coverage; 2) common equity ratio;

7   3) fixed asset turnover; 4) the percentage of allowance for funds used during

8   construction (AFUDC) to net income; 5) cash flow as a percentage of permanent

9   capitalization; 6) the ratio of net cash flow to expenditures; 7) interest coverage

10   based on funds flow; and 8) operating earnings stability.

11   I employed Aqua IL's ratios as described above in order to select

12   companies comparable in risk to Aqua IL. I began with all electric, gas,

13   combination electric and gas and water utilities for which data are available for the

14   entire time period in the Standard & Poor's Compustat Services, Inc., PC

15   Plus/Research Insight Database. I calculated the three-year average ratios for 99

16   electric, gas, combination electric and gas and water utilities and rank-ordered them

17   in terms of the least relative distance to Aqua IL. The sum of distance was obtained

18   by calculating the squared distances between the eight operating / financial ratios

19   of each firm and those of the Company, summing those squared distances, and

20   then by calculating the square root of the summation. Fifteen utilities were selected

21   as having the lowest sum of distance from Aqua IL. Consequently, these

22   companies, based upon the eight operating / financial ratios, are the closest in risk

23   to Aqua IL. Their financial profile is summarized in Aqua Schedule 3.6.

24

25   Q. Please describe Aqua Schedule 3.6.

26

27   A. Aqua Schedule 3.6 contains comparative capitalization and financial statistics for

1   the fifteen utilities selected on the basis of least relative distance for the years 1999

2   through 2003. The schedule consists of six pages. Page 1 contains a summary of

3   the comparative data for the years 1999-2003. Page 2 contains notes relevant to

4   page 1, as well as the basis of selection of the individual companies in the proxy

5   group. Pages 3 and 4 contain the capital structure ratios based upon total capital

6   (including short-term debt) by company and on average for the proxy group for the

7   years 1999-2003. Page 5 contains the eight ratios for Aqua IL and the fifteen

8   utilities which have the lowest sum of distance and thus are closest in risk to Aqua

9   IL. Page 6 contains notes relevant to page 5.

10   During the five-year period ending 2003, the achieved average earnings

11   rate on book common equity for this group ranged between 10.02% in 2003 and

12   11.75% in 1999, and averaged 11.08%. The five-year average market / book ratio

13   ending 2003 was 179.08%. The five-year average ending 2003 common equity

14   ratio based on total investor-provided capital was 42.11%, while the five-year

15   average dividend payout ratio was 71.45%.

16   Coverage of interest charges, excluding all AFUDC from funds from

17   operations for the years 1999-2003 ranged between 3.69 and 4.29 times and

18   averaged 3.99 times during the five-year period, while funds from operations

19   relative to total debt ranged from 16.03% to 20.85% and averaged 18.65% during

20   the five-year period.

21

22   VIII. COMMON EQUITY COST RATE MODELS

23   A. The Efficient Market Hypothesis (EMH)

24   Q. Are the cost of common equity models you use market-based models, and hence

25   based upon the EMH?

26

27   A. Yes. The DCF model is market-based in that market prices are utilized in

1 developing the dividend yield component of the model. The RPM is market-based

2 in that the bond ratings and expected bond yields used in the application of the

3 RPM reflect the market's assessment of risk. In addition, the use of betas to

4 determine the equity risk premium also reflects the market's assessment of risk as

5 betas are derived from regression analyses of market prices. The CAPM is

6 market-based for many of the same reasons that the RPM is market-based i.e., the

7 use of expected bond (Treasury bond) yields and betas. The CEM is market-

8 based in that the process of selecting the comparable risk non-utility companies is

9 based upon statistics which result from regression analyses of market prices.

10 Therefore, all the cost of common equity models I utilize are market-based models,

11 and hence based upon the EMH.

12

13 Q. Please describe the conceptual basis of the EMH.

14

15 A. The Efficient Market Hypothesis (EMH), which is the foundation of modern

16 investment theory, was pioneered by Eugene F. Fama[10] in 1970. An efficient

17 market is one in which security prices reflect all relevant information all the time.

18 This implies that prices adjust instantaneously to new information, thus reflecting

19 the intrinsic fundamental economic value of a security.[11]

20 The essential components of the EMH are:

21
22 A. Investors are rational and invest in assets providing the
23 highest expected return given a particular level of risk.
24
25 B. Current market prices reflect all publicly available
26 information.
27
28 C. Returns are independent i.e., today's market returns are

---

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

[11] Morin, Roger A., Regulatory Finance - Utilities' Cost of Capital. Public Utility Reports, Inc., Arlington, VA, 1994, p. 136.

1	unrelated to yesterday's returns.
2	
3	D. Capital markets follow a random walk i.e., the probability
4	distribution of expected returns approximates a normal
5	distribution.
6	
7	Brealey and Myers state:[12]
8	
9	When economists say that the security market is 'efficient', they are
10	not talking about whether the filing is up to date or whether desktops
11	are tidy. They mean that information is widely and cheaply available
12	to investors and that all relevant and ascertainable information is
13	already reflected in security prices.
14	
15	The three forms of the EMH are:
16	
17	A. The "weak" form which asserts that all past market prices and data are
18	fully reflected in securities prices i.e., technical analysis cannot enable an
19	investor to "outperform the market".
20	
21	B. The "semistrong" form which asserts that all publicly available information
22	is fully reflected in securities prices i.e., fundamental analysis cannot
23	enable an investor to "outperform the market".
24	
25	C. The "strong" form which asserts that all information, both public and
26	private, is fully reflected in securities prices i.e., even insider information
27	cannot enable an investor to "outperform the market".
28	
29	The "semistrong" form of the EMH is generally held to be true because the
30	use of insider information often enables investors to "outperform the market" and
31	earn excessive returns. The generally-accepted "semistrong" form of the EMH
32	means that all perceived risks are taken into account by investors in the prices the
33	pay for securities. Investors are aware of all publicly-available information,
34	including bond ratings, discussions about companies by bond rating agencies and
35	investment analysts as well as the various cost of common equity methodologies
36	(models) discussed in the financial literature. In an attempt to emulate investor

---

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

21

1   behavior, this means that no single common equity cost rate model should be

2   relied upon in determining a cost rate of common equity and that the results of

3   multiple cost of common equity models should be taken into account.

4

5   Q.   Is there support in the academic literature for the need to rely upon more than one

6   cost of common equity model in arriving at a recommended common equity cost

7   rate?

8

9   A.   Yes. For example, Phillips[13] states:

10

11   Since regulation establishes a level of authorized earnings which, in
12   turn, implicitly influences dividends per share, *estimation of the growth*
13   *rate from such data is an inherently circular process. For these*
14   *reasons, the DCF model "suggests a degree of precision which is in*
15   *fact not present" and leaves "wide room for controversy and argument*
16   *about the level of k".* (italics added) (p. 396)
17
18   * * *
19
20   Despite the difficulty of measuring relative risk, the comparable
21   earnings standard is no harder to apply than is the market-determined
22   standard.   The DCF method, to illustrate, requires a *subjective*
23   determination of the growth rate the market is contemplating.
24   Moreover, as Leventhal has argued: *'Unless the utility is permitted to*
25   *earn a return comparable to that available elsewhere on similar risk, it*
26   *will not be able in the long run to attract capital.'* (italics added) (p.
27   398)
28
29   Also, Morin[14] states:
30
31   Sole reliance on the DCF model ignores the capital market evidence
32   and financial theory formalized in the CAPM and other risk premium
33   methods. The DCF model is one of many tools to be employed in
34   conjunction with other methods to estimate the cost of equity. *It is not*

---

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

[14] Roger A. Morin, Regulatory Finance-Utilities' Cost of Capital, 1994, Public Utilities Reports, Inc., Arlington, VA, pp. 231-232, 239-240.

a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings does not make it superior to other methods. (italics added) (Morin, pp. 231-232)

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 failure of the traditional infinite growth DCF model to account for changes in relative market valuation, discussed above, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. It follows that more than one methodology should be employed in arriving at a judgment on the cost of equity and that these methodologies should be applied across a series of comparable risk companies. ...Financial literature supports the use of multiple methods.* (italics added) (Morin, p. 239)

Professor Eugene Brigham, a widely respected scholar and finance academician asserted:

In practical work, it is often best to use all three methods -CAPM, bond yield plus risk premium, and DCF - and then apply judgement when the methods produce different results. People experienced in estimating capital costs recognize that both careful analysis and very fine judgements are required. It would be nice to pretend that these judgements are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. (italics added) (Morin, pp. 239-240)

Another prominent finance scholar, Professor Stewart Myers, in his best-selling corporate finance textbook stated:

The constant growth formula and the capital asset pricing model are two different ways of getting a handle on the same problem. (italics added) (Morin, p. 240)

In an earlier article, Professor Myers explained the point more fully:

Use more than one model when you can. Because estimating 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. (Morin, p. 240)

1   In view of the foregoing, it is clear that investors are aware of all of the models

2   available for use in determining a common equity cost rate. The EMH requires the

3   assumption that, collectively, investors use them all.

4

5   B. Discounted Cash Flow Model (DCF)

6   1. Theoretical Basis

7   Q.   What is the theoretical basis of the DCF model?

8

9   A.   The theory of the DCF model is that the present value of an expected future stream

10   of net cash flows during the investment holding period can be determined by

11   discounting the cash flows at the cost of capital, or the capitalization rate. DCF

12   theory suggests that an investor buys a stock for an expected total return rate

13   which is expected to be derived from cash flows received in the form of dividends

14   plus appreciation in market price (the expected growth rate). Thus, the dividend

15   yield on market price plus a growth rate equals the capitalization rate, i.e., the total

16   return rate expected by investors.

17

18   Q.   Please comment on the applicability of the DCF model in establishing a cost of

19   common equity for Aqua IL – Oak Run.

20

21   A.   The extent to which the DCF is relied upon should depend upon the extent to which

22   the cost rate results differ from those resulting from the use of other cost of

23   common equity models because the DCF model has a tendency to mis-specify

24   investors' required return rate when the market value of common stock differs

25   significantly from its book value. Market values and book values of common stocks

26   are seldom at unity. The market-based DCF model will result in a total annual

27   dollar return on book common equity equal to the total annual dollar return

                                    24

1   expected by investors only when market and book values are equal, a rare and

2   unlikely situation. In recent years, the market values of utilities' common stocks

3   have been well in excess of their book values as shown on page 1 of Aqua

4   Schedule 3.4 ranging between 191.35% and 221.41% for the proxy group of six

5   C.A. Turner water companies, between 206.93% and 225.26% for the proxy group

6   of three Value Line (Std. Ed.) water companies as shown on page 1 of Aqua

7   Schedule 3.5, and between 170.39% and 187.01% for the proxy group of fifteen

8   utilities selected on the basis of least relative distance as shown on page 1 of Aqua

9   Schedule 3.6.

10   Mathematically, the DCF model understates/overstates investors' required

11   return rate when market value exceeds/is less than book value because, in many

12   instances, market prices reflect investors' assessments of long-range market price

13   growth potentials (consistent with the infinite investment horizon implicit in the

14   standard regulatory version of the DCF model) not fully reflected in analysts'

15   shorter range forecasts of future growth for earnings per share (EPS) and

16   dividends per share (DPS) accounting proxies. This indicates the need to better

17   match market prices with investors' longer range growth expectations embedded in

18   those prices. However, the understatement/overstatement of investors' required

19   return rate associated with the application of the market price-based DCF model to

20   the book value of common equity clearly illustrates why reliance upon a single

21   common equity cost rate model should be avoided.

22
23   2. Applicability of a Market-Based Common Equity
24   Cost Rate to a Book Value Rate Base
25

26   Q.   Is it reasonable to expect the market values of utilities' common stocks to

27   continue to sell well above their book values?

28

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.

The significant recent increases in 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). For example, David Wessel in the Wall Street Journal states:[15]

> So if the fundamentals aren't driving stock prices, then what is? It's that hard-to-quantify investor appetite for buying stocks. The market has been strong because lots of people want to hold stocks. It will continue to be strong as long as they continue to be willing to pay more for stocks than they used to.
>
> * * *
>
> Psychoanalyzing investors is a favorite pastime, from Wall Street saloons to American livingrooms. Perhaps baby boomers, intent on saving for retirement and their children's college tuition, see stocks as the only smart alternative. Perhaps Generation-Xers fear Social Security will vanish before they retire, and are bulking up on stocks. Perhaps mutual-fund marketing has diverted billions of dollars that once would have ended up in low-interest bank accounts. Perhaps the internet age has dispelled the mystique of the stock market; everyone can do it.

---

[15] "If This is a Bubble, It Sure is Hard to Pop," Wall Street Journal, March 30, 1999, pp. A1 and A6.

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[16] 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[17] 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 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

---

[16]   Id., at p. 395.

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

1   (consistent with the presumed infinite investment horizon of the standard DCF

2   model), while the short range forecasts of growth in accounting proxies, i.e., EPS

3   and DPS, do not reflect the full measure of growth (market price appreciation)

4   expected in per share market value.

5

6   Q.   Please explain why a DCF-derived common equity cost rate mis-specifies

7   investors' expected common equity cost rate when the market/book ratio is

8   greater or less than unity (100%).

9

10 A.   Under the DCF model, the rate of return investors require is related to the price

11   paid for a stock i.e., market price is the basis upon which they formulate the

12   required rate of return.   A regulated utility is limited to earning on its net book

13   value (depreciated original cost) rate base.   As discussed previously, market

14   values differ from book values for many reasons unrelated to earnings.   Thus,

15   when market values differ significantly from book values, a market-based DCF

16   cost rate applied to the book value of common equity will not accurately reflect

17   investors' expected common equity cost rate.   It will either overstate or

18   understate investors' expected common equity cost rate (without regard to any

19   adjustment for flotation costs which may, at times, be appropriate on an ad hoc

20   basis) depending upon whether market value is less than or greater than book

21   value.

22   Aqua Schedule 3.7 demonstrates how a market-based DCF cost rate

23   applied to a book value which is either below or above market value will either

24   understate or overstate investors' expectations because these expectations are

25   based on a required return on market value.   As shown, there is no realistic

26   opportunity to earn the market-based rate of return on book value.   Note that in

28

1   Column 1, investors expect a 10.00% return on a market price of $24.00.

2   Moreover, as shown in Column 2, when the 10.00% return rate on market value

3   is applied to book value which is approximately 55.5% of market value, the total

4   annual return opportunity is just $1.333 on book value. With an annual dividend

5   of $0.960, there is an opportunity for growth of $0.373 which translates to just

6   1.55% in contrast to the 6.00% growth in market price expected by investors.

7   There is no way to possibly achieve the expected growth of $1.440 or 6.00%

8   absent a huge cut in the annual dividend, an unreasonable expectation which

9   would result in an extremely adverse reaction by investors because it would be a

10   sign of extreme financial distress.

11   Conversely, in Column 3, where the market-to-book ratio is 80%, when

12   the 10.00% return rate on market value is applied to a book value which is

13   approximately 25.0% greater than market value, the total annual return

14   opportunity is $3.000 on book value with an annual dividend of $0.960, there is

15   an opportunity for growth of $2.040 which translates to 8.50% in contrast to the

16   6.00% growth in market price expected by investors.

17   In view of the foregoing, it is clear that the DCF model either understates

18   or overstates investors' required cost of common equity capital when market

19   values exceed or are less than their underlying book values and thus multiple

20   cost of common equity models should be relied upon when estimating investors'

21   expectations.

22

23   Q.   Have any commissions explicitly stated that the DCF model should not be relied

24   upon exclusively?

25

26   A.   Yes. As stated previously, the majority of regulatory commissions rely upon a

27   combination of the various cost of common equity models available.

1   Specifically, the Iowa Utilities Board (IUB) has recognized the tendency of

2   the DCF model to understate investors' expected cost of common equity capital

3   when market values are significantly above their book values. In its June 17,

4   1994 Final Decision and Order in <u>Re U.S. West Communications, Docket No.</u>

5   <u>RPU-93-9</u> the IUB stated:[18]

6

7   While the Board has relied in the past on the DCF model, in *Iowa*
8   *Electric Light and Power Company*, Docket No. RPU-89-9, "Final
9   Decision and Order" (October 15, 1990), the Board stated: '[T]he
10   DCF model may understate the return on equity in some
11   circumstances. This is particularly true when the market is
12   relatively volatile and the company in question has a market-to-
13   book ratio in excess of one." Those conditions exist in this case
14   and the Board will not rely on the DCF return. (Consumer
15   Advocate Ex. 367, See Tr. 2208, 2250, 2277, 2283-2284). *The*
16   *DCF approach underestimates the cost of equity needed to*
17   *assure capital attraction during this time of market uncertainty and*
18   *volatility. The board will, therefore, give preference to the risk*
19   *premium approach.* (italics added)
20

21 Similarly, in 1994, the Indiana Utility Regulatory Commission (IURC), for

22 example, recognized the tendency of the DCF model to understate the cost of

23 equity when market value exceeds book value[19]:

24

25   In determining a common equity cost rate, we must again
26   recognize the tendency of the traditional DCF model, . . . to
27   understate the cost of common equity. As the Commission stated
28   in Indiana-Mich. Power Co. (BPU 8/24/90), Cause No. 38728, 116
29   PUR 4th 1, 17-18, *"the unadjusted DCF result is almost always*
30   *well below what any informed financial analyst would regard as*
31   *defensible, and therefore, requires an upward adjustment based*
32   *largely on the expert witness's judgement."* (italics added)
33

34   *   *   *

35

---

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

[19]   <u>Re: Indiana-American Water Company, Inc., Cause No. 39595</u>, 150 PUR4th at 167-168.

1   [u]nder the traditional DCF model . . . the appropriate earnings
2   level of the utility would not be derived by applying the DCF result
3   to the market price of the Company's stock . . . it would be applied
4   to the utility's net original cost rate base. *If the market price of the*
5   *stock exceeds its book value, . . . the investor will not achieve the*
6   *return which the model finds is necessary.* (italics added)
7

8   Also, the Hawaii Public Utilities Commission (HPUC) recognized this

9   phenomenon in a decision dated June 30, 1992[20] in a case regarding Hawaiian

10 Electric Company, Inc., when it stated:

11
12   In this docket, as in other rate proceedings, experts disagree on
13   the relative merits of the various methods of determining the cost
14   of common equity. In this docket, HECO is particularly critical of
15   the use of the constant growth DCF methodology. It asserts that
16   method is imbued with downward bias and, thus, its use will
17   understate common equity cost. *We are cognizant of the*
18   *shortcomings of the DCF method.* There are, however,
19   shortcomings to be found with the use of CAPM and the RP
20   methods as well. We reiterate that, despite the problems with the
21   use of any methodology, *all methods should be considered and*
22   *that the DCF method and the combined CAPM and RP methods*
23   *should be given equal weight.* (italics added)
24

25   More recently, the Pennsylvania Public Utilities Commission, (PaPUC) in

26 its January 16, 2004 Opinion and Order in Docket Nos. R-00038304 (PAWC)

27 and C0001 through C00171 re: Pennsylvania-American Water Company

28 (PAWC) stated:

29
30   As we determined in PAWC's prior base rate base, at Docket No. R-
31   00016339 (Order entered January 25, 2002), a 60 basis point
32   adjustment to the market based common equity cost rate will
33   compensate PAWC for the aforementioned application of a market
34   based common equity cost rate to a book value common equity ratio.
35
36   PAWC indicates that a preliminary DCF calculation, which is
37   computed using the market price of PAWC's common stock, should

---

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

1 be adjusted to reconcile the divergence between market and book
2 values.

4 We agree that a financial risk adjustment is proper. Accordingly, we
5 find that, in order to place the computed DCF result on a consistent
6 basis with the greater financial risk, inherent in PAWC's book value-
7 derived capital structure ratios, a 60 basis point financial risk
8 adjustment above our 10 percent representative DCF common equity
9 cost rate recommendation is warranted.

12 Q. Do other cost of common equity models contain unrealistic assumptions and

13 have shortcomings?

15 A. Yes. That is why I am not recommending that any of the models be relied upon

16 exclusively. I have focused on the shortcomings of the DCF model because

17 some regulatory commissions still place excessive or exclusive reliance upon it.

18 Although the DCF model is useful, it is not a superior methodology that supplants

19 financial theory and market evidence based upon other valid cost of common

20 equity models. For these reasons, no model, including the DCF, should be relied

21 upon exclusively.

23 3. Application of the Single-Stage DCF Model

25 a. Dividend Yield

26 Q. Please describe the dividend yield you used in your application of the DCF

27 model.

29 A. The unadjusted dividend yields are based upon an average of a recent spot date

30 (December 7, 2004) as well as an average of the three months ended November

31 30, 2004, respectively, which are shown on Aqua Schedule 3.11. The average

32 unadjusted yield is 3.2% for the six C.A. Turner water companies, 3.2% for the

32

1		three Value Line (Std. Ed.) water companies, and 3.7% for the fifteen utilities
2		selected on the basis of least relative distance.
3		
4		b. Discrete Adjustment of Dividend Yield
5	Q.	Please explain the dividend growth component shown on Aqua Schedule 3.9,
6		pages 1 and 2, Column 2.
7		
8	A.	Because dividends are paid quarterly, or periodically, as opposed to continuously
9		(daily), an adjustment to the dividend yield must be made. This is often referred
10		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 pages 1 and 2 of Aqua Schedule 3.9 have been adjusted upward to reflect one-half the growth rates shown in Column 4.

c. Selection of Growth Rates for Use in the Single-Stage DCF Model

Q. Please explain the basis of the growth rates of the proxy group of six C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.) water companies, and the proxy group of fifteen utilities selected on the basis of least relative distance which you use in your application of the DCF model.

A. Aqua Schedule 3.12 indicates that 79.4% of the common shares of the proxy group of six C.A. Turner water companies, 70.0% of the common shares of the proxy group of three Value Line (Std. Ed.) water companies, and 53.4% of the

33

1	common shares of the proxy group of fifteen utilities selected based on least
2	relative distance are held by individuals as opposed to institutional investors.
3	Individual investors are particularly likely to place great significance on the
4	opinions expressed by financial information services, such as Value Line and
5	Thomson FN/First Call, which are easily accessible and/or available on the
6	Internet.
7	Forecasts by analysts, including Value Line, are typically limited to five
8	years. In my opinion, I believe that investors in water utilities would have little
9	interest in historical growth rates beyond the most recent five years because an
10	historical five-year period balances the five-year period for projected growth
11	rates. Consequently, the use of five-year historical and five-year projected
12	growth rates in earnings per share (EPS) and dividends per share (DPS) as well
13	as the sum of internal and external growth in per share value (BR + SV) is
14	appropriate to consider in the determination of a growth rate for use in this
15	application of the DCF model. In addition, investors realize that analysts have
16	significant insight into the dynamics of the industries and they analyze individual
17	companies as well as companies' abilities to effectively manage the effects of
18	changing laws and regulations. Consequently, I have reviewed analysts'
19	projected growth in EPS, as well as historical and projected five-year compound
20	growth rates in EPS, DPS and (BR + SV) for each company in each proxy group.
21	The historical growth rates are from Value Line or calculated in a manner similar
22	to Value Line, while the projected growth rates in earnings are from Value Line
23	and Thomson FN/First Call forecasts. Thomson FN/First Call growth rate
24	estimates are not available for DPS and internal growth, and they do not include
25	the Value Line projections.
26	In addition to evaluating EPS and DPS growth rates, it is reasonable to
27	assume that investors also assess (BR + SV). The concept is based on well

34

1 documented financial theory that future dividend growth is a function of the

2 portion of the overall return to investors which is reinvested in the firm plus the

3 sales of new common stock. Consequently, the growth component as proxied by

4 internal and external growth is defined as follows:

5 $\qquad$ g = BR + SV

6 Where:

7
8 B = the fraction of earnings retained by the firm,
9 $\qquad$ i.e., retention ratio

10 R = the return on common equity
11
12 S = the growth in common shares outstanding
13
14 V = the premium/discount of a company's stock price
15 $\qquad$ relative to its book value, i.e., one minus the
16 $\qquad$ complement of the market/book ratio.

17 $\qquad$ Consistent with the use of five-year historical and five-year projected

18 growth rates in EPS and DPS, I have derived five-year historical and five-year

19 projected (BR + SV) growth. Projected EPS growth rate averages are shown in

20 Column 4 on page 2, while historical and projected growth in DPS, EPS, and BR

21 + SV is shown in Column 4, page 1 of Aqua Schedule 3.9. The bases of these

22 growth rates are summarized for the companies in each proxy group on page 1,

23 Aqua Schedule 3.13. Supporting growth rate data are detailed on pages 2

24 through 9 of Aqua Schedule 3.13, while pages 10 through 25 contain all of the

25 most current Value Line Investment Survey data for the companies in all three

26 proxy groups.

27

28 $\qquad$ d. Conclusion of Single-Stage Cost Rates

29 Q. Please summarize the single-stage growth DCF model results.

30

31 A. As shown on Aqua Schedule 3.9, the results of the applications of the single-

stage DCF model are 10.5% for the proxy group of six C.A. Turner water companies, 10.9% for the proxy group of three Value Line (Std. Ed.) water companies, and 10.7% for the proxy group of fifteen utilities. In arriving at conclusions of indicated common equity cost rates for the two proxy groups, I included only those single-stage DCF results which are greater than 200 basis points above the average prospective yield on Moody's A rated public utility bonds of 6.6%, or 8.6%, based upon Blue Chip Financial Forecasts' December 1, 2004 consensus forecast of about 50 economists of the expected yield on Aaa rated corporate bonds as discussed subsequently and derived in Note 3 on page 6 of Aqua Schedule 3.14. It is necessary to adjust the average Aaa rated corporate bond yield to be equivalent to a Moody's A2 rated public utility bond. As detailed in Note 2 on page 1 of Aqua Schedule 3.14, an adjustment to the average prospective yield on Aaa rated corporate bonds of 0.5% was required. Thus, the average prospective yield on Moody's A rated public utility bonds is 6.6%.

Based upon a review of recent authorized returns on common equity (ROE) in Illinois vis-à-vis concurrent estimates of the forecasted average yield on A rated public utility bonds, I determined that the equity risk premium implicit in recent ICC authorized ROEs is between 300 and 450 basis points. In addition, the ICC's authorized common equity cost rate for Aqua IL in Docket No. 04-0403 of 10.16% entered April 16, 2004 was 356 basis points above the then prospective yield on A rated public utility bonds of 6.6%. In accordance with the EMH, investors are aware of these implicit equity risk premia and, in my opinion, would not consider returns providing an equity risk premium of only 200 basis points either reasonable or credible. Therefore, it is reasonable, if not conservative, to eliminate any single-stage DCF results which are no more than 200 basis points above the current prospective average yield on A rated public

36

1   utility bonds of 6.6%.

2

3   4. Application of the Quarterly Version of the DCF Model

4   Q.   Please describe the quarterly version of the DCF model which you use to

5   calculate the indicated common equity cost rates.

6

7   A.   The traditional, or annual, single-stage, DCF model is based upon the

8   assumption that dividends are paid annually.   Virtually every utility pays

9   dividends on a quarterly basis. The quarterly DCF model takes into account the

10   reality of quarterly payments of dividends to investors. As Morin states[21] (Aqua

11   Schedule 3.10, page 5):

12
13   By analogy, a bank rate on deposits that does not take into
14   consideration the timing of the interest payments understates the
15   true yield if the customer receives the interest payments more
16   than one a year. The actual yield will exceed the stated nominal
17   rate.

18   The form of the model employed is shown in detail in Equation (7-2)

19   shown on Aqua Schedule 3.10, page 5, an excerpt from Morin's text, Regulatory

20   Finance: Utilities' Cost of Capital.

21
22   a. Selection of Market Prices for Use in the
23   Quarterly Version of the DCF Model

24   Q.   What periods of time have you used for market prices in order to employ the

25   quarterly DCF model?

26

27   A.   As indicated in Aqua Schedule 3.10, I employed the recent spot market prices as

28   of December 7, 2004 as well as average market prices for the three months

---

[21]   Id., p. 184.

1   ended November 30, 2004 consistent with my application of the single-stage

2   DCF model previously discussed.

3

4   b. Selection of Growth Rates for Use in the

5   Quarterly Version of the DCF Model

6 Q. What growth rates did you use in your application of the quarterly version of the

7   DCF model?

8

9 A. I utilized growth rates for each company based upon historical and projected

10   growth in DPS, EPS, and BR+SV as well as based upon average projected

11   growth in EPS calculated in a manner identical to the average growth rates for

12   each proxy group previously discussed in this testimony.

13

14   c. Conclusion of Quarterly Version DCF Cost Rates

15 Q. Please summarize the quarterly DCF model results.

16

17 A. As shown on Aqua Schedule 3.10, pages 1 and 2, the results of the application

18   of the quarterly version of the DCF model are 10.7% for the proxy group of six

19   C.A. Turner water companies, 11.1% for the proxy group of three Value Line

20   (Std. Ed.) water companies, and 10.8% for the proxy group of fifteen utilities. As

21   explained in detail above relative to the single-stage DCF model results, I also

22   eliminated those quarterly DCF model results which were no more than 200 basis

23   points above the prospective average yield on Moody's A rated public utility

24   bonds of 6.6%, or 8.6%.

25

26   5. Conclusion of DCF Cost Rates

27 Q. Please summarize the DCF model results.

28

1   A. As shown on Aqua Schedule 3.8, the results of the applications of the DCF

2   models are 10.6% for the proxy group of six C.A. Turner water companies, 11.0%

3   for the proxy group of three Value Line (Std. Ed.) water companies, and 10.8%

4   for the proxy group of fifteen utilities selected on the basis of least relative

5   distance.

6

7   C. The Risk Premium Model (RPM)

8   1. Theoretical Basis

9   Q. Please describe the theoretical basis of the RPM.

10

11   A. Risk Premium theory indicates that the cost of common equity capital is greater

12   than the prospective company-specific cost rate for long-term debt capital. In

13   other words, the cost of common equity equals the expected cost rate for long-

14   term debt capital plus a risk premium to compensate common shareholders for

15   the added risk of being unsecured and last-in-line for any claim on the

16   corporation's assets and earnings.

17

18   Q. Some analysts state that the RPM is another form of the CAPM. Do you agree?

19

20   A. While there are some similarities, there is a very significant distinction between

21   the two models. The RPM and CAPM both add a "risk premium" to an interest

22   rate. However, the beta approach to the determination of an equity risk premium

23   in the RPM should not be confused with the CAPM. Beta is a measure of

24   systematic, or market, risk, a relatively small percentage of total risk (the sum of

25   both non-diversifiable systematic and diversifiable unsystematic risk).

26   Unsystematic risk is fully captured in the RPM through the use of the prospective

27   long-term bond yield as can be shown by reference to pages 3 through 9 of Aqua

1		Schedule 3.2, which confirm that the bond rating process involves an
2		assessment of all business and financial risks. In contrast, the use of a risk-free
3		rate of return in the CAPM does not, and by definition cannot, reflect a company's
4		specific i.e., unsystematic risk. Consequently, a much larger portion of the total
5		common equity cost rate is reflected in the company-specific bond yield (a
6		product of the bond rating) than is reflected in the risk-free rate in the CAPM, or
7		indeed even by the dividend yield employed in the DCF model. Moreover, the
8		financial literature recognizes the RPM and CAPM as two separate and distinct
9		cost of common equity models as discussed previously.
10		
11	Q.	Have you performed RPM analyses of common equity cost rate for the two proxy
12		groups?
13		
14	A.	Yes. The results of my application of the RPM are summarized on page 1 of
15		Aqua Schedule 3.14. On Line No. 3, page 1, Aqua Schedule 3.14, I show the
16		average expected yield on A rated public utility bonds of 6.6%. On Line No. 4, I
17		show the adjustments, if necessary, that need to be made to the average 6.6%
18		expected A rated utility bond yield so that the expected yields of 6.6% and 6.7%
19		in Line No. 5 are reflective of the proxy group of six C.A. Turner water
20		companies' average Moody's bond rating of A2, the average Moody's bond rating
21		of the three Value Line (Std. Ed.) water companies of A2, and the average
22		Moody's bond rating of A3 for the proxy group of fifteen utilities selected on the
23		basis of least relative distance as shown on page 2 of Aqua Schedule 3.14. On
24		Line No. 6 of page 1, my conclusion of an equity risk premium applicable to each
25		proxy group is shown, while the total risk premium common equity cost rates are
26		shown on Line No. 7.
27		

40

2. Estimation of Expected Bond Yield

1

2 Q. Please explain the basis of the expected bond yield of 6.6% applicable to the

3 average company in both proxy groups.

4

5 A. Because the cost of common equity is prospective, a prospective yield on

6 similarly-rated long-term debt is essential. As shown on Aqua Schedule 3.14,

7 page 2, the average Moody's bond rating is A2 for both the proxy group of six

8 C.A. Turner water companies and the three Value Line (Std. Ed.) water

9 companies, and A3 for the proxy group of fifteen utilities. I relied upon a

10 consensus forecast of about 50 economists of the expected yield on Aaa rated

11 corporate bonds for the six calendar quarters ending with the first calendar

12 quarter of 2006 as derived from the December 1, 2004 Blue Chip Financial

13 Forecasts (shown on page 7 of Aqua Schedule 3.14). As shown on Line No. 1 of

14 page 1 of Aqua Schedule 3.14, the average expected yield on Moody's Aaa rated

15 corporate bonds is 6.1%. It is necessary to adjust that average yield to be

16 equivalent to a Moody's A2 rated public utility bond. Consequently, an

17 adjustment to the average prospective yield on Aaa rated corporate bonds of

18 0.5% was required. It is shown on Line No. 2, page 1 of Aqua Schedule 3.14 and

19 explained in Note 2 at the bottom of the page. After adjustment, the expected

20 bond yield applicable to a Moody's A rated public utility bond is 6.6% as shown

21 on Line No. 3, page 1 of Aqua Schedule 3.14.

22 Because both the proxy group of six C.A. Turner water companies' and

23 the proxy group of three Value Line (Std. Ed.) water companies' average Moody's

24 bond rating is A2, no adjustment is necessary to make the prospective bond yield

25 applicable to an A2 public utility bond. In addition, because the proxy group of

26 fifteen utilities selected on the basis of least relative resistance average Moody's

27 bond rating is A3, an adjustment of the expected yield on A rated public utility

41

1   bonds of 6.6% is necessary. As described in Note 4 on page 1 of Aqua Schedule

2   3.14, such an adjustment rounds to 0.0%. Therefore, the expected specific bond

3   yield is 6.6% for both proxy groups of water companies and 6.7% for the proxy

4   group of fifteen utilities.

5

6   3. Estimation of the Equity Risk Premium

7 Q.   Please explain the method utilized to estimate the equity risk premium.

8

9 A.   I evaluated the results of two different historical equity risk premium studies, as

10   well as Value Line's forecasted total annual market return in excess of the

11   prospective yield on high grade corporate bonds, as detailed on pages 5, 6 and

12   8 of Aqua Schedule 3.14. As shown on Line No. 3, page 5 of Aqua Schedule

13   3.14, the mean equity risk premium based on both of the studies is 4.0%

14   applicable to the proxy group of six C.A. Turner water companies and 4.2%

15   applicable to both the proxy group of three Value Line (Std. Ed.) water

16   companies and the proxy group of fifteen utilities selected on the basis of least

17   relative distance. These estimates are the result of an average of a beta-derived

18   historical equity risk premium and a forecasted total market equity risk premium

19   as well as the mean historical equity risk premium applicable to public utilities

20   with bonds rated A based upon holding period returns.

21   The basis of the beta-derived equity risk premia applicable to the proxy

22   groups is shown on page 6 of Aqua Schedule 3.14. Beta-determined equity risk

23   premia should receive substantial weight because betas are derived from the

24   market prices of common stocks over a recent five-year period. Beta is a

25   meaningful measure of prospective relative risk to the market as a whole and is a

26   logical means by which to allocate a relative share of the market's total equity

27   risk premium.

1   The total market equity risk premium utilized is 5.7% and is based upon

2   an average of both the long-term historical and forecasted market risk premia of

3   6.3% and 5.1%, respectively, as shown on page 6 of Aqua Schedule 3.14. To

4   derive the historical market equity risk premium, I used the most recent Ibbotson

5   Associates' data on holding period returns for the S&P 500 Composite Index and

6   Salomon Brothers Long-term High-grade Corporate Bond Index covering the

7   period 1926-2003. The use of holding period returns over a very long period of

8   time is useful in the beta approach. As Ibbotson Associates'[22] Valuation Edition

9   2004 Yearbook states:

10
11   The estimate of the equity risk premium depends on the length of
12   the data series studied. A proper estimate of the equity risk
13   premium requires a data series long enough to give a reliable
14   average without being unduly influenced by very good and very
15   poor short-term returns. When calculated using a long data
16   series, the historical equity risk premium is relatively stable.[5]
17   Furthermore, because an average of the realized equity risk
18   premium is quite volatile when calculated using a short history,
19   using a long series makes it less likely that the analyst can justify
20   any number he or she wants. The magnitude of how shorter
21   periods can affect the result will be explored later in this chapter.
22
23   Some analysts estimate the expected equity risk premium using a
24   shorter, more recent time period on the basis that recent events
25   are more likely to be repeated in the near future; furthermore, they
26   believe that the 1920s, 1930s and 1940s contain too many
27   unusual events. This view is suspect because all periods contain
28   "unusual" events. Some of the most unusual events this century
29   took place quite recently, including the inflation of the late 1970s
30   and early 1980s, the October 1987 stock market crash, the
31   collapse of the high-yield bond market, the major contraction and
32   consolidation of the thrift industry, the collapse of the Soviet
33   Union, and the development of the European Economic
34   Community – all of these happened in the last 20 years.
35
36   It is even difficult for economists to predict the economic
37   environment of the future. For example, if one were analyzing the

[22] Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition 2004 Yearbook, pp. 76-77.

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 78-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 12.4% and the long-term arithmetic mean yield on corporate bonds of 6.1% were used, as shown at Line Nos. 1 and 2 of page 6 of Aqua Schedule 3.14. As shown on Line No. 3 of page 6, the resultant long-term historical equity risk premium on the market as a whole is 6.3%.

I used arithmetic mean return rates because they are appropriate for cost of capital purposes. As Ibbotson Associates state in their Valuation Edition 2004 Yearbook[23]:

> 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

---

[23] Id., p. 71.

44

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.

As Ibbotson Associates[24] 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

---

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

1   returns, investors cannot meaningfully evaluate prospective risk. As discussed

2   previously, all of the cost of common equity models, including the DCF, are

3   premised upon the EMH, that all publicly available information is reflected in the

4   market prices paid. If investors relied upon the geometric mean of ex-post

5   spreads, they would have no insight into the potential variance of future returns

6   because the <u>geometric mean relates the change over many periods to a constant</u>

7   <u>rate of change, thereby obviating the year-to-year fluctuations, or variance,</u>

8   <u>critical to risk analysis</u>.

9   The basis of the forecasted market equity risk premium can be found on

10   Line Nos. 4 through 6 on page 6 of Aqua Schedule 3.14. It is derived from an

11   average of the most recent 3-month (using the months of September 2004

12   through November 2004) and a recent spot (December 3, 2004) median market

13   price appreciation potentials by Value Line as explained in detail in Note 1 on

14   page 3 of Aqua Schedule 3.15. The average expected price appreciation is 42%

15   which translates to 9.54% per annum and, when added to the average (similarly

16   calculated) dividend yield of 1.64% equates to a forecasted annual total return

17   rate on the market as a whole of 11.18%, rounded to 11.2%. Thus, this

18   methodology is consistent with the use of the 3-month and spot dividend yields in

19   my application of the DCF model. To derive the forecasted total market equity

20   risk premium of 5.1% shown on Aqua Schedule 3.14, page 6, Line No. 6, the

21   December 1, 2004 forecast of about 50 economists of the expected yield on

22   Moody's Aaa rated corporate bonds for the six calendar quarters ending with the

23   first calendar quarter 2006 of 6.1% from <u>Blue Chip Financial Forecasts</u> was

24   deducted from the Value Line total market return of 11.2%. The calculation

25   resulted in an expected market risk premium of 5.1%.

26   The average of the historical and projected market equity risk premia of

27   6.3% and 5.1% is 5.7%.

46

1   On page 9 of Aqua Schedule 3.14, the most current Value Line (Standard

2   Edition) betas for the companies in all three proxy groups are shown. Applying

3   the average beta of each proxy group to the average market equity risk premium

4   of 5.7% results in a beta adjusted equity risk premium of 3.8% for the proxy group

5   of six C.A. Turner water companies, 4.1% for both the proxy group of three Value

6   Line (Std. Ed.) water companies and the proxy group of fifteen utilities selected

7   on the basis of least relative distance as shown on Aqua Schedule 3.14, page 6,

8   Line No. 9.

9   A mean equity risk premium of 4.2% applicable to companies with A rated

10   public utility bonds was calculated based upon holding period returns from a

11   study using public utilities, as shown on Line No. 2, page 5 of Aqua Schedule

12   3.14, and detailed on page 8 of the same schedule.

13   The equity risk premia applicable to the proxy group of six C.A. Turner

14   water companies, the proxy group of three Value Line (Std. Ed.) water

15   companies, and to the proxy group of fifteen utilities selected on the basis of

16   least relative distance are the averages of the beta-derived premia and that

17   based upon the holding period returns of public utilities with A rated bonds, as

18   summarized on Aqua Schedule 3.14, page 5, i.e., 4.0%, 4.2%, and 4.2%,

19   respectively.

20

21   Q.   What are the RPM calculated common equity cost rates?

22

23   A.   They are 10.6% for the six C.A. Turner water companies, 10.8% for the three

24   Value Line (Std. Ed.) water companies, and 10.9% for the fifteen utilities as

25   shown on Aqua Schedule 3.14, page 1.

26

27   Q.   Some critics of the RPM model claim that its weakness is that it presumes a

47

1   constant equity risk premium. Is such a claim valid?

2

3   A.   No.   The equity risk premium varies inversely with interest rate changes,

4   although not in tandem with those changes.   This presumption of a constant

5   equity risk premium is no different than the presumption of a constant "g", or

6   growth component, in the DCF model. If one calculates a DCF cost rate today,

7   the absolute result "k", as well as the growth component "g", would invariably

8   differ from a calculation made just one or several months earlier. This implies

9   that the "g" does change, although in the application of the standard DCF model,

10   the "g" is presumed to be constant.   Hence, there is no difference between the

11   RPM and DCF models in that both models assume a constant component, but in

12   reality, these components, the "g" and the equity risk premium both change.

13   As Morin[25] states with respect to the DCF model:

14
15   It is not necessary that g be constant year after year to make the
16   model valid. *The growth rate may vary randomly around some
17   average expected value.   Random variations around trend are
18   perfectly acceptable, as long as the mean expected growth is
19   constant.* The growth rate must be 'expectationally constant' to
20   use formal statistical jargon. (italics added)
21

22   The foregoing confirms that the RPM is similar to the DCF model. Both assume

23   an "expectationally constant" risk premium and growth rate, respectively, but in

24   reality both vary (change) randomly around an arithmetic mean. Consequently,

25   the use of the arithmetic mean, and not the geometric mean is confirmed as

26   appropriate in the determination of an equity risk premium as discussed

27   previously.

---

[25]   Id., p. 111.

D. The Capital Asset Pricing Model (CAPM)

1. Theoretical Basis

Q. Please explain the theoretical basis of the CAPM.

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

1   Numerous tests of the CAPM have confirmed its validity. These tests

2   have measured the extent to which security returns and betas are related as

3   predicted by the CAPM. However, Morin observes that while the results support

4   the notion that beta is related to security returns, it has been determined that the

5   empirical Security Market Line (SML) described by the CAPM is not as steeply

6   sloped as the predicted SML. Morin[26] states:

7
8   With few exceptions, the empirical studies agree that ... low-beta
9   securities earn returns somewhat higher than the CAPM would
10   predict, and high-beta securities earn less than predicted.
11
12   *   *   *
13
14   Therefore, the empirical evidence suggests that the expected
15   return on a security is related to its risk by the following
16   approximation:
17
18       $K = R_F + x \beta(R_M - R_F) + (1-x) \beta(R_M - R_F)$
19
20   where x is a fraction to be determined empirically. ...the value of x
21   that best explains the observed relationship is between 0.25 and
22   0.30. If x = 0.25, the equation becomes:
23
24       $K = R_F + 0.25(R_M - R_F) + 0.75 \beta(R_M - R_F)^{27}$
25

26   In view of theory and practical research, I have applied both the

27   traditional CAPM and the empirical CAPM to the companies in the proxy groups

28   and averaged the results.

29

30   2. Risk-Free Rate of Return

31   Q.   Please describe your selection of a risk-free rate of return.

32

---

[26]   Id., at p. 321.

[27]   Id., at pp. 335-336.

1   A.   My applications of the traditional and empirical CAPM are summarized on Aqua

2   Schedule 3.15, page 1. As shown on Line Nos. 1 and 4, the risk-free rate

3   adopted for both applications is 5.4%. It is based upon the average consensus

4   forecast of the reporting economists in the December 1, 2004 Blue Chip

5   Financial Forecasts as shown in Note 2, page 4, of the expected yields on long-

6   term U.S. Treasury bonds for the six quarters ending with the first calendar

7   quarter 2006.

8

9   Q.   Why is the prospective yield on long-term U.S. Treasury Bonds appropriate for

10   use as the risk-free rate?

11

12   A.   The yield on long-term T-Bonds is almost risk-free and its term is consistent with

13   the long-term cost of capital to public utilities measured by the yields on A rated

14   public utility bonds, and is consistent with the long-term investment horizon

15   inherent in utilities' common stocks. Therefore, it is consistent with the long-term

16   investment horizon presumed in the standard DCF model employed in regulatory

17   ratemaking. Moreover, Morin[28] states:

18
19   Equity investors generally have an investment horizon far in
20   excess of fifty days. More importantly, the short-term T-bill yields
21   reflect the impact of factors different from those influencing long-
22   term securities, such as common stock. For example, the
23   premium for expected inflation absorbed into 90-day Treasury
24   bills is likely to be far different than the inflationary premium
25   absorbed into long-term securities yields. The yields on long-term
26   Treasury bonds match more closely with common stock returns.
27   *For investors with a long time horizon, a long-term government*
28   *bond is almost risk-free.* (italics added)
29

30   In addition, Ibbotson Associates note in their Valuation Edition 2003

---

[28] Id., at p. 308.

51

1   <u>Yearbook</u>[29]

2
3   The horizon of the chosen Treasury security should match the
4   horizon of whatever is being valued. When valuing a business
5   that is being treated as a going concern, the appropriate Treasury
6   yield should be that of a long-term Treasury bond. Note that the
7   horizon is a function of the investment, not the investor.
8
9

10   In conclusion, the average expected yield on long-term Treasury Bonds is

11   the appropriate proxy for the risk-free rate in the CAPM because it is less volatile

12   than yields on Treasury Bills, is almost risk-free as noted by Morin above and is

13   consistent with the long-term investment horizon implicit in common stocks.

14

15   3. <u>Market Equity Risk Premium</u>

16   Q. Please explain the estimation of the expected equity risk premium for the market.

17

18   A. First, I estimate investors' expected total return rate for the market. Then I

19   estimate the expected risk-free rate which I subtract from the expected total

20   return rate for the market. The result is an expected equity risk premium for the

21   market, some proportion of which must be allocated to the companies in the

22   proxy group through the use of beta. As a measure of risk relative to the market

23   as a whole, the beta is an appropriate means by which to apportion the market

24   risk premium to a specific company or group.

25   As shown on Aqua Schedule 3.15, page 1, Line No. 2, the proportional

26   market equity risk premium, based on the traditional CAPM, is 4.3% for the proxy

27   group of six C.A. Turner water companies and 4.7% for both the proxy group of

28   three Value Line (Std. Ed.) water companies and the proxy group of fifteen

---

[29] <u>Id.</u>, p. 53.

1	utilities selected on the basis of least relative distance. Applying the empirical
2	CAPM results in an equity risk premium of 4.8% for the six C.A. Turner water
3	companies and 5.1% for both the three Value Line (Std. Ed.) water companies
4	and the fifteen utilities as shown on Line No. 5 on page 1 of Aqua Schedule 3.15.
5	The total market equity risk premium utilized was 6.5% and is based upon an
6	average of the long-term historical and projected market risk premia.
7	The basis of the projected median market equity risk premium is
8	explained in detail in Note 1 on page 4 of Aqua Schedule 3.15. As previously
9	discussed, it is derived from an average of the most recent 3-month (using the
10	months of September 2004 through November 2004) and a recent spot
11	(December 3, 2004) 3 - 5 year median total market price appreciation projections
12	from Value Line, and the long-term historical average from Ibbotson Associates.
13	The appreciation projections by Value Line plus average dividend yield equate to
14	a forecasted annual total return rate on the market of 11.2%. The long-term
15	historical return rate of 12.4% on the market as a whole is from Ibbotson
16	Associates' Stocks, Bonds, Bills and Inflation - Valuation Edition 2004 Yearbook.
17	In each instance, the relevant risk-free rate was deducted from the total market
18	return rate. For example, from the Value Line projected total market return of
19	11.2%, the forecasted average risk-free rate of 5.4% was deducted indicating a
20	forecasted market risk premium of 5.8%. From the Ibbotson Associates' long-
21	term historical total return rate of 12.4%, the long-term historical income return
22	rate on long-term U.S. Government Securities of 5.2% was deducted indicating
23	an historical equity risk premium of 7.2%. Thus, the average of the projected and
24	historical total market risk premia of 5.8% and 7.2%, respectively, is 6.5%.
25	
26	Q What are the results of your applications of the traditional and empirical CAPM to
27	the proxy groups?

1

2   A.   As shown on Aqua Schedule 3.15, Line No. 3 of page 1, the traditional CAPM

3   cost rate is 9.7% for the proxy group of six C.A. Turner water companies and

4   10.1% for both the proxy group of three Value Line (Std. Ed.) water companies

5   and the proxy group of fifteen utilities selected on the basis of least relative

6   distance. And, as shown on Line No. 6 of page 1, the empirical CAPM cost rate

7   is 10.2% for the six water companies and 10.5% for both the three Value Line

8   (Std. Ed.) water companies and the fifteen utilities. The traditional and empirical

9   CAPM cost rates are shown individually by company on pages 2 and 3 of Aqua

10   Schedule 3.15. As shown on Line No. 7, the CAPM cost rate applicable to the

11   proxy group of six C.A. Turner water companies is 10.0%, 10.3% applicable to

12   the proxy group of three Value Line (Std. Ed.) water companies, and 10.3%

13   applicable to the proxy group of fifteen utilities based upon the traditional and

14   empirical CAPM results.

15

16   Q.   Some critics of the ECAPM model claim that using adjusted betas in a traditional

17   CAPM amounts to using an ECAPM. Is such a claim valid?

18

19   A.   No. Frank J. Hanley, President, AUS Consultants - Utility Services and a

20   colleague of mine, has been in communication with Dr. Roger A. Morin of

21   Georgia State University and the author of Regulatory Finance – Utilities' Cost of

22   Capital (1994, Public Utility Reports, Inc., Arlington, VA). Via e-mail, Dr. Morin

23   has indicated that the ECAPM compensates for CAPM's inherent bias by

24   ascribing a higher intercept and flatter slope to CAPM. It is not an attempt to

25   increase beta. In his e-mail of August 31, 2000, Dr. Morin states:

26
27   There are two distinct separate issues involved when implementing
28   the CAPM. First, given the validity of the standard CAPM, what is the

1   best proxy for expected beta? Second, and more fundamentally, does
2   the standard form of the CAPM provide the best explanation of the
3   risk-return relationship observed on capital markets?
4
5   Regarding the standard, or traditional, CAPM, Dr. Morin also states:

6   There have been countless empirical tests of the CAPM to determine
7   to what extent security returns and betas are related in the manner
8   predicted by the CAPM. The results of the tests support the idea that
9   beta is related to security returns, that the risk-return tradeoff is
10   positive, and that the relationship is linear. The contradictory finding
11   is that the risk-return tradeoff is not as steeply sloped as the predicted
12   CAPM. That is, low-beta securities earn returns somewhat higher
13   than the CAPM would predict, and high-beta securities earn less than
14   predicted. This is one of the most well-know results in finance. A
15   CAPM-based estimate of cost of capital underestimates the return
16   required from low-beta securities and overstates the return from high-
17   beta securities, based on the empirical evidence. The empirical form
18   of the CAPM refines the standard form of the CAPM to account for this
19   phenomenon.
20
21   Thus, I do not share the view that the ECAPM is equivalent to a beta
22   adjustment. For utility stocks with betas less than one, the CAPM
23   understates the return. The ECAPM allows for the CAPM's inherent
24   bias by ascribing a higher intercept and flatter slope to the CAPM.
25   The ECAPM is a return (Y-axis, vertical axis) adjustment. It is not a
26   beta risk (X-axis, horizontal) adjustment. <u>The ECAPM is not an</u>
27   <u>attempt to increase the beta estimate, which would be a horizontal x-</u>
28   <u>axis adjustment. The ECAPM is a return adjustment rather than a risk</u>
29   <u>adjustment.</u> (emphasis added.)
30
31   Dr. Morin also indicates in his correspondence with Mr. Hanley that there

32 "is a huge financial literature which supports both the use of the ECAPM and the

33 use of adjusted betas."

34   Moreover, regulatory support for the ECAPM can be found in the New

35 York Public Service Commission's Generic Financing Docket, Case 91-M-0509.

36 In addition, the Regulatory Commission of Alaska (RCA) in its Order No. 151 in

37 Docket No. P-97-4 re: In the Matter of the Correct Calculation and Use of

38 Acceptable Input Data to Calculate the 1997, 1998, 1999, 2000, 2001 and 2002

1   Tariff Rates for the Intrastate Transportation of Petroleum over the TransAlaska

2   Pipeline System notice:

3   Although we primarily rely upon Tesoro's recommendation, we are
4   concerned, however, about Tesoro's CAPM analysis. Tesoro
5   averaged the results it obtained from CAPM and ECAPM while at the
6   same time providing empirical testimony[604] that the ECAPM results are
7   more accurate then [sic] traditional CAPM results. The reasonable
8   investor would be aware of these empirical results. Therefore, we
9   adjust Tesoro's recommendation to reflect only the ECAPM result.
10

11   Moreover, the slope of the Security Market Line (SML) should not be

12   confused with beta. As Eugene F. Brigham, finance professor emeritus and the

13   author of many financial textbooks states[30] :

14   The slope of the SML reflects the degree of risk aversion in the
15   economy – the greater the average investor's aversion to risk, then (1)
16   the steeper is the slope of the line, (2) the greater is the risk premium
17   for any risky asset, and (3) the higher is the required rate of return on
18   risky assets.[12]
19
20   [12]Students sometimes confuse beta with the slope of the SML. This is
21   a mistake. As we saw earlier in connection with Figure 6-8, and as is
22   developed further in Appendix 6A, beta does represent the slope of a
23   line, but not the Security Market Line. This confusion arises partly
24   because the SML equation is generally written, in this book and
25   throughout the finance literature, as $k_i = R_F + b_i(k_M - R_F)$, and in this
26   form b_i looks like the slope coefficient and $(k_M - R_F)$ the variable. It
27   would perhaps be less confusing if the second term were written $(k_M -$
28       $R_F)b_i$, but this is not generally done.
29

30   In view of the foregoing, using adjusted betas in an ECAPM analysis is

31   not incorrect, nor inconsistent with the financial literature. Rather, the use of the

32   traditional CAPM results in an understated estimate of the cost of common equity

33   capital for a utility with an adjusted beta below 1.00. And notwithstanding

---

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

1   regulatory support for the use of only the ECAPM, my CAPM analysis, which

2   includes both the traditional CAPM and the ECAPM, is a conservative approach

3   resulting in a reasonable estimate of the cost of common equity

4   E. Comparable Earnings Model (CEM)

5   1. Theoretical Basis

6   Q.   Please describe your application of the Comparable Earnings Model and how it is

7   used to determine common equity cost rate.

8

9   A.   My application of the CEM is summarized on Aqua Schedule 3.16 which consists

10   of eight pages. Pages 1 and 2 show the CEM results for the proxy group of six

11   C.A. Turner water companies, pages 3 and 4 show the CEM result for the proxy

12   group of three Value Line (Std. Ed.) water companies, and pages 5 and 6 show

13   the CEM results for the proxy group of fifteen utilities selected on the basis of

14   least relative distance. Pages 7 and 8 contain notes related to pages 1 through

15   6.

16   The comparable earnings approach is derived from the "corresponding

17   risk" standard of the landmark cases of the U.S. Supreme Court. Therefore, it is

18   consistent with the Hope doctrine that the return to the equity investor should be

19   commensurate with returns on investments in other firms having corresponding

20   risks.

21   The CEM is based upon the fundamental economic concept of

22   opportunity cost which maintains that the true cost of an investment is equal to

23   the cost of the best available alternative use of the funds to be invested. The

24   opportunity cost principle is also consistent with one of the fundamental

25   principles upon which regulation rests: that regulation is intended to act as a

26   surrogate for competition and to provide a fair rate of return to investors.

27   The CEM is designed to measure the returns expected to be earned on

1 the book common equity, in this case net worth, of similar risk enterprises. Thus,

2 it provides a direct measure of return, since it translates into practice the

3 competitive principle upon which regulation rests.   In my opinion, it is

4 inappropriate to use the achieved returns of regulated utilities of similar risk

5 because to do so would be circular and inconsistent with the principle of equality

6 of risk with non-price regulated firms.

7 The difficulty in application of the CEM is to select a proxy group of

8 companies which are similar in risk, but are not price regulated utilities.

9 Consequently, the first step in determining a cost of common equity using the

10 comparable earnings model is to choose an appropriate proxy group of non-price

11 regulated firms. The proxy group should be broad-based in order to obviate any

12 company-specific aberrations.   As stated previously, utilities need to be

13 eliminated to avoid circularity since the returns on book common equity of utilities

14 are substantially influenced by regulatory awards and are therefore not

15 representative of the returns that could be earned in a truly competitive market.

16

17 ## 2. Application of the CEM

18 Q. Please describe your application of the CEM.

19

20 A. My application of the CEM is market-based in that the selection of non-price

21 regulated firms of comparable risk is based upon statistics derived from the

22 market prices paid by investors.

23 I have chosen three proxy groups of domestic, non-price regulated firms

24 to reflect both the systematic and unsystematic risks of the proxy group of six

25 C.A. Turner water companies, the proxy group of three Value Line (Std. Ed.)

26 water companies and the proxy group of fifteen utilities selected on the basis of

27 least relative distance, respectively. The proxy group of seventy-nine non-utility

1	companies similar in risk to the proxy group of six C.A. Turner water companies,
2	of ninety-seven non-utility companies similar in risk to the proxy group of three
3	Value Line (Std. Ed.) water companies and seventy-one non-utility companies
4	similar in risk to the proxy group of fifteen utilities selected on the basis of least
5	relative distance are listed on pages 1 through 6, Aqua Schedule 3.16. The
6	criteria used in the selection of these proxy companies were that they be
7	domestic non-utility companies and have a meaningful rate of return on net
8	worth, common equity or partners' capital reported in Value Line (Standard
9	Edition) for each of the five years ended 2003, or projected for 2007-2009. Value
10	Line betas were used as a measure of systematic risk. The standard error of the
11	regression was used as a measure of each firm's specific, i.e., unsystematic risk.
12	The standard error of the regression reflects the extent to which events specific
13	to a company's operations will affect its stock price and, therefore, is a measure
14	of diversifiable, unsystematic, company-specific risk. *In essence, companies*
15	*which have similar betas and standard errors of the regressions, have similar*
16	*investment risk, i.e., the sum of systematic (market) risk as reflected by beta and*
17	*unsystematic (business and financial) risk, as reflected by the standard error of*
18	*the regression, respectively. Those statistics are derived from regression*
19	*analyses using market prices which, under the EMH reflect all relevant risks. The*
20	*application of these criteria results in proxy groups of non-price regulated firms*
21	*similar in risk to the average company in each proxy group.*
22	Using a Value Line, Inc. database dated September 16, 2004, the proxy
23	group of seventy-nine non-price regulated companies were chosen based upon
24	ranges of unadjusted beta and standard error of the regression. The ranges
25	were based upon the average standard deviations of the unadjusted beta and the
26	average standard error of the regression for the proxy group of six C.A. Turner
27	water companies.

1	The six C.A. Turner water companies in the proxy group have an average
2	unadjusted beta of 0.45 whose standard deviation is 0.1014 as of September 16,
3	2004, as shown on page 2, Aqua Schedule 3.16. The average standard error of
4	the regression is 3.7805 as also shown on Aqua Schedule 3.14, page 2 with a
5	standard deviation of 0.1661 as derived in Note 5, page 7 of Aqua Schedule
6	3.16. Ranges of unadjusted betas from 0.15 to 0.75 and of standard errors of the
7	regression from 3.2822 to 4.2788 were used to select the proxy group of seventy-
8	nine domestic non-utility companies comparable to the profile of the proxy group
9	of six C.A. Turner water companies as can be gleaned from pages 1 and 2 and
10	explained in Note 1 on page 4 of Aqua Schedule 3.16. These ranges are based
11	upon the proxy group's average unadjusted beta of 0.45 and average standard
12	error of the regression of 3.7805 plus or minus three standard deviations of beta
13	(0.1014 x 3 = 0.3042) and standard error of the regressions (0.1661 x 3 =
14	0.4983). The use of three standard deviations assures capturing 99.73% of the
15	distribution of unadjusted betas and standard errors, assuring comparability.
16	Likewise, using the same Value Line, Inc. database dated September 16,
17	2004, the proxy group of ninety-seven non-price regulated companies were
18	chosen based upon ranges of unadjusted beta and standard error of the
19	regression. The ranges were based upon the average standard deviations of the
20	unadjusted beta and the average standard error of the regression for the proxy
21	group of three Value Line (Std. Ed.) water companies.
22	The three Value Line (Std. Ed.) water companies in the proxy group have
23	an average unadjusted beta of 0.54 whose standard deviation is 0.0940 as of
24	September 16, 2004, as shown on page 4, Aqua Schedule 3.16. The average
25	standard error of the regression is 3.6320 as also shown on Aqua Schedule 3.16,
26	page 4 with a standard deviation of 0.1596 as derived in Note 10, page 8 of Aqua
27	Schedule 3.16. Ranges of unadjusted betas from 0.26 to 0.82 and of standard

1	errors of the regression from 3.1532 to 4.1108 were used to select the proxy
2	group of ninety-seven domestic non-utility companies comparable to the profile of
3	the proxy group of three Value Line (Std. Ed.) water companies as can be
4	gleaned from pages 3 and 4 and explained in Note 9 on pages 7 and 8 of Aqua
5	Schedule 3.16. These ranges are based upon the proxy group's average
6	unadjusted beta of 0.54 and average standard error of the regression of 3.6320
7	plus or minus three standard deviations of beta (0.0940 x 3 – 0.2820) and
8	standard error of the regressions (0.1596 x 3 = 0.4788). The use of three
9	standard deviations assures capturing 99.73% of the distribution of unadjusted
10	betas and standard errors, assuring comparability.
11	In addition, using the same Value Line, Inc. database dated September
12	16, 2004, the proxy group of seventy-one non-price regulated companies were
13	chosen based upon ranges of unadjusted beta and standard error of the
14	regression. The ranges were based upon the average standard deviations of the
15	unadjusted beta and the average standard error of the regression for the proxy
16	group of fifteen utilities selected on the basis of least relative distance.
17	The fifteen utilities in the proxy group have an average unadjusted beta of
18	0.53 whose standard deviation is 0.0861 as of September 16, 2004, as shown on
19	page 6 of Aqua Schedule 3.16. The average standard error of the regression is
20	3.2953 as also shown on Aqua Schedule 3.16, page 8 with a standard deviation
21	of 0.1448 as derived in Note 12, page 8 of Aqua Schedule 3.16. Ranges of
22	unadjusted betas from 0.27 to 0.79 and of standard errors of the regression from
23	2.8609 to 3.7297 were used to select the proxy group of seventy-one domestic
24	non-utility companies comparable to the profile of the proxy group of fifteen
25	utilities selected on the basis of least relative distance as can be gleaned from
26	pages 5 and 6 and explained in Note 11 on page 8 of Aqua Schedule 3.16.
27	These ranges are based upon the proxy group's average unadjusted beta of 0.53

61

1 and average standard error of the regression of 3.2953 plus or minus three

2 standard deviations of beta (0.0861 x 3 = 0.2583) and standard error of the

3 regressions (0.1448 x 3 = 0.4344). The use of three standard deviations assures

4 capturing 99.73% of the distribution of unadjusted betas and standard errors,

5 assuring comparability.

6   I believe that this methodology for selecting non-price regulated firms of

7 similar total risk (i.e., non-diversifiable systematic and diversifiable non-

8 systematic risk) is meaningful and effectively responds to the criticisms normally

9 associated with the selection of firms presumed to be comparable in total risk.

10 This is because the selection of non-price regulated companies comparable in

11 total risk is based upon regression analyses of market prices which reflect

12 investors' assessment of all risks, diversifiable and non-diversifiable. Thus, the

13 empirical selection process results in companies comparable in both systematic

14 and unsystematic risks, i.e., total risk.

15   Once proxy groups of non-price regulated companies are selected, it is

16 then necessary to derive returns on book common equity, net worth or partners'

17 capital for the companies in the groups. I have measured these returns using the

18 rate of return on net worth, common equity or partners' capital reported by Value

19 Line (Standard Edition). It is reasonable to measure these returns over both the

20 most recent historical five-year period as well as those projected over the

21 ensuing five-year period.

22

23 Q. What are your conclusions of CEM cost rate?

24

25 A. Conclusions of CEM cost rates are 16.5% for the proxy group of six C.A. Turner

26 water companies as shown on page 2 of Aqua Schedule 3.16, 16.1% for the

27 proxy group of three Value Line (Std. Ed.) water companies as shown on page 1,

62

1   and 15.4% for the proxy group of fifteen utilities selected on the basis of least

2   relative distance as shown on page 6.   Note that I have applied a test of

3   significance (Student's t-statistic) to determine whether any of the historical or

4   projected returns are significantly different from their respective means at the

5   95% confidence level.   As a result, the historical and the projected means of

6   several companies have been excluded.

7   I have also eliminated from the groups of non-price regulated companies,

8   all those rates of return which are greater than 20.0% or less than 200 basis

9   points above the current prospective yield of 6.6% on Moody's A rated public

10   utility bonds (see page 1 of Aqua Schedule 3.14), or 8.6% for reasons discussed

11   previously.   Such an elimination results in an arithmetic mean return rate of

12   14.8% on an historical five-year and 13.6% on a projected five-year basis for the

13   six C.A. Turner water companies, 14.4% on an historical five-year basis and

14   13.5% on a projected five-year basis for the three Value Line (Std. Ed.) water

15   companies, and 14.1% on an historical five-year basis and 13.5% on a projected

16   five-year basis for the fifteen utilities as shown on pages 2, 4 and 6 of Aqua

17   Schedule 3.16, respectively.   I rely upon the midpoint of the arithmetic mean

18   historical five-year and projected five-year rates of return of 14.2, 14.0% and

19   13.8% as my CEM conclusions for each proxy group, respectively.

20

21

22   IX.   RECOMMENDED COMMON EQUITY COST RATE

23   Q.   What is your recommended common equity cost rate?

24

25   A.   It is 11.30%, based upon a range of common equity cost rates of 11.10% to

26   11.50% after investment risk adjustment based upon the common equity cost

27   rates resulting from all four cost of common equity models consistent with the

1	EMH which logically mandates the use of multiple cost of common equity models.
2	In formulating my recommended common equity cost rate of 11.30%, I
3	reviewed the results of the application of four different cost of common equity
4	models, namely, the DCF, RPM, CAPM, and CEM for the three proxy groups. I
5	employ all four cost of common equity models as primary tools in arriving at my
6	recommended common equity cost rate because no single model is so inherently
7	precise that it can be relied upon solely, to the exclusion of other theoretically
8	sound models. As discussed above, all four models are based upon the Efficient
9	Market Hypothesis (EMH), and therefore, have application problems associated
10	with them. The EMH, as also previously discussed, requires the assumption that
11	investors rely upon multiple cost of common equity models. Moreover, as
12	demonstrated in this testimony, the prudence of using multiple cost of common
13	equity models is supported in the financial literature. Therefore, none should be
14	relied upon exclusively to estimate investors' required rate of return on common
15	equity.
16	In a market environment where market value deviates significantly from
17	book value (lower or higher), sole reliance on the DCF model is problematic for a
18	regulated utility because its application results in an overstatement or
19	understatement, respectively, of investors' required rate of return. Investors
20	expect to achieve their required rate of return based upon dividends received
21	and appreciation in market price. This testimony has shown that market prices
22	are significantly influenced by factors other than earnings per share (EPS) and
23	dividends per share (DPS). Thus, because it is necessary to use accounting
24	proxies for growth in the DCF model (such as EPS, DPS, or their derivative,
25	internal growth), that model does not reflect the full extent of market price growth
26	expected by investors. Market prices reflect other factors affecting growth not
27	accounted for in the standard regulatory version of the DCF model such as an

1 increase in the market value per share due to expected increases in

2 price/earnings multiples and less obvious factors included in the long-range

3 goals of investors. For these reasons, sole reliance on the DCF model should be

4 avoided. In fact, as discussed in detail above, state commissions in Iowa,

5 Indiana, Hawaii and Pennsylvania, which have previously relied primarily upon

6 the DCF, have explicitly recognized this tendency of the DCF model to

7 understate the common equity cost rate when, as now, market prices significantly

8 exceed book values.

9 The results of the four cost of common equity models applied to the proxy

10 groups of six C.A. Turner water companies, three Value Line (Std. Ed.) water

11 companies, and fifteen utilities selected on the basis of least relative distance are

12 shown on Aqua Schedule 3.1, page 2 and summarized below:

Table 4

	Proxy Group of Six C.A. Turner Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Discounted Cash Flow Model	10.6%	11.0%	10.8%
Risk Premium Model	10.6	10.8	10.9
Capital Asset Pricing Model	10.0	10.3	10.3
Comparable Earnings Model	14.2	14.0	13.8
Indicated Common Equity Cost Rate Before Investment Risk Adjustment	10.80%	11.00%	11.00%
Investment Risk Adjustment	0.30	0.30	0.50
Common Equity Cost Rate After Adjustment for Investment Risk	11.10%	11.30%	11.50%
Recommended Common Equity Cost Rate		11.30%	

38 Based upon these common equity cost rate results, I conclude that a

39 common equity cost rate of 10.80% is indicated for the proxy group of six C.A.

65

1   Turner water companies, of 11.00% for the proxy group of three Value Line (Std.

2   Ed.) water companies, and of 11.00% for the proxy group of fifteen utilities

3   selected on the basis of least relative distance based upon the use of multiple

4   common equity cost rate models and before any adjustment for Aqua IL's and

5   hence Oak Run's greater relative investment risk as shown on Line No. 5, page 2

6   of Aqua Schedule 3.1.

7

8   However, as discussed previously, Aqua IL - Oak Run has greater

9   investment risk than the average proxy group company because of its small size

10   vis-à-vis each proxy group, whether measured by book capitalization or the

11   market capitalization of common equity (estimated market value for Aqua IL,

12   whose common stock is not traded) and because of its lower bond rating

13   equivalent. In addition, as indicated in Company Witness Thomas J. Burosky's

14   direct testimony, the Company is experiencing a significant level of capital

15   expenditure requirements. Therefore, it is necessary to upwardly adjust the

16   10.80% and 11.00% indicated common equity cost rates based upon each proxy

17   group, respectively.

18   Based upon Aqua IL's and hence, Oak Run's small relative size, an

19   adjustment to reflect Aqua IL's smaller relative size of 2.71% (271 basis points)

20   relative to the indicated common equity cost rate of the six C.A. Turner water

21   companies, 3.03% (303 basis points) relative to the indicated common equity

22   cost rate of the three Value Line (Std. Ed.) water companies, and 5.75% (575

23   basis points) relative to the fifteen utilities are indicated. These adjustments are

24   based upon data contained in Chapter 7 entitled "Firm Size and Return" from

1   Ibbotson Associates' Stocks, Bonds, Bills and Inflation-Valuation Edition 2004

2   Yearbook. The determinations are based on the size premia for decile portfolios

3   of New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and

4   NASDAQ listed companies for the 1926-2003 period and related data shown on

5   pages 3 through 18 of Aqua Schedule 3.1. The average size premia for the

6   deciles in which the proxy groups fall have been compared to the average size

7   premia for the 9th and $10^{th}/10^{th}$ decile between/in which Aqua IL would fall if its

8   stock were traded and sold at the December 7, 2004 average market/book ratio

9   of either 233.6%, 225.7% or 188.7% experienced by each proxy group,

10   respectively. As shown on page 3 of Aqua Schedule 3.1, the size premium

11   spread between Aqua IL and the six water companies is 2.71%, between Aqua

12   IL, 3.03% between the three Value Line (Std. Ed.) water companies and Aqua IL

13   and 5.75% between Aqua IL - Oak Run and the fifteen utilities. Page 4 contains

14   notes relative to page 3. Page 5 contains data in support of page 3 while pages

15   6 through 18 of Aqua Schedule 1 contain relevant information from the Ibbotson

16   Associates' Valuation Edition 2004 Yearbook discussed previously.

17   In addition, based upon Aqua IL's NAIC 2 rating which is the equivalent of

18   Moody's Baa bond rating category as previously discussed, adjustments of

19   0.28% (28 basis points) relative to the indicated common equity cost rate of the

20   six C. A. Turner water companies, three Value Line (Std. Ed.) water companies,

21   and 0.19% (19 basis points) relative to the fifteen utilities are indicated. These

22   adjustments are based upon the average yield spread between Moody's Baa

23   rated public utility bonds and Moody's A2 and A3 public utility bonds, the average

67

1	bond ratings of the six water companies (A2), the three Value Line (Std. Ed.)
2	water companies (A2), and fifteen utilities (A3), respectively, as shown on page 2
3	of Aqua Schedule 3.14. The average yield spread between Moody's Baa rated
4	and A rated public utility bonds is 0.28% (28 basis points), and 0.19%[31] (19 basis
5	points) between Moody's A3 and Baa rated public utility bonds as shown on/or
6	can be gleaned from page 4 of Aqua Schedule 3.14. Thus, to reflect Aqua IL's
7	lower credit rating, the adjustments to the indicated common equity cost rate of
8	the proxy group of six C. A. Turner water companies and three Value Line (Std.
9	Ed.) water companies is 0.28%, or the average yield spread between Moody's
10	Baa and A rated public utility bonds. Since the average Moody's bond rating of
11	the proxy group of fifteen utilities is A3, the adjustment to its indicated common
12	equity cost rate is equal to one-third the average yield spread between the
13	average yield on Moody's Baa and A rated public utility bonds of 0.28%, or
14	0.19% (0.19% = 1/3 * 0.28%).
15	Consequently, total investment risk adjustments of 2.99% (2.99% =
16	2.71% + 0.28%), 3.31% (3.31% = 3.03% + 0.28%) and 5.94% (5.94% = 5.75% +
17	0.19%) are indicated for the six water companies, three Value Line (Std. Ed.)
18	water companies, and the fifteen utilities, respectively. However, I will make
19	conservatively reasonable investment risk adjustments of 0.30% (30 basis points)
20	to the indicated common equity cost rates of 10.80% and 11.00% for the six
21	water companies and the three Value Line (Std. Ed.) water companies,
22	respectively, and 0.50% (50 basis points) to the indicated common equity cost

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[31] One-third of the average yield spread of Baa over A rated public utility bonds of 0.28% (1/3 x 0.28% = 0.19%).

1   rates of 11.00% for the fifteen utilities.

2   Therefore, as shown on page 2 of Aqua Schedule 3.1 at Line No. 7 and

3   Table 4 above, the indicated common equity cost rates based on each proxy

4   group, including the business adjustment based upon Aqua IL - Oak Run's small

5   size are 11.10%, 11.30%, and 11.50%. My recommended common equity cost

6   rate of 11.30% is based upon the average of these cost rates. In my opinion,

7   such a cost rate is both reasonable and conservative.

8

9   Q.   Does that conclude your direct testimony?

10

11   A.   Yes.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT

AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL QUALIFICATIONS
OF
PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL EXPERIENCE

1996-Present

As a Vice President, I continue to prepare fair rate of return and cost of capital exhibits, as well as submitting testimony on same before state public utility commissions. I continue to provide assistance and support throughout the entire ratemaking litigation process.

As the Publisher of C.A. Turner Utility Reports, I am responsible for the production, publishing, and distribution of the reports. C.A. Turner Utility Reports provides financial data and related ratios for about 200 public utilities, i.e., electric, combination gas and electric, natural gas distribution, natural gas transmission, telephone, and water utilities, on a monthly, quarterly and annual basis. C.A. Turner Utility Reports has about 1,000 subscribers including utilities, many state regulatory commissions, federal agencies, individuals, brokerage firms, attorneys, as well as public and academic libraries. The publication has continuously provided financial statistics on the utility industry since 1930.

As the Publisher of C.A. Turner Utility Reports, I supervise the production, publishing, and distribution of the AGA Rate Service publications under license from the American Gas Association. I am also responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the approximately 90 corporate members of the AGA. In addition, I supervise the production of a quarterly survey of investor-owned water company rate case activity on behalf of the National Association of Water Companies.

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 C. A. Turner 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
Delaware
Florida
Hawaii
Idaho
Illinois
Indiana
Maine
Maryland

Michigan
Missouri
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.
Audubon Water Company
Carolina Pines Utilities, Inc.
Carolina Water Service, Inc.
Consumers Illinois Water Company
Consumers Maine Water Company
Consumers New Jersey Water Company
Elizabethtown Water Company
Emporium Water Company
GTE Hawaiian Telephone Inc.
Greenridge Utilities, Inc.
Long Neck Water Company
Middlesex Water Company
Missouri-American Water Company
Mt. Holly Water Company
Nero Utility Services, Inc.
New Jersey-American Water Company
Ohio-American Water Company
Pinelands Waste Water Company

Pittsburgh Thermal
Sussex Shores Water Company
Thames Water Americas
Tidewater Utilities, Inc.
Transylvania Utilities, Inc.
Twin Lakes Utilities, Inc.
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Rochelle, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Utilities, Inc. of Florida
Valley Energy, Inc.
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

Rate of Return Study Clients, Continued

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.
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.
Newco Waste Systems of NJ, Inc.
New Jersey-American Water Company
New Jersey Natural Gas 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:

Society of Utility and Regulatory Financial Analysts (serve as Secretary/Treasurer from 2004-2006)
Energy Association of Pennsylvania
National Association of Water Companies – Member of the Finance Committee

AQUA ILLINOIS, INC.

WOODHAVEN SEWER DIVISION

2004 RATE CASE

EXHIBIT 3

AQUA ILLINOIS, INC. – OAK RUN DIVISION

EXHIBIT

TO ACCOMPANY THE

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

COMMON EQUITY COST RATE

DECEMBER 2004

Aqua Illinois, Inc. – Oak Run Division
Table of Contents
to Aqua Water Exhibit No. 3.0
of Pauline M. Ahern

Aqua Illinois, Inc. - Oak Run Division
Summary of Cost of Capital and Fair Rate of Return
Based upon an Average Capital Structure Estimated for the Test Year Ended December 31, 2005

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	47.90 %	7.19 % (1)	3.446 % (1)
Short-Term Debt	0.38	3.07 (1)	0.012 (1)
Total Debt	48.28		3.458
Preferred Stock	0.32	5.48 (1)	0.018 (1)
Common Equity	51.39	11.30 (2)	5.807
Total	99.99 % (3)		9.283 %

Notes:

(1) From Schedule D -1, page 1.

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

(3) Does not add due to rounding.

Aqua Illinois, Inc. - Oak Run Division
Brief Summary of Common Equity Cost Rate

No.	Principal Methods	Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
1.	Discounted Cash Flow Model (DCF) (1)	10.6 %	11.0 %	10.8 %
2.	Risk Premium Model (RPM) (2)	10.6	10.8	10.9
3.	Capital Asset Pricing Model (CAPM) (3)	10.0	10.3	10.3
4.	Comparable Earnings Model (CEM) (4)	14.2	14.0	13.8
5.	Indicated Common Equity Cost Rate before Adjustment for Investment Risk	10.80 %	11.00 %	11.00 %
6.	Investment Risk Adjustment (5)	0.30	0.30	0.50
7.	Indicated Common Equity Cost Rate after Adjustment for Investment Risk	11.10 %	11.30 %	11.50 %
8.	Average		11.30%	
9.	Recommendation		11.30%	

Notes: (1) From Aqua Schedule 3.8.
     (2) From page 1 of Aqua Schedule 3.14.
     (3) From page Aqua Schedule 3.15.
     (4) From page 2, 4 and 6 of Aqua Schedule 3.16.
     (5) Investment risk adjustment to reflect Aqua IL's greater investment risk due to its small size and lower credit rating vis-à-vis each proxy group as detailed in Ms. Ahern's direct testimony.

Aqua Illinois, Inc. - Oak Run Division
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

	1		2		3	4	5
Line No.	Total Capitalization (incl. Short-Term Debt) for the Year 2003		Market Capitalization on December 7, 2004 (1)		Applicable Decile of the NYSE/AMEX/ NASDAQ	Applicable Size Premium	Spread from Applicable Size Premium (2)
	(millions)	(times larger)	(millions)	(times larger)			
1. Aqua Illinois, Inc.	$ 112.954 (3)						
A. Based upon the Proxy Group of Six C. A. Turner Water Companies			$ 136.749		9 - 10 (4)	4.62% (5)	
B. Based upon the Proxy Group of Three Value Line (Standard Edition) Water Companies			$ 132.125		9 - 10 (4)	4.62% (5)	
C. Based upon the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			$ 110.465		10 (4)	6.34% (6)	
2. Proxy Group of Six C. A. Turner Water Companies	$ 502.690 (7)	4.5 x	$ 605.425	4.4 x	7 - 8 (8)	1.91% (9)	2.71%
3. Proxy Group of Three Value Line (Standard Edition) Water Companies	$ 865.130 (10)	7.7	$ 1,054.633	8.0	6 (11)	1.59% (12)	3.03%
4. Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	$ 6,719.260 (13)	59.5	$ 5,517.271	49.9	2 - 3 (14)	0.59% (15)	5.75%

Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market (millions)
1 - Largest	168	$7,419,638.030	$44,164.512
2	186	1,471,629.952	7,911.989
3	198	746,716.927	3,771.298
4	200	451,145.013	2,255.725
5	221	337,041.577	1,525.075
6	277	290,452.647	1,048.566
7	343	238,327.258	694.832
8	379	171,437.318	452.341
9	613	168,889.652	275.513
10 - Smallest	1724	136,028.242	78.903

See page 4 for notes.

<u>Aqua Illinois, Inc. – Oak Run Division</u>
Derivation of Investment Risk Adjustment Based upon
<u>Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE</u>

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 2.71% in Column 5, Line No. 2 is derived as follows 2.71% = 4.62% - 1.91%.

(3)   From page 1 of Aqua Schedule 3.3.

(4)   With an estimated market capitalization of $136.749 million (based upon the proxy group of six C. A. Turner water companies), $132.125 (based upon the proxy group of three Value Line (Standard Edition) water companies), $110.465 (based upon the proxy group of fifteen utilities selected on the basis of least relative distance), Aqua Illinois, Inc. falls between the 9th and 10th deciles or in the 10th decile of the NYSE/AMEX/NASDAQ which have average market capitalizations of $177.208 million and $78.903 as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule

(5)   Average size premium applicable to the 9th and 10th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(6)   Size premium applicable to the 10th decile of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(7)   From page 1 of Aqua Schedule 3.4.

(8)   With an estimated market capitalization of $605.425 million, the proxy group of six C. A. Turner water companies falls between the 7th and 8th deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $573.587 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(9)   Average size premium applicable to the 7th and 8th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(10)   From page 1 of Aqua Schedule 3.5.

(11)   With an estimated market capitalization of $1,054.633 million, the proxy group of three Value Line (Standard Edition) water companies falls in the 6th decile of the NYSE/AMEX/NASDAQ which has an average market capitalization of $1,048.566 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(12)   Size premium applicable to the 6th decile of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

(13)   With an estimated market capitalization of $5,517.271 million, the proxy group fifteen utilities selected on the basis of least relative distance falls between the 2nd and 3rd deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $5,841.644 million as shown in the table on the bottom half of page 3 of this Schedule.

(14)   Average size premium applicable to the 2nd and 3rd deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

Source of Information: Ibbotson Associates, <u>Stocks, Bonds, Bills and Inflation – Valuation Edition – 2003 Yearbook,</u>
       Chicago, IL, 2003

Aqua Illinois — Oak Run Division
Market Capitalization of Aqua Illinois, Inc.
the Proxy Group of Six C. A. Turner Water Companies and the
the Proxy Group of Three Value Line (Standard (Edition) Water Companies and the
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Company	1 Common Stock Shares Outstanding at September 30, 2004 (millions)	2 Book Value per Share at September 30, 2004 (1)	3 Total Common Equity at September 30, 2004 (millions)	4 Closing Stock Market Price on December 7, 2004	5 Market-to-Book Ratio at December 7, 2004 (2)	6 Market Capitalization on December 7, 2004 (3) (millions)
Aqua Illinois, Inc.	0.750 (4) $	78.053	$ 58.540 (5)	NA		
Based upon the Proxy Group of Six C. A. Turner Water Companies					233.6 % (6)	$ 136.749 (7)
Based upon the Proxy Group of Three Value Line (Standard Edition) Water					225.7 % (8)	$ 132.125 (9)
Based upon the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					188.7 % (10)	$ 110.465 (10)
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.	15.318	$ 16.602	$ 254.303	$ 24.260	146.1 %	$ 371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.616
Artesian Resources Corp.	3.944	13.764	54.245	29.190	212.2	115.125
California Water Service Group	18.345	15.746	288.882	33.070	210.0	606.669
Middlesex Water Company	11.327	8.345	94.529	19.480	233.4	220.650
York Water Company	6.674	6.925	47.601	19.350	279.1	132.674
Average	24.842	$ 11.448	$ 236.791	$ 24.795	233.6 %	$ 605.426
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.	$ 15.318	$ 16.602	$ 254.303	$ 24.260	146.1 %	$ 371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.616
California Water Service Group	18.345	15.746	288.882	33.070	210.0	606.669
	$ 42.302	$ 13.218	$ 408.124	$ 26.923	225.7 %	$ 1,054.633
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
AGL Resources, Inc.	66.363	$ 16.651	$ 1,023.000	$ 32.480	207.5 %	$ 2,122.990
American States Water Co.	15.318	16.602	254.303	24.260	146.1	371.615
Aqua America, Inc.	93.243	7.306	681.206	23.440	320.8	2,185.616
California Water Services Group	18.345	15.746	288.882	33.070	210.0	606.669
Cinergy Corp.	180.896	20.890	3,780.939	41.840	199.3	7,536.673
Consolidated Edison, Inc.	241.326	29.479	7,114.000	43.730	148.3	10,653.198
Dominion Resources, Inc.	331.440	31.764	10,528.000	66.500	209.4	22,040.760
Green Mountain Power Corp.	5.930	18.105	107.360	26.800	148.0	158.924
KeySpan Corp.	160.357	23.324	3,740.232	38.260	164.1	6,139.466
Middlesex Water Company	11.327	8.345	94.529	19.480	233.4	220.650
Northwest Natural Gas Co.	27.373	20.032	548.324	32.230	160.9	882.232
Pinnacle West Capital Corp.	91.318	32.699	2,976.763	43.570	133.7	3,978.726
PNM Resources, Inc.	60.422	18.387	1,111.001	25.440	138.4	1,537.136
Southern Company	739.897	13.927	10,301.410	32.720	234.9	24,202.859
Southwest Water Company	17.303	7.307	126.426	12.880	176.3	222.863
Average	137.317	$ 18.631	$ 2,845.090	$ 35.101	188.7 %	$ 5,517.271

NA = Not Available

Notes:
(1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) From Schedule D - 7, page 2.
(5) From WP-D1, at September 30, 2004.
(6) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of six C. A. Turner Water Companies.
(7) Aqua Illinois, Inc.'s common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of six C. A. Turner water companies, 233.6%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $136.749 million. ($136.749 = $58.540 * 233.6%).
(8) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of three Value Line (Standard Edition) water companies.
(9) Aqua Illinois, Inc. common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of three Value Line (Standard Edition) water companies, 225.7%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $132.125 million. ($132.125 = $58.540 * 225.7%).
(10) The market-to-book ratio of Aqua Illinois, Inc. at December 7, 2004 is assumed to be equal to the average market-to-book ratio at December 7, 2004 of the proxy group of fifteen utilities selected on the basis of least relative distance.
(11) Aqua Illinois, Inc. common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at December 7, 2004 of the proxy group of fifteen utilities selected on the basis of least relative distance, 188.7%, and Aqua Illinois' market capitalization at December 7, 2004 would therefore have been $110.465 million. ($110.465 = $58.540 * 188.7%).

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Data Base

Stocks, Bonds, Bills
and Inflation

SBBI

Valuation Edition
2004 Yearbook

IbbotsonAssociates

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. Approximately two-thirds of the market value is represented by the first decile, which currently consists of 168 stocks, while the smallest decile accounts for just over one percent of the market value. The data in the second column of Table 7-1 are averages across all

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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.

78 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 2003.

Table 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926-2003

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Recent Percentage of Total Capitalization
1-Largest	63.33%	168	$7,419,638,030	64.91%
2	13.99%	186	1,471,629,952	12.87%
3	7.57%	198	746,716,927	6.53%
4	4.74%	200	451,145,013	3.95%
5	3.24%	221	337,041,577	2.95%
6	2.37%	277	290,452,647	2.54%
7	1.72%	343	238,327,258	2.08%
8	1.27%	379	171,437,318	1.50%
9	0.97%	613	168,889,652	1.48%
10-Smallest	0.80%	1,724	136,028,242	1.19%
Mid-Cap 3-5	15.55%	619	1,534,903,517	13.43%
Low-Cap 6-8	5.36%	999	700,217,223	6.13%
Micro-Cap 9-10	1.77%	2,337	304,917,894	2.67%

Source: © 200403 CRSP® Center for Research in Security Prices. Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. www.crsp.uchicago.edu.

Historical average percentage of total capitalization shows the average, over the last 78 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, 2003.

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 $4,794,027,000 but greater than $1,166,799,000. Low-cap stocks include deciles 6-8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $1,166,799,000 but greater than $330,608,000. Micro-cap stocks include deciles 9-10 and include companies with market capitalizations at or below $330,608,000. The market capitalization of the smallest company included in the micro-capitalization group is currently $332 thousand.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company
and Its Market Capitalization by Decile
September 30, 2003

Decile	Market Capitalization of Largest Company (in thousands)	Company Name
1-Largest	$286,638,305	General Electric Co.
2	11,366,767	Masco Corp.
3	4,794,027	EOG Resources Inc.
4	2,585,984	Toys R Us Inc.
5	1,720,959	International Rectifier Corp.
6	1,166,799	Thor Industries Inc.
7	795,983	Granite Construction Inc.
8	507,820	Steelcase Inc.
9	330,608	Sterling Bancorp
10-Smallest	166,414	Ethyl Corp.

Source: Center for Research in Security Prices, University of Chicago.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2003 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 two 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 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. 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 to 1965

Date (Sept 30)	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
	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	$61,490	$14,040	$4,305	$14,100	$4,325	$43
1927	$65,281	$14,746	$4,450	$15,311	$4,496	$72
1928	$81,998	$18,975	$5,074	$19,050	$5,119	$135
1929	$107,085	$24,328	$5,875	$24,480	$5,915	$126
1930	$67,808	$13,050	$3,219	$13,068	$3,264	$30
1931	$42,607	$8,142	$1,905	$8,222	$1,927	$15
1932	$12,431	$2,170	$473	$2,196	$477	$19
1933	$40,298	$7,210	$1,830	$7,280	$1,875	$100
1934	$38,129	$6,669	$1,669	$6,734	$1,673	$68
1935	$37,631	$6,519	$1,350	$6,549	$1,383	$38
1936	$46,920	$11,505	$2,660	$11,528	$2,668	$98
1937	$51,750	$13,601	$3,500	$13,635	$3,539	$68
1938	$38,102	$8,325	$2,125	$8,372	$2,145	$60
1939	$35,784	$7,367	$1,697	$7,389	$1,800	$75
1940	$31,050	$7,990	$1,861	$8,007	$1,872	$51
1941	$31,744	$8,316	$2,086	$8,336	$2,087	$72
1942	$26,135	$6,870	$1,779	$6,875	$1,788	$82
1943	$43,218	$11,475	$3,847	$11,480	$3,903	$395
1944	$46,621	$13,066	$4,800	$13,068	$4,812	$309
1945	$55,268	$17,325	$6,413	$17,575	$6,428	$225
1946	$79,158	$24,192	$10,013	$24,199	$10,051	$829
1947	$57,830	$17,735	$6,373	$17,872	$6,380	$747
1948	$67,238	$19,575	$7,313	$19,651	$7,329	$784
1949	$55,506	$14,549	$5,037	$14,577	$5,108	$379
1950	$65,881	$18,675	$6,176	$18,750	$6,201	$303
1951	$82,517	$22,750	$7,567	$22,860	$7,598	$668
1952	$97,936	$25,452	$8,428	$25,532	$8,480	$480
1953	$98,595	$25,374	$8,156	$25,395	$8,168	$459
1954	$125,834	$29,645	$8,484	$29,707	$8,488	$463
1955	$170,829	$41,445	$12,353	$41,681	$12,366	$553
1956	$183,434	$46,805	$13,481	$46,886	$13,524	$1,122
1957	$192,861	$47,658	$13,844	$48,509	$13,848	$925
1958	$195,083	$46,774	$13,789	$46,871	$13,816	$550
1959	$253,644	$64,221	$19,500	$64,372	$19,548	$1,804
1960	$246,202	$61,485	$19,344	$61,529	$19,385	$831
1961	$296,261	$79,058	$23,562	$79,422	$23,613	$2,455
1962	$250,433	$58,866	$18,952	$59,143	$18,968	$1,018
1963	$308,438	$71,846	$23,819	$71,971	$23,822	$298
1964	$344,033	$79,343	$25,594	$79,508	$25,595	$223
1965	$363,759	$84,479	$28,365	$84,600	$28,375	$250

Source: Center for Research in Security Prices, University of Chicago.

Firm Size and Return

Table 7-3 (continued)

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

from 1966 to 2003

Date (Sept 30)	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
	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	$399,455	$99,578	$34,884	$99,935	$34,968	$381
1967	$459,170	$117,985	$42,267	$118,329	$42,313	$381
1968	$528,326	$149,261	$60,351	$150,128	$60,397	$592
1969	$517,452	$144,770	$54,273	$145,684	$54,280	$2,119
1970	$380,246	$94,025	$29,910	$94,047	$29,916	$822
1971	$542,517	$145,340	$45,571	$145,673	$45,589	$865
1972	$545,211	$139,647	$46,728	$139,710	$46,757	$1,031
1973	$424,584	$94,809	$29,601	$95,378	$29,608	$561
1974	$344,013	$75,272	$22,475	$75,853	$22,481	$444
1975	$465,763	$96,954	$28,140	$97,266	$28,144	$540
1976	$551,071	$116,184	$31,987	$116,212	$32,002	$564
1977	$573,084	$135,804	$39,192	$137,323	$39,254	$513
1978	$572,967	$159,778	$46,621	$160,524	$46,629	$830
1979	$661,336	$174,480	$49,088	$174,517	$49,172	$948
1980	$754,562	$194,012	$48,671	$194,241	$48,953	$549
1981	$954,665	$259,028	$71,276	$261,059	$71,289	$1,446
1982	$762,028	$205,590	$54,675	$206,536	$54,883	$1,060
1983	$1,200,680	$352,698	$103,443	$352,944	$103,530	$2,025
1984	$1,068,972	$314,650	$90,419	$315,214	$90,659	$2,093
1985	$1,432,342	$367,413	$93,810	$368,249	$94,000	$760
1986	$1,857,621	$444,827	$109,958	$445,648	$109,975	$706
1987	$2,059,143	$467,430	$112,035	$468,948	$112,125	$1,277
1988	$1,957,926	$420,257	$94,268	$421,340	$94,302	$896
1989	$2,147,608	$480,975	$100,285	$483,823	$100,384	$96
1990	$2,164,185	$472,003	$93,627	$474,065	$93,750	$132
1991	$2,129,863	$457,958	$87,586	$458,853	$87,733	$278
1992	$2,428,671	$500,348	$103,352	$501,050	$103,500	$510
1993	$2,711,068	$608,520	$137,945	$608,825	$137,987	$602
1994	$2,497,073	$601,552	$149,435	$602,552	$149,532	$598
1995	$2,793,761	$653,178	$158,011	$654,019	$158,063	$89
1996	$3,150,685	$763,377	$195,188	$763,812	$195,326	$1,043
1997	$3,511,132	$818,299	$230,472	$821,028	$230,554	$480
1998	$4,216,707	$934,264	$253,329	$936,727	$253,338	$1,671
1999	$4,251,741	$875,309	$218,336	$875,582	$218,368	$1,502
2000	$4,143,902	$840,000	$192,598	$840,730	$192,721	$1,462
2001	$5,252,063	$1,114,792	$269,275	$1,115,200	$270,391	$443
2002	$5,012,705	$1,143,845	$314,042	$1,144,452	$314,174	$501
2003	$4,794,027	$1,166,799	$330,608	$1,167,040	$330,797	$332

Source: Center for Research in Security Prices, University of Chicago.

Table 7-4

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns
1926-2003

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.6%	11.4%	19.40%	0.09
2	10.8	13.2	22.12	0.03
3	11.2	13.8	24.00	-0.02
4	11.4	14.4	26.31	-0.02
5	11.5	14.9	27.18	-0.02
6	11.7	15.3	28.12	0.03
7	11.5	15.6	30.41	0.01
8	11.7	16.6	33.90	0.04
9	12.1	17.8	37.08	0.06
10-Smallest	13.9	21.7	45.95	0.15
Mid-Cap, 3-5	11.3	14.2	25.10	-0.02
Low-Cap, 6-8	11.7	15.7	29.88	0.03
Micro-Cap, 9-10	12.7	19.0	39.65	0.08
NYSE/AMEX/NASDAQ Total Value-Weighted Index	10.1	12.1	20.46	0.03

Source: Center for Research in Security Prices, University of Chicago.

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.

Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks
1925–2003
Year-end 1925 = $1.00

Year-end

Source: Center for Research in Security Prices, University of Chicago.

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 78 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 explainable 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 78-year arithmetic mean return on large company stocks, 12.41 percent, less the 78-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5.23 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 2003. 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
1926–2003

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	11.43%	6.21%	6.54%	-0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.91%	9.68%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.76%	12.53%	9.63%	2.90%
10-Smallest	1.41	21.73%	16.50%	10.16%	6.34%
Mid-Cap, 3-5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6-8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9-10	1.36	18.98%	13.75%	9.74%	4.01%

*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 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds (5.23 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 (12.41 percent) minus the arithmetic mean income return component of 20-year government bonds (5.23 percent from 1926–2003).

Graph 7-2
Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2003

Source: Center for Research in Security Prices, University of Chicago (decile data).

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, 2003

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	554	$75,931,424	$166,414	Ethyl Corp.
10b	1,158	$54,857,824	$95,928	Mesa Royalty Trust

Note: These numbers may not aggregate to equal decile 10 figures.
Source: Center for Research in Security Prices, University of Chicago.

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Table 7-7

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the
NYSE/AMEX/NASDAQ, with 10th Decile Split
1926–2003

	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	11.43%	6.21%	6.54%	−0.34%
2	1.04	13.16%	7.94%	7.44%	0.50%
3	1.10	13.78%	8.55%	7.88%	0.67%
4	1.13	14.43%	9.20%	8.09%	1.11%
5	1.16	14.91%	9.68%	8.32%	1.36%
6	1.18	15.32%	10.09%	8.50%	1.59%
7	1.23	15.65%	10.42%	8.85%	1.57%
8	1.28	16.64%	11.42%	9.16%	2.25%
9	1.34	17.76%	12.53%	9.63%	2.90%
10a	1.42	19.93%	14.70%	10.20%	4.50%
10b-Smallest	1.40	25.08%	19.85%	10.03%	9.82%
Mid-Cap, 3–5	1.12	14.16%	8.93%	8.02%	0.91%
Low-Cap, 6–8	1.22	15.67%	10.44%	8.74%	1.70%
Micro-Cap, 9–10	1.36	18.98%	13.75%	9.74%	4.01%

*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 2003.

**Historical riskless rate is measured by the 78-year arithmetic mean income return component of 20-year government bonds
(5.23 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 (12.41 percent) minus the arithmetic mean income return component of 20-year
government bonds (5.23 percent) from 1926–2003.

Graph 7-3

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926–2003

Source: Center for Research in Security Prices, University of Chicago (decile data).
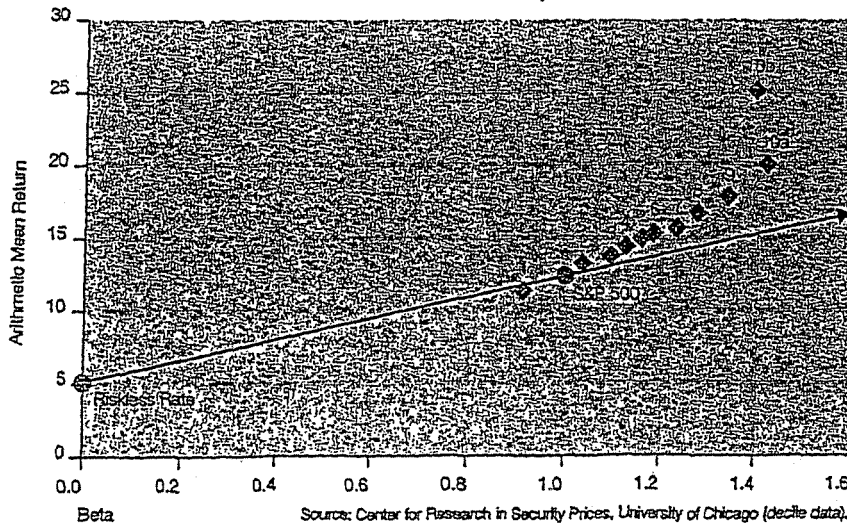
Table 7-8

Historical Number of Companies for NYSE/AMEX/NASDAQ Decile 10

Sept.	Number of Companies
1926	52*
1930	72
1940	78
1950	100
1960	109
1970	865
1980	685
1990	1,814
2000	1,927
2003	1,724

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

Source: Center for Research in Security Prices, University of Chicago.

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, 1926–2003, 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 6.40, as opposed to 7.19 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.

Utilities credit analysis factors

Business risk
- Markets and service area economy
- Competitive position
- Operations
- Regulation
- Management
- Fuel, power, and water supply
- Asset concentration

Financial risk
- Earnings protection
- Capital structure
- Cash flow adequacy
- Financial flexibility/capital attraction

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 unemploy-

ment—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-

fly 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 bal-

ance 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 auger 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 experi-

ence. 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 effect 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/lease-back 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.

Standard & Poor's

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Feature Article

New Business Profile Scores Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised

Standard & Poor's Ratings Services has assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. Standard & Poor's also has revised its published risk-adjusted financial guidelines. The new business scores and financial guidelines do not represent a change to Standard & Poor's ratings criteria or methodology, and no ratings changes are anticipated from the new business profile scores or revised financial guidelines.

New Business Profile Scores and Revised Financial Guidelines

Standard & Poor's has always monitored changes in the industry and altered its business risk assessments accordingly. This is the first time since the 10-point business profile scale for U.S. investor-owned utilities was implemented that a comprehensive assessment of the benefits and the application of the methodology has been made. The principal purpose was to determine if the methodology continues to provide meaningful differentiation of business risk. The review indicated that while business profile scoring continues to provide analytical benefits, the complete range of the 10-point scale was not being utilized to the fullest extent.

Standard & Poor's has also revised the key financial guidelines that it uses as an integral part of evaluating the credit quality of U.S. utility and power companies. These guidelines were last updated in June 1999. The financial guidelines for three principal ratios (funds from operations (FFO) interest coverage, FFO to total debt, and total debt to total capital) have been broadened so as to be more flexible. Pretax interest cov-

Chart 1
Distribution of Business Profile Scores

New Business Profile Score

Chart 2
Transmission and Distribution—Water, Gas, and Electric

Business Profile Score

Feature Article

erage as a key credit ratio was eliminated.

Finally, Standard & Poor's has segmented the utility and power industry into sub-sectors based on the dominant corporate strategy that a company is pursuing. Standard & Poor's has published a new U.S. utility and power company ranking list that reflects these sub-sectors.

There are numerous benefits to the reassessment. Fuller utilization of the entire 10-point scale provides a superior relative ranking of qualitative business risk. A revision of the financial guidelines supports the goal of not causing rating changes from the recalibration of the business profiles. Classification of companies by sub-sectors will ensure greater comparability and consistency in ratings. The use of industry segmentation will also allow more in-depth statistical analysis of ratings distributions and rating changes.

The reassessment does not represent a change to Standard & Poor's criteria or methodology for determining ratings for utility and power companies. Each business profile score should be considered as the assignment of a new score; these scores do not represent improvement or deteri-

oration in our assessment of an individual company's business risk relative to the previously assigned score. The financial guidelines continue to be risk-adjusted based on historical utility and industrial medians. Segmentation into industry sub-sectors does not imply that specific company characteristics will not weigh heavily into the assignment of a company's business profile score.

Results

Previously, 83% of U.S. utility and power business profile scores fell between '3' and '6', which clearly does not reflect the risk differentiation that exists in the utility and power industry today. Since the 10-point scale was introduced, the industry has transformed into a much less homogenous industry, where the divergence of business risk—particularly regarding management, strategy, and degree of competitive market exposure—has created a much wider spectrum of risk profiles. Yet over the same period, business profile scores actually converged more tightly around a median score of '4'. The new business pro-

Chart 3

Transmission Only—Electric, Gas, and Other

Business Profile Score

Chart 4

Integrated Electric, Gas, and Combination Utilities

Business Profile Score

Feature Article

file scores, as of June 2, are shown in Chart 1. The overall median business profile score is now '5'.

Table 1 contains the revised financial guidelines. It is important to emphasize that these metrics are only guidelines associated with expectations for various rating levels. Although credit ratio analysis is an important part of the ratings process, these three statistics are by no means the only critical financial measures that Standard & Poor's uses in its analytical process. We also analyze a wide array of financial ratios that do not have published guidelines for each rating category.

Again, ratings analysis is not driven solely by these financial ratios, nor has it ever been. In fact, the new financial guidelines that Standard & Poor's is incorporating for the specified rating categories reinforce the analytical framework whereby other factors can outweigh the achievement of otherwise acceptable financial ratios. These factors include:
- Effectiveness of liability and liquidity management;
- Analysis of internal funding sources;

- Return on invested capital;
- The execution record of stated business strategies;
- Accuracy of projected performance versus actual results, as well as the trend;
- Assessment of management's financial policies and attitude toward credit; and
- Corporate governance practices.

Charts 2 through 6 show business profile scores broken out by industry sub-sector. The five industry sub-sectors are:
- Transmission and distribution—Water, gas, and electric;
- Transmission only—Electric, gas, and other;
- Integrated electric, gas, and combination utilities;
- Diversified energy and diversified nonenergy; and
- Energy merchant/power developer/trading and marketing companies.

The average business profile scores for transmission and distribution companies and transmission-only companies are lower on the scale than the previous averages, while the average business profile scores for integrated utilities, diversified energy, and energy merchants and developers are higher.

Chart 5
Diversified Energy and Diversified Non-Energy

Business Profile Score

Chart 6
Energy Merchant/Developers/Trading and Marketing

Business Profile Scores

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See pages 16 to 19 for the company ranking list of business profile scores segmented by industry sub-sector and ranked in order of credit rating, outlook, business profile score, and relative strength.

Business Profile Score Methodology

Standard & Poor's methodology of determining corporate utility business risk is anchored in the assessment of certain specific characteristics that define the sector. We assign business profile scores to each of the rated companies in the utility and power sector on a 10-point scale, where '1' represents the lowest risk and '10' the highest risk. Business pro-

file scores are assigned to all rated utility and power companies, whether they are holding companies, subsidiaries, or stand-alone corporations. For operating subsidiaries and stand-alone companies, the score is a bottom-up assessment. Scores for families of companies are a composite of the operating subsidiaries' scores. The actual credit rating of a company is analyzed, in part, by comparing the business profile score with the risk-adjusted financial guidelines.

For most companies, business profile scores are assessed using five categories; specifically, regulation, markets, operations, competitiveness, and management. The emphasis placed on each category may be influenced by the

Table 1

Revised Financial Guidelines

Funds from operations/interest coverage (x)

Business Profile	AA		A		BBB		BB	
1	3	2.5	2.5	1.5	1.5	1		
2	4	3	3	2	2	1		
3	4.5	3.5	3.5	2.5	2.5	1.5	1.5	1
4	5	4.2	4.2	3.5	3.5	2.5	2.5	1.5
5	5.5	4.5	4.5	3.8	3.8	2.8	2.8	1.8
6	6	5.2	5.2	4.2	4.2	3	3	2
7	8	6.5	6.5	4.5	4.5	3.2	3.2	2.2
8	10	7.5	7.5	5.5	5.5	3.5	3.5	2.5
9			10	7	7	4	4	2.8
10			11	8	8	5	5	3

Funds from operation/total debt (%)

Business Profile	AA		A		BBB		BB	
1	20	15	15	10	10	5		
2	25	20	20	12	12	8		
3	30	25	25	15	15	10	10	5
4	35	28	28	20	20	12	12	8
5	40	30	30	22	22	15	15	10
6	45	35	35	28	28	18	18	12
7	55	45	45	30	30	20	20	15
8	70	55	55	40	40	25	25	15
9			65	45	45	30	30	20
10			70	55	55	40	40	25

Total debt/total capital (%)

Business Profile	AA		A		BBB		BB	
1	48	55	55	60	60	70		
2	45	52	52	58	58	68		
3	42	50	50	55	55	65	65	70
4	38	45	45	52	52	62	62	68
5	35	42	42	50	50	60	60	65
6	32	40	40	48	48	58	58	62
7	30	38	38	45	45	55	55	60
8	25	35	35	42	42	52	52	58
9			32	40	40	50	50	55
10			25	35	35	48	48	52

Feature Article

dominant strategy of the company or other factors. For example, for a regulated transmission and distribution company, regulation may account for 30% to 40% of the business profile score because regulation can be the single-most important credit driver for this type of company. Conversely, competition, which may not exist for a transmission and distribution company, would provide a much lower proportion (e.g., 5% to 15%) of the business profile score.

For certain types of companies, such as power generators, power developers, oil and gas exploration and production companies, or nonenergy-related holdings, where these five components may not be appropriate, Standard & Poor's will use other, more appropriate methodologies. Some of these companies are assigned business profile scores that are useful only for relative ranking purposes.

As noted above, the business profile score for a parent or holding company is a composite of the business profile scores of its individual subsidiary companies. Again, Standard & Poor's does not apply rigid guidelines for deter-

mining the proportion or weighting that each subsidiary represents in the overall business profile score. Instead, it is determined based on a number of factors. Standard & Poor's will analyze each subsidiary's contribution to FFO, forecast capital expenditures, liquidity requirements, and other parameters, including the extent to which one subsidiary has higher growth. The weighting is determined case-by-case. ∎

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AQUA ILLINOIS, INC. (4)
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1998 - 2002, INCLUSIVE
(MILLIONS OF DOLLARS)

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$111.856	$89.241	$89.148	$85.213	$75.740	
SHORT-TERM DEBT	1.098	11.505	5.250	5.700	2.500	
TOTAL-CAPITAL EMPLOYED	$112.954	$100.746	$94.398	$90.913	$78.240	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.63 %	7.01 %	7.83 %	7.94 %	8.13 %	
PREFERRED DEBT	0.00	5.38	5.50	5.50	5.50	
DIVIDEND PAYOUT RATIO	22.86 %	102.61 %	135.34 %	0.00 %	90.77 %	70.32 %
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	49.87 %	47.96 %	48.03 %	46.92 %	49.37 %	48.43 %
PREFERRED STOCK	0.34	0.43	0.45	0.47	0.53	0.44
COMMON EQUITY	49.79	51.61	51.52	52.61	50.10	51.13
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	50.36 %	53.91 %	50.92 %	50.24 %	50.98 %	51.28 %
MINORITY INTEREST	0.34	0.38	0.42	0.44	0.51	0.42
COMMON EQUITY	49.30	45.71	48.66	49.32	48.51	48.30
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
RATE OF RETURN ON AVERAGE COMMON EQUITY	9.38 %	10.79 %	9.37 %	9.13 %	10.23 %	9.78 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE(2)	3.99 x	4.18 x	3.60 x	4.06 x	3.41 x	3.85 x
FUNDS FROM OPERATIONS / TOTAL DEBT(3)	18.41 %	21.00 %	19.83 %	22.80 %	19.39 %	20.49 %
TOTAL DEBT / TOTAL CAPITAL	50.36 %	53.91 %	50.92 %	50.24 %	50.88 %	51.28 %

SEE PAGE 2 FOR NOTES.

Aqua Illinois, Inc.
Capitalization and Financial Statistics
1999-2003, Inclusive

Notes:

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

(2) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(3) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Source of Information: Aqua Illinois, Inc. and Consumers Illinois Water Company Annual Reports to the Illinois Commerce Commission

PROXY GROUP OF SIX C. A. TURNER WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001 (MILLIONS OF DOLLARS)	2000	1999	5 YEAR AVERAGE
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$470.63	$407.79	$375.00	$331.41	$292.07	
SHORT-TERM DEBT	$32.07	$35.13	$30.67	$26.75	$24.88	
TOTAL CAPITAL EMPLOYED	$502.69	$442.92	$405.67	$358.16	$316.95	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.02 %	6.27 %	6.84 %	7.42 %	7.64 %	
PREFERRED STOCK	3.98	5.73	5.31	5.20	5.40	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.07 %	54.19 %	54.26 %	52.09 %	51.27 %	53.18 %
PREFERRED STOCK	0.49	0.57	0.76	0.88	0.98	0.74
COMMON EQUITY	45.44	45.24	44.98	47.03	47.75	46.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %
PREFERRED STOCK	0.47	0.52	0.70	0.84	0.93	0.69
COMMON EQUITY	42.26	42.29	41.66	44.27	44.95	43.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.85 %	4.90 %	4.82 %	5.33 %	5.25 %	4.85 %
MARKET / AVERAGE BOOK RATIO	232.50	221.41	215.22	191.35	204.41	212.98
DIVIDEND YIELD	3.28	3.63	3.81	4.26	4.02	3.80
DIVIDEND PAYOUT RATIO	87.80	74.83	79.40	83.28	75.53	80.17
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.97 %	10.58 %	10.35 %	10.09 %	10.82 %	10.16 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.38 x	3.37 x	3.27 x	3.10 x	3.20 x	3.26 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	13.57 %	14.00 %	14.07 %	14.60 %	15.57 %	14.36 %
TOTAL DEBT / TOTAL CAPITAL	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %

See Page 2 for notes.

<u>Proxy Group of Six C. A. Turner Water Companies</u>
Capitalization and Financial Statistics
<u>1999-2003, Inclusive</u>

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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) 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 C. A. Turner Public Utility Reports (December 2004); 2) which have Value Line (Standard Edition) five-year EPS growth rate projections or Thomson FN / First Call consensus five-year EPS growth rate projections; and 3) which have more than 70% of their 2003 operating revenues derived from water operations.

The following six water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
Artesian Resources, Inc.
California Water Service Group
Middlesex Water Company
York Water Co.

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

Capital Structure Based upon Total Capital for
the Proxy Group of Six C. A. Turner Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Artesian Resources Corp.						
Long-Term Debt	54.83 %	53.82 %	49.44 %	58.71 %	46.49 %	52.66 %
Short-Term Debt	9.39	3.24	16.68	3.65	10.69	8.73
Preferred Stock	0.00	0.17	0.56	0.76	1.00	0.50
Common Equity	35.78	42.77	33.32	36.88	41.82	38.11
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	50.57 %	47.29 %	49.70 %	50.48 %	51.88 %	49.98 %
Short-Term Debt	6.42	9.47	7.43	3.71	1.26	5.66
Preferred Stock	2.09	2.18	2.28	2.49	2.55	2.32
Common Equity	40.92	41.06	40.59	43.32	44.31	42.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	41.40 %	45.00 %	46.35 %	48.29 %	50.41 %	46.29 %
Short-Term Debt	9.07	3.77	2.83	3.90	2.20	4.35
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	49.53	51.23	50.82	47.81	47.39	49.36
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Six C. A. Turner Water Companies						
Long-Term Debt	50.22 %	50.60 %	50.04 %	49.14 %	48.21 %	49.64 %
Short-Term Debt	7.05	6.59	7.60	5.75	5.91	6.58
Preferred Stock	0.47	0.52	0.70	0.84	0.93	0.69
Common Equity	42.26	42.29	41.66	44.27	44.95	43.09
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

PROXY GROUP OF THREE VALUE LINE (STANDARD EDITION) WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE
(MILLIONS OF DOLLARS)

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$812.16	$697.46	$643.70	$560.38	$487.73	
SHORT-TERM DEBT	$52.97	$62.16	$50.56	$49.53	$45.89	
TOTAL CAPITAL EMPLOYED	$865.13	$759.62	$694.26	$609.91	$533.62	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	6.04 %	6.66 %	7.44 %	8.00 %	
PREFERRED STOCK	2.83	3.84	4.03	3.76	3.90	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.78 %	56.84 %	54.95 %	49.65 %	50.50 %	53.34 %
PREFERRED STOCK	0.24	0.28	0.47	0.63	0.72	0.47
COMMON EQUITY	44.98	42.88	44.58	49.72	48.78	46.19
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %
PREFERRED STOCK	0.24	0.25	0.44	0.59	0.68	0.44
COMMON EQUITY	42.45	39.57	41.75	45.88	45.39	43.01
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.89 %	5.17 %	4.70 %	5.47 %	5.00 %	4.85 %
MARKET / AVERAGE BOOK RATIO	225.26	217.33	225.22	206.93	221.95	219.34
DIVIDEND YIELD	3.32	3.63	3.61	3.77	3.65	3.60
DIVIDEND PAYOUT RATIO	86.86	69.87	78.54	69.17	71.36	75.16
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.86 %	11.10 %	10.40 %	11.37 %	11.28 %	10.60 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.53 x	3.63 x	3.57 x	3.40 x	3.57 x	3.54 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	14.60 %	14.73 %	15.23 %	16.70 %	18.17 %	15.89 %
TOTAL DEBT / TOTAL CAPITAL	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %

See Page 2 for notes.

<u>Proxy Group of Three Value Line (Standard Edition) Water Companies</u>
Capitalization and Financial Statistics
<u>1999-2003, Inclusive</u>

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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Selection Criteria:

The basis of selection was to include those water companies: 1) which are included in the Value Line (Standard Edition).

The following three water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
California Water Service Group

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

Capital Structure Based upon Total Capital for
the Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
Long-Term Debt	51.51 %	52.50 %	51.59 %	45.79 %	46.82 %	49.64 %
Short-Term Debt	5.80	7.68	6.22	7.74	7.11	6.91
Preferred Stock	0.24	0.25	0.44	0.59	0.68	0.44
Common Equity	42.45	39.57	41.75	45.88	45.39	43.01
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

PROXY GROUP OF FIFTEEN UTILITIES SELECTED ON THE BASIS OF LEAST RELATIVE DISTANCE
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

(MILLIONS OF DOLLARS)

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$6,466.62	$6,002.66	$5,447.01	$4,999.91	$4,660.90	
SHORT-TERM DEBT	$252.64	$325.28	$489.78	$536.91	$421.70	
TOTAL CAPITAL EMPLOYED	$6,719.26	$6,327.94	$5,936.79	$5,536.82	$5,082.60	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	5.90 %	6.57 %	7.13 %	7.23 %	
PREFERRED STOCK	4.35	4.37	4.30	4.29	4.05	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	53.85 %	56.23 %	55.53 %	50.92 %	50.11 %	53.33 %
PREFERRED STOCK	1.10	1.03	1.34	1.47	2.38	1.46
COMMON EQUITY	45.05	42.74	43.13	47.61	47.51	45.21
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	56.04 %	59.43 %	59.10 %	55.02 %	53.10 %	56.54 %
PREFERRED STOCK	1.06	0.95	1.22	1.33	2.22	1.36
COMMON EQUITY	42.91	39.62	39.68	43.65	44.68	42.11
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	5.63 %	6.57 %	6.54 %	6.80 %	6.85 %	6.48 %
MARKET / AVERAGE BOOK RATIO	182.07	179.05	187.01	170.39	176.90	179.08
DIVIDEND YIELD	4.08	4.35	4.16	4.60	4.53	4.34
DIVIDEND PAYOUT RATIO	76.01	66.90	70.84	74.64	68.87	71.45
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.02 %	11.29 %	11.43 %	10.93 %	11.75 %	11.08 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	4.29 %	4.02 %	3.69 %	3.97 %	4.00 %	3.99 %
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	19.53 X	17.21 X	16.03 X	19.81 X	20.85 X	18.65 X
TOTAL DEBT / TOTAL CAPITAL	56.04 %	59.43 %	59.10 %	55.02 %	53.10 %	56.54 %

See Page 2 for notes.

Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Selection Criteria:

The basis of selection was to include those electric, gas, combination electric and gas, and water utilities: 1) which are included in Standard & Poor's Compustat Services, Inc., PC Plus Database; 2) which are most similar in risk to Aqua Illinois, Inc. based upon an analysis of the least relative distance of eight financial and operating ratios as explained in detail in Ms. Ahern's direct testimony; 4) which have Value Line (Standard Edition) or ThomsonFN / First Call consensus five-year EPS growth rate projections; and 5) which have not cut or omitted their common dividends in the five years ending 2003 or through the time of the preparation of Ms. Ahern's direct testimony, nor are expected by Value Line Investment Survey (Standard Edition) to cut their dividends during the next five years.

The following fifteen utilities met the above criteria:

AGL Resources, Inc.	American States Water Co.
Aqua America, Inc.	California Water Services Group
Cinergy Corp.	Consolidated Edison, Inc.
Dominion Resources, Inc.	Green Mountain Power Corp.
KeySpan Corp.	Middlesex Water Company
Northwest natural Gas Co.	Pinnacle West Capital Corp.
PNM Resources, Inc.	Southern Company
Southwest Water Company	

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Capital Structure Based upon Total Capital for
the Proxy Group of Fifteen Utilities
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
AGL Resources Inc.						
Long-Term Debt	45.22 %	48.25 %	53.24 %	47.31 %	52.55 %	49.31 %
Short-Term Debt	13.41	18.30	14.55	9.76	0.11	11.23
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	41.37	33.45	32.21	42.93	47.34	39.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.04 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.13	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Cinergy Corp.						
Long-Term Debt	54.71 %	53.23 %	49.34 %	42.29 %	47.81 %	49.48 %
Short-Term Debt	3.87	7.76	14.08	16.36	8.71	10.16
Preferred Stock	0.69	0.73	0.76	0.91	1.47	0.91
Common Equity	40.73	38.28	35.82	40.44	42.01	39.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Consolidated Edison, Inc.						
Long-Term Debt	50.36 %	51.45 %	48.29 %	49.06 %	44.59 %	48.75 %
Short-Term Debt	1.15	1.24	2.83	2.17	4.46	2.37
Preferred Stock	1.85	1.71	2.14	2.13	2.24	2.01
Common Equity	46.64	45.60	46.74	46.64	48.71	46.87
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Dominion						
Long-Term Debt	58.16 %	57.19 %	57.92 %	50.20 %	55.77 %	55.85 %
Short-Term Debt	4.96	4.38	7.37	15.01	6.18	7.58
Preferred Stock	0.88	0.94	1.52	2.36	4.32	2.00
Common Equity	36.00	37.49	33.19	32.43	33.73	34.57
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Green Mountain Power Corp.						
Long-Term Debt	49.38 %	52.99 %	44.17 %	42.31 %	44.05 %	46.58 %
Short-Term Debt	0.25	1.25	0.00	7.43	3.64	2.51
Preferred Stock	0.00	0.04	6.16	6.13	5.90	3.65
Common Equity	50.37	45.72	49.67	44.13	46.41	47.26
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Capital Structure Based upon Total Capital for
the Proxy Group of Fifteen Utilities
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
KeySpan Corp.						
Long-Term Debt	54.23 %	55.64 %	52.71 %	49.74 %	32.78 %	49.02 %
Short-Term Debt	4.66	9.73	11.76	15.11	4.06	9.06
Preferred Stock	5.73	3.34	3.10	2.43	10.27	4.97
Common Equity	35.38	31.29	32.43	32.72	52.89	36.94
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	50.57 %	47.29 %	49.70 %	50.48 %	51.88 %	49.98 %
Short-Term Debt	6.42	9.47	7.43	3.71	1.26	5.66
Preferred Stock	2.09	2.18	2.28	2.49	2.55	2.32
Common Equity	40.92	41.06	40.59	43.32	44.31	42.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Northwest Natural Gas Co.						
Long-Term Debt	45.83 %	45.36 %	40.66 %	43.64 %	42.08 %	43.51 %
Short-Term Debt	7.80	6.80	10.53	5.84	9.75	8.14
Preferred Stock	0.00	0.81	3.31	3.61	3.69	2.28
Common Equity	46.37	47.03	45.50	46.91	44.48	46.06
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Pinnacle West Capital Corp.						
Long-Term Debt	53.26 %	53.14 %	49.07 %	49.52 %	50.84 %	51.17 %
Short-Term Debt	1.38	1.72	7.11	1.69	0.84	2.55
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	45.36	45.14	43.82	48.79	48.32	46.29
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
PNM Resources, Inc.						
Long-Term Debt	44.81 %	46.04 %	47.10 %	50.11 %	51.99 %	48.01 %
Short-Term Debt	5.71	7.05	1.73	0.00	0.00	2.90
Preferred Stock	0.58	1.15	1.20	1.31	1.35	1.12
Common Equity	48.90	45.76	49.97	48.58	46.66	47.97
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southern Company						
Long-Term Debt	54.62 %	55.94 %	51.76 %	44.36 %	50.76 %	51.49 %
Short-Term Debt	2.42	4.43	8.95	7.34	13.56	7.34
Preferred Stock	1.81	1.31	1.73	1.61	3.79	2.05
Common Equity	41.15	38.32	37.56	46.69	31.89	39.12
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southwest Water Company						
Long-Term Debt	48.50 %	57.07 %	55.97 %	51.45 %	46.72 %	51.94 %
Short-Term Debt	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	0.85	0.74	0.41	0.51	0.68	0.64
Common Equity	50.65	42.19	43.62	48.04	52.60	47.42
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
Long-Term Debt	50.95 %	52.07 %	50.31 %	47.19 %	47.49 %	49.60 %
Short-Term Debt	4.63	6.34	7.00	7.18	4.93	6.02
Preferred Stock	1.01	0.92	1.60	1.69	2.55	1.55
Common Equity	43.41	40.67	41.09	43.95	45.04	42.83
Total Capital	100.00 %	100.00 %	100.00 %	100.01 %	100.01 %	100.00 %

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Data Base

Basis for the Selection of the Proxy Group of Fifteen Utilities
Selected on the Basis of Least Relative Distance

	Pre-Tax Interest Coverage (1)	Common Equity Ratio (2)	Fixed Asset Turnover (3)	AFUDC to Net Income (4)	Cash Flow as a % of Permanent Capitalization (5)	Net Cash Flow to Expenditures (6)	Funds Flow Interest Coverage (7)	Operating Earnings Stability (8)	Sum of Distance (9)
AGL Resources, Inc.	3.1031	0.4335	0.2964	0.0000	0.1350	1.0782	4.0169	0.3327	0.6516
American States Water Co.	2.7259	0.4035	0.2666	0.0000	0.0850	0.6607	3.6027	0.3083	0.5854
Aqua America, Inc.	3.5548	0.4732	0.1727	0.0237	0.1036	0.5976	3.8831	0.1697	0.5383
California Water Services Group	2.5291	0.4660	0.2637	0.0798	0.0910	0.3364	3.2914	0.4965	0.9609
Cinergy Corp.	2.9813	0.4399	0.7191	0.0696	0.0999	0.6305	3.6832	0.2083	0.6752
Consolidated Edison, Inc.	3.2101	0.4837	0.5388	0.0291	0.0955	0.6136	3.7480	0.3285	0.5342
Dominion Resources, Inc.	2.3150	0.4012	0.3192	0.0000	0.1091	0.7572	3.8191	0.4965	0.8941
Green Mountain Power Corp.	3.3803	0.5032	0.8559	0.0432	0.1000	1.0580	3.9031	0.2674	0.9806
KeySpan Corp.	2.7780	0.3619	0.5865	0.0000	0.1252	0.7464	4.3305	0.6768	0.8526
Middlesex Water Company	2.9925	0.4448	0.2415	0.0355	0.0705	0.3446	3.3551	0.1993	0.6733
Northwest Natural Gas Co.	2.9412	0.5167	0.4096	0.0238	0.1084	0.8116	3.9490	0.8500	0.8170
Pinnacle West Capital Corp.	2.8294	0.4866	0.3395	0.2100	0.1191	0.6760	4.6289	0.5366	0.8348
PNM Resources, Inc.	3.2034	0.5064	0.5280	0.0514	0.1186	0.9637	4.5583	0.6905	0.9970
Southern Company	3.6706	0.4305	0.2650	0.0581	0.1103	0.6102	4.4376	0.4060	0.8239
Southwest Water Company	2.9842	0.4659	0.5299	0.0811	0.1040	0.6941	4.0751	0.4672	0.5454
Aqua Illinois, Inc.	3.0464	0.5097	0.1582	0.0086	0.1139	0.4744	4.0018	0.1598	0.0000

See page 6 for notes.

Basis for the Selection of the Proxy Group of .
Fifteen Utilities Selected on the Basis of Least Relative Distance

Notes:

(1) Pre-tax interest coverage represents the number of times available earnings, before income taxes, excluding all allowance for funds used during construction (AFUDC) cover total interest charges, average for the years 2001, 2002 and 2003.

(2) Common equity ratio is the ratio of total common equity to permanent capitalization (the sum of total long-term debt, current maturities, total preferred stock and total common equity), average for the years 2001, 2002 and 2003.

(3) Fixed asset turnover is the ratio of total operating revenues to gross utility plant, average for the years 2001, 2002 and 2003.

(4) AFUDC to net income is the ratio of total AFUDC to income available for common equity, average for the years 2001, 2002 and 2003.

(5) Cash flow as a percent of permanent capitalization is the ratio of funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) to permanent capitalization (the sum of total long-term debt, current maturities, total preferred stock and total common equity), average for the years 2001, 2002 and 2003.

(6) Net cash flow to capital expenditures is the ratio of gross construction expenditures, excluding all AFUDC, provided by funds from operation (as defined in Note 5), after payment of all cash dividends, average for the years 2001, 2002 and 2003.

(7) Funds flow interest coverage is the ratio of funds from operations (as defined in Note 5) plus total interest charges to total interest charges, average for the years 2001, 2002 and 2003.

(8) Operating earnings stability is an index of the variation in quarterly before-income tax operating income for the years 2001, 2002 and 2003. It is calculated by dividing the standard error of the estimate of a regression about a trend line by the mean. It is analogous to the coefficient of variation.

(9) Sum of distance is calculated as the squared distances between the eight operating / financial ratios of each firm and Aqua Illinois, Inc., summing the squared distances, and then calculating the square root of the summation.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research
Insight Database
Aqua Illinois, Inc. Annual Reports to the Illinois Commerce Commission
and quarterly income statements

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
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	$ 24.000	$ 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)	$ 0.960	$ 0.960	$ 0.960
5.	Growth in Dollars	$ 1.440	$ 0.373	$ 2.040
6.	Return on Market Value	10.00%	5.55% (3)	12.50% (4)
7.	Rate of Growth on Market Value	6.00% (5)	1.55% (6)	8.50% (7)

Notes:
(1) Comprised of 4.0% dividend yield and 6.0%% growth.

(2) $24.00 * 4.0% yield = $0.960.

(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 - $0.960 dividends = $0.373 for growth / $24.00 market value = 1.55%).

(7) Actual rate of growth when DCF cost rate is applied to book value ($3.000 possible earnings - $0.960 dividends = $2.040 for growth / $24.00 market value = 8.50%).

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Indicated Common Equity Cost Rate
Through Use of the Discounted Cash Flow Model
Summary of Conclusion

	Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
1. Single Stage Discounted Cash Flow Model (1)	10.5 %	10.9 %	10.7 %
2. Quarterly Version of the Discounted Cash Flow Model (2)	10.7	11.1	10.8
3. Conclusion	10.6 %	11.0 %	10.8 %

Notes: (1) From page 2 of Aqua Schedule 3.9.

(2) From page 2 of Aqua Schedule 3.10.

Aqua Illinois, Inc. – Woodhaven Lakes Sewer Division
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Seleced on the Basis of Least Relative Distance

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 C. A. Turner Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	4.7 %	8.5 %
Aqua America, Inc.	2.3	0.1	2.4	10.0	12.4
Artesian Resources Corp.	3.0	0.1	3.1	6.3	9.4
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Middlesex Water Company	3.5	0.1	3.6	3.1	6.7
York Water Company	3.2	0.1	3.3	4.7	8.0
Average	3.2 %	0.1 %	3.3 %	5.7 %	10.2 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	4.7 %	8.5 %
Aqua America, Inc.	2.3	0.1	2.4	10.0	12.4
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Average	3.2 %	0.1 %	3.3 %	6.7 %	10.7 % (6)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	3.7 %	0.1 %	3.8 %	3.8 %	7.8 %
American States Water Co.	3.7	0.1	3.8	4.7	8.5
Aqua America, Inc.	2.3	0.1	2.4	9.6	12.0
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Cinergy Corp.	4.6	0.1	4.7	3.0	7.7
Consolidated Edison, Inc.	5.2	0.0	5.2	1.9	7.1
Dominion Resources, Inc.	4.1	0.1	4.2	6.6	10.8
Green Mountain Power Corp.	3.3	0.1	3.4	8.6	12.0
KeySpan Corp.	4.6	0.1	4.7	4.2	8.9
Middlesex Water Company	3.5	0.1	3.6	3.1	6.7
Northwest Natural Gas Co.	4.0	0.1	4.1	3.3	7.4
Pinnacle West Capital Corp.	4.4	0.1	4.5	4.4	8.9
PNM Resources, Inc.	2.6	0.1	2.7	5.6	8.3
Southern Company	4.5	0.1	4.6	3.4	8.0
Southwest Water Company	1.6	0.1	1.7	12.8	14.5
Average	3.7 %	0.1 %	3.8 %	5.4 %	10.9 % (6)

Notes: (1) From Aqua Schedule 3.11.

(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Aqua Schedule 3.13) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 3.7% x (1/2 x 4.7%) = 0.1%.

(3) Column 1 + Column 2.

(4) From page 1 of Aqua Schedule 3.13.

(5) Column 3 + Column 4.

(6) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

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 C. A. Turner Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	6.3 %	10.1 %
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
Artesian Resources Corp.	3.0	0.1	3.1	8.5	11.6
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Middlesex Water Company	3.5	0.1	3.6	6.0	9.6
York Water Company	3.2	0.1	3.3	7.0	10.3
Average	3.2 %	0.1 %	3.3 %	7.5 %	10.8 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	6.3 %	10.1 %
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Average	3.2 %	0.1 %	3.3 %	7.9 %	11.1 % (6)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	3.7 %	0.1 %	3.8 %	5.3 %	9.1 %
American States Water Co.	3.7	0.1	3.8	6.3	10.1
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Cinergy Corp.	4.6	0.1	4.7	3.9	8.6
Consolidated Edison, Inc.	5.2	0.1	5.3	2.3	7.6
Dominion Resources, Inc.	4.1	0.1	4.2	6.8	11.0
Green Mountain Power Corp.	3.3	0.1	3.4	3.5	6.9
KeySpan Corp.	4.6	0.1	4.7	5.6	10.3
Middlesex Water Company	3.5	0.1	3.6	6.0	9.6
Northwest Natural Gas Co.	4.0	0.1	4.1	4.9	9.0
Pinnacle West Capital Corp.	4.4	0.1	4.5	3.2	7.7
PNM Resources, Inc.	2.6	0.1	2.7	5.0	7.7
Southern Company	4.5	0.1	4.6	4.8	9.4
Southwest Water Company	1.6	0.1	1.7	10.0	11.7
Average	3.7	0.1	3.8	5.7	10.4 % (6)

Conclusion

Proxy Group of Six C. A. Turner Water Companies	10.5 %
Proxy Group of Three Value Line (Standard Edition) Water Companies	10.9 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	10.7 %

Notes: (1) From Aqua Schedule 3.11.

(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Aqua Schedule 3.13) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 3.7% x (1/2 x 6.3%) = 0.1%.

(3) Column 1 + Column 2.

(4) From page 1 of Aqua Schedule 3.13.

(5) Column 3 + Column 4.

(6) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

<u>Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division</u>
Indicated Common Equity Cost Rate Through Use of the
Quarterly Version of the Discounted Cash Flow Model (1)
for the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
<u>Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance</u>

	Based upon Historical and Projected Growth in DPS, EPS, and BR+SV (2)		
	Based upon Spot Closing Market Prices at December 7, 2004	Based Upon an Average of Closing Market Prices for Last 3 Months (3)	Average
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	8.5 %	8.4 %	8.5 %
Aqua America, Inc.	12.3	12.4	12.4
Artesian Resources Corp.	9.3	9.3	9.3
California Water Service Group	9.2	9.4	9.3
Middlesex Water Company	6.6	6.8	6.7
York Water Company	7.9	8.3	8.1
Average			10.3 % (5)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	8.5 %	8.4 %	8.5 %
Aqua America, Inc.	12.3	12.4	12.4
California Water Service Group	9.2	9.4	9.3
Average			10.9 % (5)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	7.5 %	7.6 %	7.6 %
American States Water Co.	8.5	8.4	8.5
Aqua America, Inc.	12.3	12.4	12.4
California Water Services Group	9.2	9.4	9.3
Cinergy Corp.	7.9	8.1	8.0
Consolidated Edison, Inc.	7.3	7.5	7.4
Dominion Resources, Inc.	11.0	10.9	11.0
Green Mountain Power Corp.	12.3	12.6	12.5
KeySpan Corp.	9.0	8.9	9.0
Middlesex Water Company	6.6	6.8	6.7
Northwest Natural Gas Co.	7.4	7.4	7.4
Pinnacle West Capital Corp.	9.0	9.0	9.0
PNM Resources, Inc.	8.3	8.5	8.4
Southern Company	8.1	8.1	8.1
Southwest Water Company	14.8	14.6	14.7
Average			11.1 % (5)

See page 2 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Indicated Common Equity Cost Rate Through Use of the
Quarterly Version of the Discounted Cash Flow Model (1)
for the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Based upon Projected Growth in EPS (4)		
	Based upon Spot Closing Market Prices at December 7, 2004	Based Upon an Average of Closing Market Prices for Last 3 Months (3)	Average
Proxy Group of Six **C. A. Turner Water Companies**			
American States Water Co.	10.2 %	10.0 %	10.1 %
Aqua America, Inc.	11.6	11.7	11.7
Artesian Resources Corp.	11.5	11.7	11.6
California Water Service Group	12.1	12.3	12.2
Middlesex Water Company	9.6	9.8	9.7
York Water Company	10.4	10.6	10.5
Average			11.0 % (5)
Proxy Group of Three Value Line **(Standard Edition) Water Companies**			
American States Water Co.	10.2 %	10.0 %	10.1 %
Aqua America, Inc.	11.6	11.7	11.7
California Water Service Group	12.1	12.3	12.2
Average			11.3 % (5)
Proxy Group of Fifteen Utilities Selected **on the Basis of Least Relative Distance**			
AGL Resources, Inc.	9.3 %	9.2 %	9.3 %
American States Water Co.	10.2	10.0	10.1
Aqua America, Inc.	11.6	11.7	11.7
California Water Services Group	12.1	12.3	12.2
Cinergy Corp.	8.9	9.1	9.0
Consolidated Edison, Inc.	7.8	7.9	7.9
Dominion Resources, Inc.	11.0	11.1	11.1
Green Mountain Power Corp.	7.1	7.1	7.1
KeySpan Corp.	10.4	10.3	10.4
Middlesex Water Company	9.6	9.8	9.7
Northwest Natural Gas Co.	9.1	9.0	9.1
Pinnacle West Capital Corp.	7.7	7.8	7.8
PNM Resources, Inc.	7.7	7.8	7.8
Southern Company	9.4	9.6	9.5
Southwest Water Company	11.8	11.9	11.9
Average			10.4 % (5)

Conclusion

Proxy Group of Six C. A. Turner Water Companies			10.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			11.1 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			10.8 %

Notes: (1) See Equation (7-2) on page 5 of this Schedule.
(2) Calculated using historical and projected growth in DPS, EPS, and BR+SV for each company calculated from the individual growth rates shown on page 1 of Aqua Schedule 3.13 in a manner identical to the conclusion of growth for each proxy group shown in column 9 on page 1 of Aqua Schedule 3.13.
(3) The average 3-month closing market price is based upon the market price on the last trading day of each of the three months ended November 30, 2004.
(4) Calculated using the average projected five year growth rate in EPS from column 7 on page 1 of Aqua Schedule 3.13.
(5) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

REGULATORY FINANCE:

UTILITIES' COST OF CAPITAL

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1994
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Arlington, Virginia

Chapter 7
Alternative DCF Models

7.1 The Quarterly DCF Model

The standard annual form of the DCF model:

$$K = D_1/P_0 + g$$

assumes an annual dividend payment, a yearly increase in dividends starting exactly one year from the present, a constant rate of dividend growth, and a stock price P_0 that is determined on a dividend payment date. But because dividends are normally paid quarterly, the investor's required return should be assessed with a DCF model that recognizes quarterly payments.

It is a rudimentary tenet of security valuation theory discussed in Chapter 4 that when determining investor return requirements, the cost of equity is the discount rate that equates the present value of future cash receipts to the observed market price. Clearly, given that dividends are paid quarterly and given that the observed stock price reflects the quarterly nature of dividend payments, the market required return must recognize quarterly compounding, for the investor receives dividend checks and reinvests the proceeds on a quarterly schedule. Perforce, a stock that pays 4 quarterly dividends of one dollar commands a higher price than a stock that pays a 4-dollar dividend a year hence. Since investors are aware of the quarterly timing of dividend payments and since the stock price already fully reflects the quarterly payment of dividends, it is essential that the DCF model used to estimate equity costs also reflect the actual timing of quarterly dividends.

The traditional annual DCF model is based on the limiting assumptions that dividends are paid annually, and that dividends increase once a year starting exactly one year from the present. These assumptions are unnecessarily restrictive. Most companies, including utilities, in fact pay dividends on a quarterly basis. The quarterly DCF model discussed in subsequent sections of this chapter rests on the exact same assumptions as the annual DCF model except that the DCF model is refined to reflect the actual corporate practice of paying dividends quarterly rather than once a year. The quarterly version of the DCF model also assumes that the dividend rate is raised once a year instead of every quarter.

As both a practical and theoretical matter, stock yield calculations must be adjusted for the receipt of cash flows on a quarterly basis. The annual DCF

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model inherently produces incorrect results because it assumes that all cash flows received by investors are paid annually. By analogy, a bank rate on deposits that does not take into consideration the timing of the interest payments understates the true yield if the customer receives the interest payments more than once a year. The actual yield will exceed the stated nominal rate. Bond yield calculations are also routinely adjusted for the receipts of semi-annual interest payments. What is true for bank deposits and for bonds is equally germane for common stocks.

Most, if not all, finance textbooks discuss frequency of compounding in computing the yield on a financial security. The handbooks that accompany popular financial calculators used almost universally by the financial community contain abundant directions with respect to frequency of compounding.

Appendix 7-A formally derives the quarterly DCF model, which has the following form:

$$K = \frac{[D_1 (1 + K)^{3/4} + D_2 (1 + K)^{1/2} + D_3 (1 + K)^{1/4} + D_4]}{P_0} + g \qquad (7\text{-}1)$$

where D_1, D_2, D_3, D_4 = quarterly dividends expected over the coming year

g = expected growth in dividends

P_0 = current stock price

K = required return on equity

Equation 7-1 must be solved by iteration because K appears on both sides of the equation. Note that an even more general form of the quarterly DCF model can be derived for the case where the stock price is not determined on a dividend payment date. If we let f_1, f_2, f_3, and f_4 denote the fraction of the year before the quarterly dividends are received, Equation 7-1 becomes:

$$K = \frac{[D_1 (1 + K)^{1-f_1} + D_2 (1 + K)^{1-f_2} + D_3 (1 + K)^{1-f_3} + D_4 {}^{1-f_4}]}{P_0} + g \qquad (7\text{-}2)$$

In the special case where the stock price happens to be determined on a dividend payment date, $f_1, f_2, f_3,$ and f_4 are equal to 0.25, 0.50, 0.75 and 1.00 and Equation 7-2 reduces back to Equation 7-1.

The two-stage non-constant growth DCF model described in Chapter 4 has a quarterly counterpart:

$$P_0 = \frac{D_1(1+g)}{(1+K)^{0.25}} + \frac{D_2(1+g)}{(1+K)^{0.50}}$$

$$+ \frac{D_3(1+g)}{(1+K)^{0.75}} + \frac{D_3(1+g)}{(1+K)^{1.00}}$$

$$+ \frac{D_1(1+g)^2}{(1+K)^{1.25}} + \frac{D_2(1+g)^2}{(1+K)^{1.50}}$$

$$+ \frac{D_3(1+g)^2}{(1+K)^{1.75}} + \frac{D_3(1+g)^2}{(1+K)^{2.00}}$$

$$+ \frac{P_2}{(1+K)^{2.00}} \qquad\qquad (7\text{-}3)$$

The symbol g represents the first stage growth rate while P_2 represents the stock price in period 2 that is obtained by applying the quarterly DCF model using the second-stage growth rate.

Intuitively, the quarterly form of the DCF model described by Equation 7-1 resembles the standard annual form, but with a slightly modified dividend yield component. Letting $D_1' = D_1(1+K)^{3/4} + D_2(1+K)^{1/2} + D_3(1+K)^{1/4} + D_4$ in Equation 7-1, the quarterly DCF equation becomes:

$$K = D_1'/P_0 + g \qquad\qquad (7\text{-}4)$$

which is very similar to the annual version. One can think of the D_1' term as an augmented D_1 term that simply captures the added time value of money associated with investors receiving successive quarterly dividends and reinvesting them over the remainder of the year at $K\%$. That is to say, during the course of one year, the investor has the value of the first quarter's dividend for 3/4 of the year; the second quarter dividend for 1/2 of the year; the third quarter dividend for 1/4 of the year, and the fourth quarter dividend is received at the end of the year. The following illustration shows how to implement the quarterly DCF model and estimate the investor's required market return.

Regulatory Finance

EXAMPLE 7-1

The common stock of Consolidated Natural Gas (CNG) is trading at $52.13. The dividend is expected to increase annually at a constant rate of 8.8%. The current quarterly dividend rate is $0.48 and has been in effect for two quarters. Thus, an investor buying CNG stock expects to receive, in the next year, two more dividends at the existing rate of $0.48 and two dividends at the new rate of $0.48(1 + g). The cost of equity capital is obtained by solving iteratively the quarterly version of the DCF model in Equation 7-1 by means of a computer spreadsheet. To solve that equation, the following input data for CNG

$$D_1 = \$0.48$$

$$D_2 = \$0.48$$

$$D_3 = \$0.48 (1 + .0880) = \$0.52$$

$$D_4 = \$0.48 (1 + .0880) = \$0.52$$

$$P_0 = \$52.13$$

$$g = 8.80\%$$

are substituted into Equation 7-1 as follows:

$$K = \frac{0.48(1 + K)^{3/4} + 0.48(1 + K)^{2/4} + 0.52(1 + K)^{1/4} + 0.52}{\$52.13} + .0880$$

The equation is solved iteratively by successive approximations for K_e, the cost of equity. Here, $K_e = 12.82\%$.

Note that the annual DCF model produces an estimate of 12.64%, which is less than the 12.82% estimate derived from the quarterly DCF model:

$$K = D_1 / P_0 + g = \$2.00 / \$52.13 + .088 = 12.64\%$$

The difference is attributable to the time value of money associated with receiving quarterly dividends. The annual version of the DCF model typically understates the cost of equity by approximately 30-40 basis points, depending on the magnitude of the dividend yield component.

The cost of equity capital estimate of 12.82% should be translated into a fair return on equity by allowing for a 5% flotation costs factor. This is accomplished by dividing the dividend yield component of the cost of equity figure by 0.95 to produce a fair DCF rate of return on equity of 13.03%.

7.2 Other Alternative DCF Models

Other alternative functional forms of the DCF model are available but are largely unrealistic and/or theoretically incorrect. The continuous compounding DCF model, for example, is developed assuming that dividends are paid continuously rather than at discrete time intervals.[1] Clearly, this model does not reflect reality, any more than does the annual DCF model, which assumes that dividends are paid once a year at the end of the year. The continuous DCF model has the following form:

$$K_c = D_0/P_0 + g \qquad (7\text{-}5)$$

where K_c = investor's expected return from the continuous DCF model

D_0 = annual per share dividend at time 0, i.e., current dividend

Another DCF model sometimes used by analysts, notably by the Federal Energy Regulatory Commission in its determination of the electric utility industry's generic rate of return on equity before 1993, lies halfway between the continuous and annual forms of the DCF model:

$$K_{ad\ hoc} = D_0 (1 + 0.5G)/P_0 + g \qquad (7\text{-}6)$$

where $K_{ad\ hoc}$ = investor's expected return from the ad hoc DCF model

This "ad hoc" DCF model is based on the arbitrary assumption that the firm is halfway into its quarterly dividend cycle and assigns half a year's growth to the dividend. Of course, the model does not reflect reality and is arbitrary in nature. Only the quarterly compounding DCF model reflects reality, is theoretically correct, and is computationally tractable.

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1 The effective return under continuous compounding is computed with the following formula:

$$K_c = \frac{D_0 \left[K_c/\ln (1 + k_e) \right] + g}{P_0}$$

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Derivation of Dividend Yield for Use in the
Discounted Cash Flow Model

| | Dividend Yield | | |
	Spot (12/07/04) (1)	Average of Last 3 Months (2)	Average Dividend Yield (3)
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	3.7 %	3.6 %	3.7 %
Aqua America, Inc.	2.2	2.3	2.3
Artesian Resources Corp.	2.9	3.0	3.0
California Water Services Group	3.4	3.6	3.5
Middlesex Water Company	3.4	3.6	3.5
York Water Company	3.2	3.2	3.2
Average	3.1 %	3.2 %	3.2 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	3.7	3.6 %	3.7 %
Aqua America, Inc.	2.2	2.3	2.3
California Water Services Group	3.4	3.6	3.5
Average	3.1 %	3.2 %	3.2 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least			
AGL Resources, Inc.	3.6	3.7 %	3.7 %
American States Water Co.	3.7	3.6	3.7
Aqua America, Inc.	2.2	2.3	2.3
California Water Services Group	3.4	3.6	3.5
Cinergy Corp.	4.5	4.7	4.6
Consolidated Edison, Inc.	5.2	5.2	5.2
Dominion Resources, Inc.	4.0	4.1	4.1
Green Mountain Power Corp.	3.3	3.3	3.3
KeySpan Corp.	4.6	4.5	4.6
Middlesex Water Company	3.4	3.6	3.5
Northwest Natural Gas Co.	4.0	4.0	4.0
Pinnacle West Capital Corp.	4.4	4.4	4.4
PNM Resources, Inc.	2.5	2.7	2.6
Southern Company	4.4	4.6	4.5
Southwest Water Company	1.6	1.6	1.6
Average	3.7 %	3.7 %	3.7 %

Notes: (1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 12/07/04.

(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 November 30, 2004.

(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: Standard & Poor's Compustat Services, Inc., PC Plus
Research Insight Database
finance.yahoo.com

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Current Institutional Holdings (1) and Individual Holdings (2) for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	1	2
	December 2004 Percentage of Institutional Holdings (1)	December 2004 Percentage of Individual Holdings (2)
Proxy Group of Six C. A. Turner Water Companies		
American States Water Co.	39.4 %	60.6 %
Aqua America	28.5	71.5
Artesian Resources Corp.	10.0	90.0
California Water Service Group	22.1	77.9
Middlesex Water Company	17.3	82.7
York Water Company	6.2	93.8
Average	20.6 %	79.4 %
Proxy Group of Three Value Line Water Companies		
American States Water Co.	39.4 %	60.6 %
Aqua America	28.5	71.5
California Water Service Group	22.1	77.9
Average	30.0 %	70.0 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance		
AGL Resources, Inc.	55.2 %	44.8 %
American States Water Co.	39.4	60.6
Aqua America, Inc.	28.5	71.5
California Water Services Group	22.1	77.9
Cinergy Corp.	63.6	36.4
Consolidated Edison, Inc.	43.0	57.0
Dominion Resources, Inc.	61.9	38.1
Green Mountain Power Corp.	41.7	58.3
KeySpan Corp.	49.3	50.7
Middlesex Water Company	17.3	82.7
Northwest Natural Gas Co.	47.1	52.9
Pinnacle West Capital Corp.	73.2	26.8
PNM Resources, Inc.	90.8	9.2
Southern Company	39.9	60.1
Southwest Water Company	26.1	73.9
Average	46.6 %	53.4 %

Notes:

(1) The percentage of institutional holdings is calculated by dividing the number of shares held by institutions by the number of shares outstanding.

(2) (1 - column 1).

Source of Information: yahoo.investor.reuters.com

Aqua Illinois, Inc. - Wastewater (Lake Sewer Division)
Historical and Projected Growth

	1	2	3	4	5	6		7	8	9	10	11	12	13
	Value Line Historical Five Year Growth Rates [1]		Five Year Historical BR + SV [2]	Value Line Projected 2001-03 to 2007-'09 Growth Rate [1]		Thomson FN / First Call 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			Average of all Growth Rates	Average of Midpoint and Average of all Growth Rates [9]
	DPS	EPS	EPS	DPS	EPS	EPS	No. of Est.			Low	High	Midpoint		

Proxy Group of Six C. A. Turner Water Companies

American States Water Co.	1.0	1.5	4.4	1.5	6.5	3.0	[1]	6.3	7.1	1.0	6.5	6.3	4.0	4.7
Aqua America, Inc.	6.0	6.5	15.0	7.0	6.0	6.5	[5]	6.3	7.5	6.0	15.0	10.8	9.1	10.0
Artesian Resources Corp.	4.4	6.7	5.4	NA	NA	6.5		6.5	NA	4.4	6.5	5.5	6.0	6.3
California Water Services Group	1.0	(6.5)	4.9	1.0	10.0	6.0		6.0	7.2	1.0	10.0	5.5	3.2	3.1
Middlesex Water Company	2.5	0.5	2.3	NA	NA	7.0		1.0	NA	0.5	7.0	3.8	2.8	4.1
York Water Company	2.8	4.2	3.2	NA	NA					2.8		5.0	4.8	
Average	3.0	4.3	6.0	3.2	8.5	6.1		7.6	7.2	3.4	9.4	6.1	5.2	5.1

Proxy Group of Three Value Line (Standard Edition) Water Companies

American States Water Co.	1.0	1.5	4.4	1.5	6.5	3.0	[1]	6.3	7.1	1.0	6.5	6.3	4.0	4.7
Aqua America, Inc.	6.0	6.5	15.8	7.0	6.0	6.5	[5]	9.5	7.3	6.0	15.8	10.8	9.1	10.0
California Water Services Group	1.0	(6.5)	4.9	1.0	10.0	6.0	[4]	6.0	7.2	1.0	10.0	5.5	5.0	6.4
Average	2.7	0.5	8.3	3.2	8.5	6.2		7.9	7.2	2.7	11.7	7.2	6.0	6.7

Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

AGL Resources, Inc.	0.5	1.0	7.1	1.0	6.0	5.0	[1]	6.3	6.5	0.5	7.1	3.8	3.8	3.9
American States Water Co.	1.0	1.5	4.4	1.5	6.5	3.0	[1]	6.3	7.1	1.0	9.5	6.3	4.0	4.7
Aqua America, Inc.	6.0	6.5	15.8	7.0	6.0	6.0	[5]	8.0	7.2	6.0	15.8	10.8	9.0	9.3
California Water Services Group	1.0	3.0	4.9	1.0	10.0	4.5	[5]	5.9	4.5	1.0	10.0	5.1	3.2	3.0
Cinergy Corp.	0.5	0.5	3.5	2.0	3.5	2.5	[6]	2.3	2.4	0.5	3.5	2.0	1.8	1.9
Consolidated Edison, Inc.	1.0	0.5	3.9	1.0	(1.0)	6.0	[6]	0.8	2.7	2.0	0.9	0.9	1.1	1.0
Dominion Resources, Inc.	---	6.5	5.4	2.0	7.5	4.7		6.1	5.1	2.0	14.5	8.3	6.2	8.0
Great Mountain Power Corp.	(10.5)	14.5	6.9	12.5	3.5	NA		5.5	5.5	0.5	10.5	5.9	4.5	4.1
KeySpan Corp.	4.0	21.0	3.3	NA	6.5	4.3		6.0	4.3	0.5	5.5	3.3	2.8	3.3
Middlesex Water Company	2.5	0.5	3.1	2.5	2.5	3.0		4.9	4.3	1.0	7.5	4.5	4.2	4.4
Northwest Natural Gas Co.	7.5	2.0	9.2	4.5	2.5	6.0		3.2	3.7	1.5	7.5	4.5	5.3	5.0
Pinnacle West Capital Corp.	6.0	4.5	6.9	4.5	(0.5)	6.0		5.0	3.7	3.7	8.0	5.9	3.7	3.4
PNM Resources, Inc.	1.0	1.5	4.6	4.0	NA	4.5		4.8	4.9	1.0	5.0	3.0	3.7	3.4
Southern Company	10.5	16.5	12.2	NA	NA	10.0		10.0	NA	10.0	12.8	12.8	12.8	12.8
Southwest Water Company														
Average	3.4	5.0	6.4	3.4	6.1	5.4		5.7	5.1	2.2	8.6	5.5	5.2	5.4

Notes: (1) As shown on pages 10 through 25 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 9 of this Schedule.
(5) Calculated using the same methodology as Value Line Investment Survey, i.e., three-year base periods ending 2003.
(6) Average of Columns 1, 2, 3, 4, 5, 6, and 8.
(7) Form Column 7.
(8) Excludes negatives.
(9) Average of Column 11 and Column 12.
(10) Excludes the 21.0% five-year historical growth rate in EPS for KeySpan Corp. because, in Ms. Ahern's opinion, such a growth rate is clearly an outlier.

Source of Information: Value Line Investment Survey, September 17, October 1, October 29, November 12, and December 3, 2004
Thomson FN First Call Earnings, ex.thomsonfn.com, updated December 4, 2004

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Calculation of Historical BR + SV

	1	2	3	4	5
	BR (1)	S Factor (2)	V Factor (3)	SV (4)	BR + SV (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
Artesian Resources Corp.	2.2	8.0	40.6	3.2	5.4
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Middlesex Water Company	1.5	1.5	56.4	0.8	2.3
York Water Company	2.0	2.1	55.0	1.2	3.2
Average	2.7 %	6.1 %	51.5 %	3.3 %	6.0 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Average	3.5 %	8.3 %	52.4 %	4.8 %	8.3 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	4.5 %	6.2 %	42.4 %	2.6 %	7.1 %
American States Water Co.	3.3	2.6	43.4	1.1	4.4
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Cinergy Corp.	4.1	2.4	41.3	1.0	5.1
Consolidated Edison, Inc.	2.8	2.2	31.6	0.7	3.5
Dominion Resources, Inc.	3.1	15.4	44.4	6.8	9.9
Green Mountain Power Corp.	5.8	2.1	(20.9)	(0.4)	5.4
KeySpan Corp.	3.5	4.2	34.9	1.5	5.0
Middlesex Water Company	1.5	1.5	56.4	0.8	2.3
Northwest Natural Gas Co.	2.9	0.9	27.6	0.2	3.1
Pinnacle West Capital Corp.	5.8	1.5	25.5	0.4	6.2
PNM Resources, Inc.	5.9	1.0	(1.8)	0.0	5.9
Southern Company	3.3	2.5	52.2	1.3	4.6
Southwest Water Company	8.3	7.2	54.9	4.0	12.3
Average	4.1 %	4.8 %	36.4 %	2.2 %	6.4 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 -2003

	1	2	3	4	5	6
						Five-Year Average 1999-2003 Internal Growth Rate. i.e., BR
	2003	2002	2001	2000	1999	
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
Artesian Resources Corp.						
Common Equity Return Rate	7.41 %	9.67 %	9.80 %	7.39 %	9.74 %	
Retention Ratio	19.24	34.96	31.35	8.12	27.74	
Internal Growth Rate (1)	1.43	3.38	3.07	0.60	2.70	2.2
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Middlesex Water Company						
Common Equity Return Rate	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	
Retention Ratio	(6.51)	13.33	5.88	(21.76)	22.73	
Internal Growth Rate (1)	(0.53)	1.35	0.55	(1.56)	2.51	1.5 (2)
York Water Company						
Common Equity Return Rate	11.66 %	10.37 %	11.73 %	11.88 %	10.31 %	
Retention Ratio	21.04	12.32	21.97	21.50	10.46	
Internal Growth Rate (1)	2.45	1.28	2.58	2.55	1.08	2.0
Average						2.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Average						3.5 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Fifteen Utilities Seleced on the Basis of Least Relative Distance
for the Years 1999 -2003

	1	2	3	4	5	6
						Five-Year Average 1999-2003 Internal Growth Rate. i.e., BR
	2003	2002	2001	2000	1999	
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
AGL Resources, Inc.						
Common Equity Return Rate	16.39 %	14.91 %	13.76 %	11.09 %	11.31 %	
Retention Ratio	48.49	41.26	34.08	15.89	16.53	
Internal Growth Rate (1)	7.95	6.15	4.69	1.76	1.87	4.5 %
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Cinergy Corp.						
Common Equity Return Rate	12.42 %	12.73 %	15.44 %	14.68 %	15.54 %	
Retention Ratio	25.79	24.85	35.27	28.59	29.51	
Internal Growth Rate (1)	3.20	3.16	5.45	4.20	4.59	4.1
Consolidated Edison, Inc.						
Common Equity Return Rate	8.51 %	11.53 %	12.25 %	10.71 %	12.25 %	
Retention Ratio	6.29	29.24	31.59	20.75	31.75	
Internal Growth Rate (1)	0.54	3.37	3.87	2.22	3.89	2.8
Dominion Resources, Inc.						
Common Equity Return Rate	9.15 %	14.66 %	7.08 %	7.07 %	10.95 %	
Retention Ratio	13.07	46.92	(19.30)	(48.19)	10.53	
Internal Growth Rate (1)	1.20	6.88	(1.37)	(3.41)	1.15	3.1 (2)
Green Mountain Power Corp.						
Common Equity Return Rate	10.78 %	11.71 %	11.24 %	(0.32) %	2.95 %	
Retention Ratio	63.30	70.82	71.45	1082.62	3.76	
Internal Growth Rate (1)	6.82	8.29	8.03	(3.46)	0.11	5.8 (2)

See page 5 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Fifteen Utilities Seleced on the Basis of Least Relative Distance
for the Years 1999 -2003

	1	2	3	4	5	6
						Five-Year Average 1999-2003 Internal Growth Rate. i.e., BR
	2003	2002	2001	2000	1999	
KeySpan Corp.						
Common Equity Return Rate	12.66 %	13.42 %	8.33 %	10.22 %	7.80 %	
Retention Ratio	32.52	35.60	(3.78)	15.19	(10.00)	
Internal Growth Rate (1)	4.12	4.78	(0.31)	1.55	(0.78)	3.5 % (2)
Middlesex Water Company						
Common Equity Return Rate	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	
Retention Ratio	(6.51)	13.33	5.88	(21.76)	22.73	
Internal Growth Rate (1)	(0.53)	1.35	0.55	(1.56)	2.51	1.5 (2)
Northwest Natural Gas Co.						
Common Equity Return Rate	9.24 %	8.73 %	10.38 %	10.29 %	10.08 %	
Retention Ratio	28.53	22.86	34.48	31.22	27.95	
Internal Growth Rate (1)	2.64	2.00	3.58	3.21	2.82	2.9
Pinnacle West Capital Corp.						
Common Equity Return Rate	8.36 %	8.30 %	13.41 %	13.18 %	12.35 %	
Retention Ratio	31.73	35.99	60.53	60.07	58.37	
Internal Growth Rate (1)	2.65	2.99	8.12	7.92	7.21	5.8
PNM Resources, Inc.						
Common Equity Return Rate	5.71 %	6.41 %	15.47 %	11.08 %	9.04 %	
Retention Ratio	37.23	45.95	79.11	68.77	48.17	
Internal Growth Rate (1)	2.13	2.95	12.24	7.62	4.35	5.9
Southern Company						
Common Equity Return Rate	16.06 %	15.79 %	11.98 %	9.99 %	13.43 %	
Retention Ratio	31.89	27.31	17.61	12.17	27.82	
Internal Growth Rate (1)	5.12	4.31	2.11	1.22	3.74	3.3
Southwest Water Company						
Common Equity Return Rate	10.20 %	10.32 %	12.12 %	12.16 %	15.53 %	
Retention Ratio	64.23	64.02	67.92	67.56	75.16	
Internal Growth Rate (1)	6.55	6.61	8.23	8.22	11.67	8.3
Average						4.1 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Calculation of Five Year Average Growth in Common Shares Outstanding (1) i.e. 3 Factor

	1 1998 Common Shares Outstanding (1)	2 97-98 Growth	3 1999 Common Shares Outstanding (1)	4 98-99 Growth	5 2000 Common Shares Outstanding (1)	6 99-00 Growth	7 2001 Common Shares Outstanding (1)	8 00-01 Growth	9 2002 Common Shares Outstanding (1)	10 01-02 Growth	11 2003 Common Shares Outstanding (1)	12 Five Year Average Common Share Growth
Proxy Group of Six C. A. Turner Water Companies												
American States Water Co.	13,437	0.0 %	13,437	12.5 %	15,120	0.0 %	15,120	0.4 %	15,181	0.2 %	15,212	2.6 %
Aqua America, Inc.	54,164	47.9	80,104	4.7	83,869	1.9	85,483	(0.7)	84,896	9.1	92,589	15.9 (2)
Artesian Resources Corp.	2,704	10.8	2,997	0.8	3,020	1.3	3,060	26.2	3,863	1.0	3,901	8.0
California Water Services Group	12,619	2.5	12,936	17.1	15,146	0.2	15,182	0.0	15,182	11.5	16,932	6.3
Middlesex Water Company	9,794	2.1	10,002	1.0	10,098	0.7	10,168	1.8	10,356	2.0	10,567	1.5
York Water Company	6,960	(1.0)	5,902	1.8	6,010	5.0	6,308	0.9	6,365	0.8	6,419	2.1 (2)
Average												8.1 %
Proxy Group of Three Value Line (Standard Edition) Water Companies												
American States Water Co.	13,437	0.0 %	13,437	12.5 %	15,120	0.0 %	15,120	0.4 %	15,181	0.2 %	15,212	2.6 %
Aqua America, Inc.	54,164	47.9	80,104	4.7	83,869	1.9	85,483	(0.7)	84,896	9.1	92,589	15.9 (2)
California Water Services Group	12,619	2.6	12,936	17.1	15,146	0.2	15,182	0.0	15,182	11.5	16,932	6.3
Average												8.3 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance												
AGL Resources, Inc.	57,300	(0.3) %	57,100	(6.4) %	54,000	2.0 %	55,100	2.9 %	56,700	13.8 %	64,500	6.2 % (2)
American States Water Co.	13,437	0.0	13,437	12.5	15,120	0.0	15,120	0.4	15,181	0.2	15,212	2.8
Aqua America, Inc.	54,164	47.9	80,104	4.7	83,869	1.9	85,483	(0.7)	84,896	9.1	92,589	15.9 (2)
California Water Services Group	12,619	2.5	12,936	17.1	15,146	0.2	15,182	0.0	15,182	11.5	16,932	6.3
Cinergy Corp.	158,665	0.2	158,923	0.0	158,968	0.3	159,403	5.8	168,663	6.7	178,337	2.4
Consolidated Edison, Inc.	232,633	(8.2)	213,811	(0.8)	212,027	0.1	212,147	0.8	213,933	6.6	225,840	2.2 (2)
Dominion Resources, Inc.	194,500	(4.2)	186,300	31.9	245,800	7.7	264,700	16.4	308,000	5.5	325,000	15.4 (2)
Green Mountain Power Corp.	5,313	1.8	5,410	2.9	5,567	2.1	5,685	(12.6)	4,855	1.8	5,033	2.1 (2)
KeySpan Corp.	130,420	2.6	133,866	1.9	136,363	2.2	139,430	2.1	142,425	12.1	169,664	4.2
Middlesex Water Company	9,794	2.1	10,002	1.0	10,098	0.7	10,168	1.8	10,356	2.0	10,567	1.5
Northwest Natural Gas Co.	24,853	1.0	25,092	0.6	25,233	0.0	25,228	1.4	25,586	1.4	25,938	0.9
Pinnacle West Capital Corp.	84,825	0.0	84,825	0.0	84,825	0.0	84,825	7.6	91,265	0.0	91,288	1.5
PNM Resources, Inc.	62,661	(2.6)	61,054	(3.9)	58,677	0.0	58,677	0.0	58,677	2.9	60,388	1.0 (2)
Southern Company	697,805	(4.6)	665,796	2.3	681,168	2.5	698,344	2.6	716,402	2.6	734,800	2.5 (2)
Southwest Water Company	11,634	1.8	11,846	5.9	12,645	2.5	12,856	(3.6)	12,392	18.4	14,669	7.2 (2)
Average												4.8 %

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

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
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
	1999	2000	2001	2002	2003	Five Year	
	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Average Market to Book Ratio	V Factor (2)
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.8	285.8	65.00
Artesian Resources Corp.	188.0	163.3	163.8	162.1	184.5	168.3	40.60
California Water Services Group	201.5	197.1	197.4	181.8	199.8	195.5	48.80
Middlesex Water Company	218.3	209.9	236.9	232.9	247.9	229.2	56.40
York Water Company	174.4	154.2	214.9	281.5	286.9	222.4	55.00
Average						213.0 %	51.50 %
Proxy Group of Three Value Line (Standard Edition) Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.8	285.8	65.00
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Average						219.3 %	52.40 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance							
AGL Resources, Inc.	189.8 %	166.0 %	182.9 %	171.0 %	188.8 %	173.6 %	42.40 %
American States Water Co.	177.2	170.8	174.8	180.6	180.3	176.7	43.40
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.8	285.8	65.00
California Water Services Group	201.5	197.1	197.4	181.8	199.8	195.5	48.80
Cinergy Corp.	178.3	161.4	176.7	164.8	170.4	170.3	41.30
Consolidated Edison, Inc.	170.0	128.5	142.4	143.5	147.1	146.3	31.60
Dominion Resources, Inc.	162.6	180.4	208.3	158.2	179.4	179.8	44.40
Green Mountain Power Corp.	55.7	55.7	89.0	101.4	111.7	82.7	(20.90)
KeySpan Corp.	123.8	155.9	171.7	158.5	158.6	153.7	34.90
Middlesex Water Company	218.3	209.9	236.9	232.9	247.9	229.2	56.40
Northwest Natural Gas Co.	140.5	129.1	132.7	144.7	144.1	135.2	27.60
Pinnacle West Capital Corp.	142.8	144.9	153.5	116.1	113.9	134.2	25.50
PNM Resources, Inc.	85.7	94.5	122.6	94.6	93.7	98.2	(1.80)
Southern Company	185.5	187.8	208.7	230.4	233.3	209.1	52.20
Southwest Water Company	222.9	204.8	234.6	240.3	206.2	221.8	54.90
Average						173.0 %	36.40 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Calculation of Projected BR + SV

	1	2	3	4	5	6	7	8	9	10	11
	Common Shares Outstanding (1) (000,000)			Projected 2007 - 2009 (1)							
	Actual 2003	Projected 2007-2009	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)
Proxy Group of Six C. A. Turner Water Companies											
American States Water Co.	15.21	19.00	4.8 %	30.00	20.00	17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.8	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	18.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.6	4.7	7.2
Middlesex Water Company	10.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	8.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			4.2 %					43.6 %	1.6 %	5.6 %	7.2 %
Proxy Group of Three Value Line (Standard Edition) Water Companies											
American States Water Co.	15.21	19.00	4.8 %	$30.00	$20.00	$17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.8	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
California Water Services Group	18.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.6	4.7	7.2
Average			4.2 %					43.6 %	1.6 %	5.6 %	7.2 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance											
AGL Resources, Inc.	64.50	65.00	0.2 %	$40.00	$30.00	$20.10	$35.00	42.6 %	0.1 %	6.4 %	6.5 %
American States Water Co.	15.21	19.00	4.8	30.00	20.00	17.60	25.00	30.0	1.4	5.7	7.1
Aqua America, Inc.	92.59	100.00	1.8	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
California Water Services Group	18.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Cinergy Corp.	178.44	198.90	2.2	45.00	35.00	27.05	40.00	32.4	0.7	3.6	4.3
Consolidated Edison, Inc.	225.84	251.80	2.2	45.00	40.00	31.65	42.50	26.8	0.6	1.8	2.4
Dominion Resources, Inc.	325.00	335.00	0.6	80.00	66.00	4.00	77.60	94.8	0.8	7.1	7.7
Green Mountain Power Corp.	6.03	6.35	1.2	30.00	19.00	23.00	24.50	6.1	0.1	5.0	5.1
KeySpan Corp.	159.60	162.50	0.4	50.00	35.00	20.25	42.50	31.2	0.1	5.4	5.5
Middlesex Water Company	10.48	NA	NA	NA	NA	23.50	NA	NA	NA	NA	NA
Northwest Natural Gas Co.	26.94	28.00	1.5	35.00	25.00	36.60	30.00	21.7	0.3	4.0	4.3
Pinnacle West Capital Corp.	91.29	91.40	0.0	45.00	40.00	21.60	42.50	14.1	0.0	3.3	3.3
PNM Resources, Inc.	60.39	61.00	0.2	25.00	20.00	17.00	22.50	4.0	0.0	3.7	3.7
Southern Company	734.60	780.00	1.2	35.00	25.00	NA	30.00	43.3	0.5	4.4	4.9
Southwest Water Company	14.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			1.7 %					34.4 %	0.6 %	4.7 %	5.3 %

NA = Not Available

Notes:
(1) From pages 10 through 25 of this Schedule.
(2) The S Factor is the six or five year compound growth rate between the 2002 and 2007 (mid-point of 2006-2008 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 9, column 14 of this Schedule.
(7) Column 9 + column 10.

Source of Information: Value Line Investment Survey, September 17, October 1, October 29, November 12, and December 3, 2004

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Projected Internal Growth Rate

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		2003			2007-2009							2007-2009		
	Common Equity (%) (1)	Total Capital ($ mill) (1)	Common Equity ($ mill) (2)	Common Equity (%) (1)	Total Capital ($ mill) (1)	Common Equity ($ mill) (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)
Proxy Group of Six C. A. Turner Water Companies														
American States Water Co.	48.00 %	$442.30	$212.30	48.00 %	$700.00	$343.00	10.07 %	1.05 %	10.50 %	11.03 %	$2.00	$0.98	52.0 %	5.7 %
Aqua America, Inc.	48.60	1,356.70	658.87	48.00	2,100.00	988.00	7.95	1.04	13.00	13.52	1.20	0.64	46.7	6.3
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Service Group	47.00	620.30	244.54	50.00	840.00	420.00	11.42	1.05	11.00	11.55	2.00	1.18	41.0	4.7
Middlesex Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average														5.6 %
Proxy Group of Three Value Line (Standard Edition) Water Companies														
American States Water Co.	48.00 %	$442.30	$212.30	48.00 %	$700.00	$338.00	9.82 %	1.05 %	10.50 %	11.03 %	$2.00	$0.98	52.0 %	5.7 %
Aqua America, Inc.	48.60	1,356.70	658.87	48.60	2,100.00	1,020.60	8.16	1.04	13.00	13.52	1.20	0.64	46.7	6.3
California Water Service Group	47.00	620.30	244.54	47.00	840.00	394.80	10.05	1.05	11.00	11.55	2.00	1.18	41.0	4.7
Average														5.6 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance														
AGL Resources, Inc.	48.70 %	$1,901.40	$945.00	49.70 %	$2,605.00	$1,204.89	6.50 %	1.03 %	12.00 %	12.38 %	$2.40	$1.16	51.7 %	6.4 %
American States Water Co.	48.00	442.30	212.30	48.00	700.00	338.00	9.82	1.05	10.50	11.03	2.00	0.98	52.0	6.7
Aqua America, Inc.	48.60	1,356.70	658.87	48.60	2,100.00	1,020.60	8.16	1.04	13.00	13.52	1.20	0.64	46.7	6.3
California Water Services Group	47.00	520.30	244.54	47.00	840.00	394.80	10.05	1.02	11.00	11.55	2.00	1.18	41.0	4.7
Chessy Corp.	46.90	7,895.40	3,702.84	48.90	8,860.00	4,493.02	3.94	1.02	9.00	8.18	2.80	2.34	32.0	3.6
Consolidated Edison, Inc.	48.00	13,389.00	6,417.12	48.00	15,988.00	7,663.20	3.51	1.02	13.50	13.77	8.00	2.92	19.3	1.9
Dominion Resources, Inc.	39.70	26,671.00	10,548.89	39.70	30,900.00	12,267.30	3.05	1.02	10.50	10.71	2.40	1.26	51.3	7.1
Green Mountain Power Corp.	50.50	197.90	99.94	50.50	235.00	118.68	3.50	1.01	12.00	12.12	3.45	1.90	46.7	8.0
KeySpan Corp.	39.10	9,360.90	3,658.86	39.10	10,650.00	4,154.15	2.82	NA	NA	NA	NA	NA	44.9	5.4
Middlesex Water Company	NA	NA	NA	50.30	1,270.00	638.81	4.76	1.02	10.00	10.20	2.40	1.45	39.6	NA
Northwest Natural Gas Co.	50.30	1,006.60	506.32	49.40	6,235.00	3,080.09	1.71	1.02	9.00	9.09	3.35	2.15	35.8	4.0
Pinnacle West Capital Corp.	48.40	5,727.50	2,829.39	51.90	6,256.00	1,204.08	2.23	1.01	7.00	7.07	1.55	0.74	52.3	3.3
PNM Resources, Inc.	51.90	2,077.30	1,078.12	43.60	2,320.00	12,055.40	4.55	1.02	14.00	14.28	2.46	1.70	30.6	3.7
Southern Company	43.60	22,135.00	9,650.88	NA	27,650.00	NA	NA	NA	NA	NA	NA	NA	NA	4.4
Southwest Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average														4.7 %

NA = Not Available

Notes: (1) From pages 10 through 25 of this Schedule.
(2) Column 1 * column 2.
(3) Column 4 * column 5.
(4) Five year compound growth rate in common equity from 2003 to 2007-2009 or (((((column 6 / 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, September 17, October 1, October 29, November 12, and December 3, 2004

AGL RESOURCES NYSE-ATG

| RECENT PRICE | 30.74 | P/E RATIO | 14.9 | (Trailing: 14.4 / Median: 14.0) | RELATIVE P/E RATIO | 0.87 | DIV'D YLD | 3.8% | VALUE LINE |

TIMELINESS **4** Raised 8/6/04
SAFETY **2** New 7/27/90
TECHNICAL **3** Lowered 9/17/04
BETA .80 (1.00 = Market)

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	40	(+30%)	10%
Low	30	(Nil)	3%

Insider Decisions
	O	N	D	J	F	M	A	M	J
to Buy	0	1	0	0	0	0	0	0	0
Options	0	0	2	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions
	3Q2003	4Q2003	1Q2004
to Buy	72	101	84
to Sell	97	67	75
Hld's(000)	34745	34511	35012

LEGENDS
— 1.15 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 12/95
Options: Yes
Shaded area indicates recession

% TOT. RETURN 8/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	14.0	13.4
3 yr.	63.6	29.3
5 yr.	103.1	54.2

Target Price Range 2007 | 2008 | 2009

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
22.97	21.63	22.58	20.26	20.43	22.73	23.59	19.32	21.91	22.75	23.36	18.71	11.25	19.04	15.32	15.25	29.00	31.99	Revenues per sh A	36.90
1.90	1.93	2.04	2.07	2.31	2.25	2.24	2.33	2.49	2.42	2.65	2.29	2.86	3.31	3.39	3.47	3.65	3.85	"Cash Flow" per sh	4.20
1.13	.95	1.01	1.04	1.13	1.08	1.17	1.33	1.37	1.37	1.41	.91	1.29	1.50	1.82	2.08	2.10	2.20	Earnings per sh A B	2.40
.88	.94	.98	1.02	1.03	1.04	1.04	1.04	1.06	1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.15	1.16	Div'ds Decl'd per sh C	1.16
2.86	2.65	2.73	2.95	2.74	2.49	2.37	2.17	2.37	2.59	2.05	2.51	2.92	2.83	3.30	2.46	2.45	2.45	Cap'l Spending per sh	2.55
8.72	8.83	8.97	9.42	9.90	9.90	10.19	10.12	10.56	10.99	11.42	11.59	11.50	12.19	12.52	14.66	15.50	16.55	Book Value per sh	20.10
42.47	43.40	44.32	47.51	48.69	49.72	50.66	55.02	55.70	56.60	57.30	57.10	54.00	55.10	56.70	64.50	65.00	65.00	Common Shs Outst'g D	65.00
11.1	13.7	14.2	15.3	15.5	17.9	15.1	12.6	13.8	14.7	13.9	21.4	13.6	14.6	12.5	12.5	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	15.0
.92	1.04	1.05	.98	.94	1.06	.99	.84	.86	.85	.72	1.22	.88	.75	.68	.72			Relative P/E Ratio	1.00
7.1%	7.2%	6.8%	6.4%	5.9%	5.4%	5.9%	6.2%	5.6%	5.4%	5.5%	5.5%	6.2%	4.9%	4.7%	4.3%			Avg Ann'l Div'd Yield	3.3%

CAPITAL STRUCTURE as of 6/30/04
Total Debt 1123.0 mill. Due in 5 Yrs 383.0 mill.
LT Debt $962.0 mill. LT Interest $60.0 mill.
(Total interest coverage: 2.9x)
Leases, Uncapitalized Annual rentals $11.8 mill.
Pension Assets-12/03 $258.9 mill. Oblig. $314.6 mill.
Pfd Stock None
Common Stock 64,946,102 shs.
as of 7/23/04
MARKET CAP: $2.0 billion (Mid Cap)

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		07-09
1199.9	1063.0	1220.2	1287.6	1338.6	1068.6	607.4	1049.3	868.9	983.7	1885	2075	Revenues ($mill) A	2400
63.2	74.3	75.6	76.6	80.6	52.1	71.1	82.3	103.0	132.4	135	145	Net Profit ($mill)	155
35.2%	36.9%	38.6%	37.9%	32.5%	33.1%	34.3%	40.7%	36.0%	35.9%	36.0%	36.0%	Income Tax Rate	36.0%
5.3%	7.0%	6.2%	5.9%	6.0%	4.9%	11.7%	7.8%	11.9%	13.5%	7.3%	6.9%	Net Profit Margin	6.5%
49.0%	47.4%	46.2%	48.7%	47.5%	45.3%	45.9%	61.3%	58.3%	50.3%	49.0%	49.0%	Long-Term Debt Ratio	50.0%
45.8%	47.6%	48.9%	45.9%	47.1%	49.2%	48.3%	38.7%	41.7%	49.7%	51.0%	51.0%	Common Equity Ratio	50.0%
1131.5	1170.3	1201.3	1356.4	1388.4	1345.8	1286.2	1736.3	1704.3	1901.4	1965	2100	Total Capital ($mill)	2605
1297.4	1350.3	1415.4	1496.6	1534.0	1598.9	1637.5	2058.9	2194.2	2352.4	2500	2700	Net Plant ($mill)	3008
7.5%	8.2%	8.0%	7.3%	7.6%	5.7%	7.4%	6.5%	8.1%	8.9%	7.0%	7.0%	Return on Total Cap'l	6.0%
11.0%	12.1%	11.7%	11.0%	11.1%	7.1%	10.2%	12.3%	14.5%	14.0%	13.5%	13.5%	Return on Shr. Equity	12.0%
11.3%	12.5%	12.1%	11.3%	12.3%	7.9%	11.5%	12.3%	14.5%	14.0%	13.5%	13.5%	Return on Com Equity	12.0%
3.0%	4.6%	3.8%	3.2%	4.4%	NMF	3.2%	4.2%	7.0%	6.6%	6.0%	6.5%	Retained to Com Eq	6.0%
75%	66%	71%	74%	64%	101%	72%	65%	52%	53%	55%	52%	All Div'ds to Net Prof	49%

CURRENT POSITION
	2002	2003	6/30/04
Cash Assets	8.4	16.5	54.0
Other	578.0	730.8	796.0
Current Assets	586.4	747.3	850.0
Accts Payable	91.1	73.7	535.0
Debt Due	418.6	77.0	161.0
Other	506.1	903.7	320.0
Current Liab.	1015.8	1054.4	1016.0
Fix. Chg. Cov.	242%	172%	225%

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	-2.5%	-6.0%	14.5%
"Cash Flow"	4.5%	6.0%	3.5%
Earnings	5.0%	5.5%	5.0%
Dividends	0.5%	0.5%	1.0%
Book Value	3.0%	3.5%	7.5%

QUARTERLY REVENUES ($ mill.) A
Fiscal Year Ends	Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2001	294.8	350.6	175.7	228.2	1049.3
	Mar.31	Jun.30	Sep.30	Dec.31	
2002	269.3	159.2	190.7	249.7	868.9
2003	352.5	186.6	166.3	278.3	983.7
2004	651	294	360	580	1885
2005	590	485	445	555	2075

EARNINGS PER SHARE A B
Fiscal Year Ends	Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2001	.41	.83	.17	.09	1.50
	Mar.31	Jun.30	Sep.30	Dec.31	
2002	.89	.21	.17	.55	1.82
2003	.98	.29	.27	.54	2.08
2004	1.00	.33	.25	.52	2.10
2005	.96	.38	.29	.57	2.20

QUARTERLY DIVIDENDS PAID C
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.27	.27	.27	.27	1.08
2001	.27	.27	.27	.27	1.08
2002	.27	.27	.27	.27	1.08
2003	.27	.28	.28	.28	1.11
2004	.28	.29	.29		

BUSINESS: AGL Resources, Inc. is a public utility holding company. Its distribution subsidiaries are Atlanta Gas Light, Chattanooga Gas, and Virginia Natural Gas. The utilities have around 2 million customers in Georgia, primarily Atlanta, Virginia, and in southern Tennessee. Also engaged in nonregulated natural gas marketing and other, allied services. Also wholesales and retails propane. Nonregulated subsidiaries: Georgia Natural Gas Services markets natural gas at retail. Acquired Virginia Natural Gas, 10/00. Sold Utilipro, 3/01. Officers/directors own 1.2% of outstanding common shares (3/04 Proxy). President & CEO: Paula Rospot. Incorporated: Georgia. Address: 303 Peachtree St., N.E., Atlanta, GA 30308. Telephone: 404-584-9470. Internet www.aglresources.com.

AGL Resources signed a definitive agreement to purchase NUI. The deal, subject to regulatory approval, calls for AGL to pay $220 million in cash and assume $471 million of the troubled utility's debt. NUI ran into difficulties following an overly aggressive move into nonregulated activities, which flopped and then spiraled into accounting irregularities and executive resignations. Subsequently, NUI shed most of its unregulated operations in the past year, retaining its gas utilities and gas storage and pipeline businesses. The acquisition will strengthen AGL's utilities footprint on the East Coast from Florida to New Jersey, and increase its service base by 20% to nearly 2.2 million customers. AGL hopes to close on the deal by November, and expects it to be accretive to earnings within the first year.

The company's thirst for expansion has extended beyond the NUI acquisition. It recently agreed to buy a natural gas storage facility from a subsidiary of American Electric Power for $86 million, plus another $9 million of marketable gas currently in inventory. The facility, located in Louisiana, consists of two salt dome gas storage caverns with 9.2 billion cubic feet of capacity. AGL made the move in order to provide additional access to natural gas for its regulated utilities. The deal is expected to close by October 1st.

Earnings for full-year 2004 should come in slightly ahead of last year's figure. Last quarter, AGL reported EPS of $0.33, compared to $0.29 a year earlier. The bottom line benefited from improvement in the company's utility operations, as a result of an increase in the average number of connected customers. Profits from AGL's nonregulated operations were down in the aggregate, however, as reduced volatility in gas prices lowered margins. We are holding our share-net estimate for 2004 unchanged at $2.10, but raising our 2005 estimate by a nickel, to $2.20, to account for the acquisitions.

This issue is a good-quality income stock. Its Price Stability (100) is excellent, and the stock provides a decent dividend yield. AGL's growth initiatives provide for decent capital gains potential for a utility, though the stock is already trading at company-record highs.

Michael P. Maloney *September 17, 2004*

(A) Fiscal year ends December 31st. Ended September 30th prior to 2002. (B) Diluted earnings per share. Next earnings report due late October. Excl. nonrecurring gains (losses): '88, $0.15; '95, d$0.83; '99, $0.39; '00, $0.13; '01, $0.13; '03, d$0.07. (C) Dividends historically paid early March, June, Sept, and Dec. • Div'd reinvest. plan available. (D) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	45
Earnings Predictability	65

AMER. STATES WATER NYSE-AWR

| RECENT PRICE | 24.09 | P/E RATIO | 17.3 | (Trailing: 26.5 / Median: 16.0) | RELATIVE P/E RATIO | 0.99 | DIV'D YLD | 3.7% | VALUE LINE |

TIMELINESS	4	Raised 11/7/03
SAFETY	3	New 2/4/00
TECHNICAL	3	Raised 8/20/04
BETA	.70	(1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+25%)	9%
Low	20	(-15%)	Nil

High: 16.3 14.7 14.0 16.1 17.1 19.5 26.5 25.3 26.4 29.0 29.0 26.8
Low: 13.1 10.2 10.5 12.5 13.5 14.1 14.8 16.7 19.0 20.3 21.6 20.8

LEGENDS
— 1.25 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 10/93
3-for-2 split 6/02
Options: No
Shaded area indicates recession

Target Price Range 2007 | 2008 | 2009

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	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

	4Q2003	1Q2004	2Q2004
to Buy	45	47	45
to Sell	31	33	35
Hld's(000)	5663	5623	5584

Percent shares traded: 6 / 4 / 2

% TOT. RETURN 9/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	9.5	18.8
3 yr.	11.5	55.9
5 yr.	33.9	63.9

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC. 07-09	
8.58	9.12	9.58	9.15	10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.75	15.00	Revenues per sh	15.55
1.13	1.44	1.49	1.78	1.61	1.67	1.68	1.75	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.06	2.60	2.90	"Cash Flow" per sh	3.40
.65	.92	.94	1.19	1.15	1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.72	1.20	1.50	Earnings per sh A	2.00
.67	.69	.72	.73	.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.88	.90	Div'd Decl'd per sh B■	.96
2.39	2.46	2.53	2.77	2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	3.65	4.05	Cap'l Spending per sh	3.60
7.07	7.31	7.54	8.39	8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	14.65	15.35	Book Value per sh	17.50
9.35	9.39	9.43	9.91	9.96	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	15.12	15.18	15.21	16.75	17.25	Common Shs Outst'g C	18.00
14.2	9.7	10.2	8.8	10.6	13.4	12.8	11.6	12.6	14.5	15.5	17.1	15.9	16.7	16.3	31.9	Bold figures are		Avg Ann'l P/E Ratio	13.0
1.18	.73	.76	.56	.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.65	Value Line estimates		Relative P/E Ratio	.85
7.4%	7.7%	7.5%	7.0%	6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%			Avg Ann'l Div'd Yield	3.8%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $284.3 mill. Due in 5 Yrs $60.0 mill.
LT Debt $229.5 mill. LT interest $16.5 mill.
(Total interest coverage: 2.0x)

Leases, Uncapitalized: None
Pension Assets-12/03 $46.7 mill.
Oblig. $58.9 mill.
Pfd Stock None. Pfd Div'd None.

Common Stock 15,268,587 shs.
as of 8/9/04

MARKET CAP: $375 million (Small Cap)

CURRENT POSITION ($MILL.)	2002	2003	6/30/04
Cash Assets	18.4	12.8	7.0
Receivables	10.8	11.8	12.0
Inventory (Avg Cst)	.9	1.4	1.5
Other	21.7	32.4	23.6
Current Assets	51.8	58.4	44.1
Accts Payable	11.6	18.8	15.5
Debt Due	48.3	56.8	54.8
Other	19.6	20.3	22.5
Current Liab.	79.5	95.90	92.8
Fix. Chg. Cov.	285%	255%	200%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.5%	4.0%	3.0%
"Cash Flow"	3.0%	5.0%	7.0%
Earnings	--	1.5%	9.5%
Dividends	1.5%	1.0%	1.5%
Book Value	4.5%	4.0%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	40.3	49.9	59.4	47.9	197.5
2002	44.5	52.8	61.6	50.3	209.2
2003	46.7	51.8	63.7	50.5	212.7
2004	46.7	59.3	69.0	55.0	230
2005	53.0	66.0	76.0	60.0	255

Calendar	EARNINGS PER SHARE A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.21	.33	.63	.18	1.35
2002	.25	.36	.50	.23	1.34
2003	.20	.13	.51	d.12	.72
2004	.08	.30	.56	.26	1.20
2005	.27	.34	.61	.28	1.50

Calendar	QUARTERLY DIVIDENDS PAID B■				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2000	.213	.213	.213	.217	.86
2001	.217	.217	.217	.217	.87
2002	.217	.217	.217	.221	.87
2003	.221	.221	.221	.221	.88
2004	.221	.221	.221		

122.7	129.8	151.5	153.8	148.1	173.4	184.0	197.5	209.2	212.7	230	255	Revenues ($mill)	300
11.3	12.2	13.5	14.1	14.6	16.1	18.0	20.4	20.3	11.9	21.0	26.5	Net Profit ($mill)	38.0
43.9%	41.9%	43.3%	41.1%	40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	40.0%	40.0%	Income Tax Rate	40.0%
--	--	--	--	--	--	--	--	--	--	Nil	Nil	AFUDC % to Net Profit	Nil
43.5%	46.6%	41.9%	43.0%	43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	51.0%	51.0%	Long-Term Debt Ratio	52.0%
55.5%	52.5%	57.3%	56.3%	55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	50.0%	49.0%	Common Equity Ratio	49.0%
213.5	230.6	256.0	268.4	277.1	328.2	371.1	447.6	444.4	442.3	490	545	Total Capital ($mill)	700
314.9	335.0	357.8	383.6	414.8	449.6	509.1	539.8	563.3	602.3	660	715	Net Plant ($mill)	850
7.1%	7.2%	6.9%	6.9%	7.0%	6.6%	6.4%	6.1%	6.5%	4.6%	6.0%	6.5%	Return on Total Cap'l	7.0%
9.4%	9.9%	9.0%	9.2%	9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	9.0%	9.5%	Return on Shr. Equity	10.5%
9.5%	10.0%	9.0%	9.2%	9.4%	10.1%	9.3%	10.1%	9.5%	5.6%	9.0%	9.5%	Return on Com Equity	10.5%
1.6%	2.1%	2.4%	1.8%	2.1%	2.9%	3.0%	3.6%	3.3%	NMF	3.0%	3.5%	Retained to Com Eq	5.5%
84%	79%	73%	80%	78%	72%	68%	65%	65%	113%	67%	58%	All Div'ds to Net Prof	48%

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Southern California Water Company, it supplies water to 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 approximately 22,000 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00); 11,400 customers. Has about 520 employees. Off. & dir. own less than 1% of common stock (4/04 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Incorporated: CA. Add.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel.: 909-394-3600. Web: www.aswater.com.

American States Water is benefiting from an improving regulatory environment. The company reported second-quarter earnings of $0.30 a share (excluding non recurring items totaling $0.14), more than double the prior-year tally, primarily due to rate increases warranted by the California Public Utilities Commission (CPUC). Indeed, the board authorized an $8.1 increase in annual revenues for the company's Region III service area. In addition, the order allows for an additional $4.7 million in aggregate increases in 2004 and 2005.

More recent decisions should boost profitability in the second half. In August, AWR was authorized to increase rates in Region I and II, as well. The CPUC granted Region II $15.8 million in rate relief to be implemented incrementally over the next three years, including $5.2 million in 2004, as the higher rates are retroactive to February 14. Too, three service areas in Region I were authorized a $382,100 increase in annual revenues retroactive to the start of the year. Although these decisions will undoubtedly provide a much needed top-line boost, they also suggest that the CPUC's regulatory process is becoming more timely and reasonable in its decision-making process. In all, we look for AWR to increase earnings by more than 50% in 2004.

Capital constraints may limit further gains, though. Faced with increasingly stringent regulatory and infrastructure requirements, American has looked to the equity market to fund recent improvements. The company sold approximately 1.4 million shares at the end of September, netting nearly $36 million, and more offerings are likely on the way. As a result, despite brighter top-line prospects, we look for the company's earnings growth rate, to begin subsiding somewhat in 2005. AWR will probably utilize additional offerings to seek out takeover targets in the fragmented water utility industry.

Still, American shares probably do not appeal to most investors. They are untimely for year-ahead performance and offer below-average appreciation potential out to 2007-2009. That said, though, income-minded investors may find the issue of interest, for its dividend yield.
Andre J. Costanza *October 29, 2004*

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

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	70

AQUA AMERICA NYSE-WTR

| RECENT PRICE | 21.29 | P/E RATIO | 24.5 | (Trailing: 26.9 Median: 20.0) | RELATIVE P/E RATIO | 1.40 | DIV'D YLD | 2.4% | VALUE LINE |

TIMELINESS 4 Lowered 8/4/04

SAFETY 3 Lowered 8/1/03

TECHNICAL 3 Raised 8/20/04

BETA .75 (1.00 = Market)

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	30	(+40%)	11%
Low	20	(-5%)	2%

Insider Decisions
	D	J	F	M	A	M	J	J	A
to Buy	0	0	1	0	0	1	0	1	0
Options	0	0	0	0	1	0	0	0	0
to Sell	0	0	0	0	2	1	0	1	0

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	85	93	90
to Sell	88	73	62
Hld's(000)	28673	28837	26345

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
···· Relative Price Strength
3-for-2 split 7/95
4-for-3 split 1/98
5-for-4 split 12/00
5-for-4 split 12/01
5-for-4 split 12/03
Options: Yes
Shaded area indicates recession

% TOT. RETURN 9/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	17.5	18.8
3 yr.	40.7	55.9
5 yr.	66.5	63.9

Target Price Range 2007 | 2008 | 2009

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
4.45	4.53	2.70	2.85	2.43	2.27	2.42	2.45	2.48	2.69	2.79	3.21	3.29	3.59	3.79	3.97	4.65	4.85	Revenues per sh	6.00
.66	.65	.58	.59	.52	.56	.56	.63	.67	.74	.81	.96	1.01	1.15	1.26	1.28	1.45	1.60	"Cash Flow" per sh	2.00
.30	.27	.33	.33	.31	.33	.35	.39	.40	.46	.53	.56	.62	.68	.72	.76	.85	.95	Earnings per sh A	1.20
.24	.24	.26	.26	.27	.27	.28	.29	.30	.32	.34	.36	.38	.40	.43	.46	.49	.52	Div'd Decl'd per sh B■	.64
.88	1.15	1.01	.72	.80	.63	.61	.69	.64	.77	1.09	1.20	1.55	1.45	1.60	1.76	1.60	1.55	Cap'l Spending per sh	1.50
2.88	2.92	2.80	2.76	2.79	3.05	3.21	3.28	3.59	3.79	4.28	4.57	5.13	5.53	5.81	7.12	7.55	7.95	Book Value per sh D	9.60
26.27	29.45	30.48	31.06	38.40	44.55	44.63	47.61	49.31	50.60	54.15	60.10	83.67	85.48	84.90	92.59	95.00	96.00	Common Shs Outst'g C	100.00
12.3	12.9	10.2	10.8	12.5	14.4	13.5	12.0	15.6	17.8	22.5	21.2	18.2	23.6	23.6	24.5	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
1.02	.98	.76	.69	.76	.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.42			Relative P/E Ratio	1.40
6.5%	6.9%	7.7%	7.2%	6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%			Avg Ann'l Div'd Yield	2.6%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $963.3 mill. Due in 5 Yrs $230.0 mill.
LT Debt $770.5 mill. LT Interest $45.0 mill.
(Total interest coverage: 3.5x)

Pension Assets-12/03 $108.7 mill.
Oblig. $150.1 mill.

Pfd Stock None

Common Stock 93,012,163 shares
as of 7/28/04

MARKET CAP: $2.0 billion (Mid Cap)

	108.6	117.0	122.5	136.2	151.0	257.3	275.5	307.3	322.0	367.2	440	475	Revenues ($mill)	600
	15.6	19.0	19.8	23.2	28.8	45.0	50.7	58.5	62.7	67.3	80.0	95.0	Net Profit ($mill)	125
	42.5%	40.4%	41.4%	40.6%	40.5%	38.4%	38.9%	39.3%	38.5%	39.3%	40.0%	40.0%	Income Tax Rate	40.0%
	.8%	1.6%	1.3%	4.0%	4.3%	4.4%	5.3%	2.1%	2.2%	3.2%	3.5%	3.5%	AFUDC % to Net Profit	4.0%
	50.2%	51.9%	54.1%	54.4%	52.7%	52.9%	52.0%	52.2%	54.2%	51.4%	53.5%	54.5%	Long-Term Debt Ratio	54.0%
	47.4%	46.4%	44.0%	44.8%	46.6%	46.7%	47.8%	47.7%	45.8%	48.6%	46.5%	45.5%	Common Equity Ratio	46.0%
	303.1	338.0	401.7	427.2	496.6	782.7	901.1	990.4	1076.2	1355.7	1550	1725	Total Capital ($mill)	2100
	385.7	436.9	502.9	534.5	609.8	1135.4	1251.4	1368.1	1490.8	1624.3	1925	2025	Net Plant ($mill)	2300
	7.0%	7.7%	6.8%	7.4%	7.6%	7.6%	7.4%	7.8%	7.6%	6.4%	6.5%	7.0%	Return on Total Cap'l	7.5%
	10.4%	11.7%	10.7%	11.9%	12.3%	12.2%	11.7%	12.3%	12.7%	10.2%	11.0%	12.0%	Return on Shr. Equity	13.0%
	10.3%	11.7%	11.2%	12.0%	12.4%	12.3%	11.7%	12.4%	12.7%	10.2%	11.0%	12.0%	Return on Com Equity	13.0%
	2.1%	3.5%	2.8%	3.6%	4.5%	4.3%	4.7%	5.1%	5.2%	4.2%	5.0%	5.5%	Retained to Com Eq	6.0%
	81%	71%	75%	70%	64%	65%	60%	59%	59%	57%	57%	54%	All Div'ds to Net Prof	51%

CURRENT POSITION ($MILL)
	2002	2003	6/30/04
Cash Assets	49.7	39.2	35.8
Receivables	57.7	62.3	67.6
Inventory (AvgCst)	4.6	5.8	7.2
Other	2.7	5.1	5.6
Current Assets	114.7	112.4	116.2
Accts Payable	31.1	32.3	13.1
Debt Due	149.4	135.8	192.8
Other	46.0	63.9	66.6
Current Liab.	226.5	232.0	272.5
Fix. Chg. Cov.	347%	344%	331%

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	7.5%	8.0%
"Cash Flow"	6.5%	10.5%	8.5%
Earnings	8.5%	9.5%	9.0%
Dividends	5.0%	6.0%	7.0%
Book Value	8.0%	9.5%	7.5%

QUARTERLY REVENUES ($ mill.)
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	70.2	77.3	84.7	75.1	307.3
2002	71.7	76.6	91.9	81.8	322.0
2003	80.5	83.4	102.1	101.2	367.2
2004	99.8	106.5	118.7	115	440
2005	105	115	130	125	475

EARNINGS PER SHARE A
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.14	.18	.22	.14	.68
2002	.14	.16	.25	.17	.72
2003	.15	.18	.24	.19	.76
2004	.17	.19	.25	.24	.85
2005	.19	.23	.27	.26	.95

QUARTERLY DIVIDENDS PAID B■
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.092	.092	.092	.099	.38
2001	.099	.099	.099	.106	.40
2002	.106	.106	.106	.112	.43
2003	.112	.112	.112	.12	.46
2004	.12	.12	.12	.13	

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately 2.5 million residents in Pennsylvania, Ohio, New Jersey, Illinois, Maine, North Carolina, Texas, Florida, Kentucky, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired Consumers Water, 4/99; AquaSource, 7/03; and others. Water supply revenues '03: residential, 59%; commercial, 17%; industrial & other, 24%. Officers and directors own 1.4% of the common stock (4/04 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.

Aqua America probably realized moderate growth in the recently completed third quarter. Much of the increase will likely be from acquisitions, as the second-quarter purchases of Heater Utilities and a number of Florida water systems should be consolidated into results. Also, a number of states, including Texas, Pennsylvania, and New Jersey, have approved rate hikes in the 5% to 10% range, which should go into effect at various times throughout the second half of the year. However, results may well be tempered by the wetness during the quarter in much of the company's operating territory due to frequent hurricanes and tropical storms. Still, we expect moderate per-share increases over third- and fourth-quarter results from a year ago.

The company is further expanding through acquisitions. Most recently, Aqua has purchased a number of small units, mostly in Pennsylvania, to quietly broaden its customer base. Although management is confident in its ability to grow internally in the southern states, it may have to seek out larger acquisitions in northern regions to meet its 7% revenue growth target. All told, we expect the top line to expand by $35 million in 2005.

Aqua's management team gives it a competitive advantage. In the recent Pennsylvania rate case, WTR was awarded 10.6%, 0.6% above the judge's decision, by the water utility commission because of management's strong performance with quality and acquisitions. Furthermore, in North Carolina, the commission has allowed the company to add a portion of its goodwill impairment from the Heater acquisition to its rate base for every additional water system purchased in the state. This apparent leverage should come in handy during upcoming rate negotiations in a number of other states.

These shares carry a Below-Average Timeliness rank. They are also already trading within our 3- to 5-year Price Target Range. The stock's limited long-term growth prospects are a consequence of the industry's regulated nature. However, management has decided to raise the dividend for the December period, to $0.13, and we expect future rises to keep the company's earnings payout above 50%.
Matthew B. V. Albrecht   October 29, 2004

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '90, (38¢); '91, (34¢); '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 5¢; '03, 4¢. Excl. gain from disc. operations: '96, 2¢. Next earnings report due early February. (B) Dividends historically paid in early March, June, Sept & Dec. ■ Div'd. reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits. (D) Incl. deferred charges. In '03: $34.3 mill., $0.37/sh.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	95
Earnings Predictability	100

CALIFORNIA WATER NYSE-CWT

| RECENT PRICE | 28.53 | P/E RATIO | 16.6 (Trailing: 17.7 Median: 17.0) | RELATIVE P/E RATIO | 0.95 | DIV'D YLD | 4.0% | VALUE LINE |

TIMELINESS 3 Raised 8/6/04
SAFETY 2 Lowered 8/11/95
TECHNICAL 3 Lowered 7/23/04
BETA .70 (1.00 = Market)

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 1/98
Options: No
Shaded area indicates recession

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	35	(+25%)	8%
Low	25	(-10%)	1%

Insider Decisions
	D	J	F	M	A	M	J	J	A
to Buy	1	0	0	0	1	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
	4Q2003	1Q2004	2Q2004
to Buy	40	42	40
to Sell	15	19	30
Hld's(000)	3485	3785	4047
Percent shares traded	4.5 / 3 / 1.5

% TOT. RETURN 9/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	18.5	18.8
3 yr.	23.7	55.9
5 yr.	35.8	63.9

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC. 07-09	
10.03	10.33	10.93	11.18	12.29	13.34	12.59	13.17	14.46	15.48	14.76	15.96	16.16	16.26	17.33	16.371	18.00	19.00	Revenues per sh	20.65
1.87	1.89	1.97	1.98	1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.52	2.20	2.65	2.51	3.20	3.30	"Cash Flow" per sh	3.60
1.23	1.20	1.25	1.21	1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.53	1.31	.94	1.25	1.21	1.70	1.75	Earnings per sh A	2.00
.80	.84	.87	.90	.93	.96	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.13	Div'd Decl'd per sh B a	1.18
2.12	2.40	2.36	3.03	3.09	2.53	2.26	2.17	2.83	2.61	2.74	3.44	2.45	4.09	5.82	4.39	3.25	3.65	Cap'l Spending per sh	3.90
9.30	9.66	10.04	10.35	10.51	10.90	11.56	11.72	12.22	13.00	13.38	13.43	12.90	12.95	13.12	14.44	15.80	16.60	Book Value per sh C	18.25
11.34	11.38	11.38	11.38	11.38	11.38	12.49	12.54	12.62	12.62	12.62	12.94	15.15	15.18	15.18	16.93	18.35	18.70	Common Shs Outst'g D	23.00
11.5	10.6	10.4	11.2	14.1	13.6	14.1	13.7	11.9	12.6	17.8	17.8	19.6	27.1	19.8	22.1	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	16.0
.95	.80	.77	.72	.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.28			Relative P/E Ratio	1.05
5.7%	6.6%	6.7%	6.6%	6.1%	5.2%	5.8%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%			Avg Ann'l Div'd Yield	4.0%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $272.9 mill. Due in 5 Yrs $10.7 mill.
LT Debt $272.0 mill. LT interest $17.0 mill.

(LT interest earned: 2.8x; total int. cov.: 2.7x)

Pension Assets-12/03 $88.4 mill. Oblig. $63.2 mill.

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

Common Stock 18,345,496 shs.
as of 8/4/04
MARKET CAP: $525 million (Small Cap)

	157.3	165.1	182.8	195.3	186.3	206.4	244.8	246.8	263.2	277.1	330	355	Revenues ($mill)	475
	14.4	14.7	19.1	23.3	18.4	19.9	20.0	14.4	19.1	19.4	31.0	32.5	Net Profit ($mill)	45.0
	40.0%	40.1%	38.9%	37.4%	36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	40.0%	40.0%	Income Tax Rate	40.0%
	--	--	--	--	--	--	--	--	--	--	Nil	Nil	AFUDC % to Net Profit	Nil
	46.6%	49.2%	47.4%	45.4%	44.2%	46.9%	48.9%	50.3%	55.3%	52.3%	50.0%	50.0%	Long-Term Debt Ratio	49.0%
	52.2%	49.7%	51.4%	53.5%	54.7%	52.0%	50.2%	48.8%	44.0%	47.0%	49.0%	49.0%	Common Equity Ratio	50.0%
	276.9	296.0	299.9	306.7	308.6	333.8	388.8	402.7	453.1	520.3	580	610	Total Capital ($mill)	840
	407.9	422.2	443.6	460.4	478.3	515.4	582.0	624.3	697.0	759.5	815	865	Net Plant ($mill)	985
	7.1%	6.8%	8.3%	9.4%	7.8%	7.8%	6.8%	5.3%	5.9%	5.6%	7.0%	7.0%	Return on Total Cap'l	7.0%
	9.7%	9.8%	12.1%	13.9%	10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	10.5%	10.5%	Return on Shr. Equity	11.0%
	9.9%	9.9%	12.3%	14.1%	10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	10.5%	10.5%	Return on Com Equity	11.0%
	1.9%	1.2%	3.8%	6.0%	2.8%	3.5%	1.8%	NMF	1.0%	.7%	3.5%	4.0%	Retained to Com Eq	4.5%
	81%	88%	69%	58%	74%	70%	82%	119%	90%	91%	67%	64%	All Div'ds to Net Prof	60%

CURRENT POSITION
($MILL)	2002	2003	6/30/04
Cash Assets	1.1	2.9	24.1
Other	41.9	40.6	60.0
Current Assets	43.0	43.5	84.1
Accts Payable	23.7	23.8	28.6
Debt Due	24.8	7.3	.9
Other	43.0	32.5	36.4
Current Liab.	91.5	63.6	65.9
Fix. Chg. Cov.	250%	218%	202%

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.0%	2.0%	3.5%
"Cash Flow"	2.0%	-1.5%	6.5%
Earnings	-.5%	-6.5%	10.0%
Dividends	2.0%	1.0%	1.0%
Book Value	2.5%	1.0%	5.0%

QUARTERLY REVENUES ($ mill.)
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	47.0	67.0	76.3	56.5	246.8
2002	51.7	69.2	81.4	60.9	263.2
2003	51.3	68.0	88.2	69.6	277.1
2004	60.2	88.9	100	80.9	330
2005	70.0	95.0	105	85.0	355

EARNINGS PER SHARE A E
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.01	.34	.39	.20	.94
2002	.12	.43	.50	.20	1.25
2003	d.05	.30	.53	.41	1.21
2004	.08	.59	.70	.33	1.70
2005	.10	.56	.73	.36	1.75

QUARTERLY DIVIDENDS PAID B a
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.275	.275	.275	.275	1.10
2001	.279	.279	.279	.279	1.12
2002	.28	.28	.28	.28	1.12
2003	.281	.281	.281	.281	1.12
2004	.283	.283	.283	.283	

BUSINESS: California Water Service Group provides regulated and nonregulated water service to over 2 million people (461,200 customers) in 98 communities in California, Washington, and New Mexico. 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, '03: residential, 70%; business, 18%; public authorities, 5%; industrial, 4%; other, 3%. '03 reported deprec. rate: 2.2%. Has about 815 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson. Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet www.calwater.com.

California Water Service Group appears to be on the road to recovery. The company reported second-quarter earnings of $0.59, nearly double last year's figure, and $0.18 above our estimate. Revenues increased 31%, as hot and dry weather prompted higher usage rates, as well as new customer growth. However, the bulk of the upside was a result of a favorable rate order from the California Public Utilities Commission (CPUC), which added almost $10 million. Further gains were offset by higher prices from wholesalers, though, as Cal was forced to purchase about half of its supply. We are adding a dime to our 2004 earnings estimate, and now expect Cal to earn $1.70 a share. Although usage rates will likely decline as we head into the cooler winter months, more timely rate decisions ought to drive favorable second-half earnings comparisons. The CPUC, which has been a stumbling block in recent years, appears to be settling cases in a more timely fashion of late. In fact, the board recently approved a $1.1 million increase in annual revenues for the Salinas district.

Additional rate case decisions augur well for Cal heading forward... Cal is expected to file a general rate case for one-third of its districts, which covers approximately 40% of its customer base. In addition, it expects a decision on another case totaling almost $8.0 million.
...but stricter regulatory laws may limit profits. The costs of meeting regulatory guidelines continue to increase and it doesn't seem as though they will moderate in the coming years. Indeed, the growing threats of terrorist activity on U.S. drinking systems ought to keep infrastructure maintenance costs elevated. Additional equity offerings will likely be necessary, given the company's cash requirements. Thus, we look for gains to be tempered over the next couple of years.
Cal shares may appeal to income-minded investors. CWT's dividend yield is tops among the water utility group. However, others will want to take a pass as these untimely shares hold little gains appeal out to late decade. Cal's cash strain may also impede it from participating in the industry's consolidation theme.
Andre J. Costanza *October 29, 2004*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; Q2 '02, 8¢. Next earnings report due late Jan.
(B) Dividends historically paid in mid-Feb., May, Aug., Nov. ■ Div'd reinvestment plan available.
(C) Incl. deferred charges. In '03: $38.0 mill., $2.25/sh.
(D) In millions, adjusted for split.
(E) May not total due to change in shares.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	90
Earnings Predictability	70

CINERGY NYSE-CIN

| RECENT PRICE | 40.33 | P/E RATIO | 14.8 | (Trailing: 18.2 / Median: 14.0) | RELATIVE P/E RATIO | 0.85 | DIV'D YLD | 4.7% | VALUE LINE |

TIMELINESS	4	Raised 8/17/04
SAFETY	2	New 1/13/95
TECHNICAL	3	Lowered 9/24/04

BETA .80 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+10%)	7%
Low	35	(-15%)	2%

Insider Decisions

	N	D	J	F	M	A	M	J	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	4	3	0	0	4	0	3
to Sell	0	0	1	1	0	0	1	0	3

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	177	165	157
to Sell	130	125	140
Hld's(000)	106374	108003	113833

Legends:
0.97 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 12/92
Options: Yes
Shaded area indicates recession

High: 29.6 27.6 31.1 34.3 39.1 39.9 34.9 35.3 35.6 37.2 38.9 41.1
Low: 23.9 23.4 27.5 32.0 30.8 23.4 20.0 28.0 25.4 29.8 34.9

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	24.3	13.4
3 yr.	47.5	29.3
5 yr.	72.9	54.2

Target Price Range 2007 2008 2009

Cinergy was formed on October 24, 1994 through the merger of Cincinnati Gas & Electric and PSI Resources. Each common share of Cincinnati Gas & Electric was exchanged for 1.00 share of Cinergy, while each common share of PSI Resources was exchanged for 1.023 Cinergy shares. Pre-merger data are figures for Cincinnati Gas & Electric only and are not comparable to Cinergy data.

	1994E	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC. 07-09
Revenues per sh	18.84	19.23	20.57	27.59	37.04	37.36	52.98	81.07	70.91	24.75	25.50	24.50	25.75
"Cash Flow" per sh	3.13	3.98	3.99	4.75	4.02	4.34	4.87	5.15	4.59	4.78	5.00	5.15	6.10
Earnings per sh A	1.30	2.22	2.19	2.30	1.97	2.10	2.50	2.75	2.22	2.43	2.65	2.75	3.00
Div'd Decl'd per sh B	1.72	1.72	1.74	1.80	1.80	1.80	1.80	1.80	1.80	1.84	1.88	1.92	2.04
Cap'l Spending per sh	3.09	2.06	2.05	2.08	2.32	2.43	3.27	5.31	5.08	3.95	4.15	4.35	4.20
Book Value per sh C	15.56	16.17	16.39	16.10	16.02	16.70	17.36	18.45	19.53	20.74	21.70	21.55	27.05
Common Shs Outst'g F	155.20	157.67	157.66	157.74	158.66	158.92	158.97	159.40	168.66	178.44	181.10	193.80	198.90
Avg Ann'l P/E Ratio	17.8	11.9	14.1	14.9	17.6	14.2	11.0	11.7	15.0	14.4	Bold figures are Value Line estimates		13.5
Relative P/E Ratio	1.17	.80	.88	.86	.92	.81	.72	.60	.82	.83			.90
Avg Ann'l Div'd Yield	7.4%	6.5%	5.6%	5.3%	5.2%	6.1%	6.6%	5.6%	5.4%	5.2%			5.1%
Revenues ($mill)	2924.2	3031.4	3242.7	4352.8	5876.3	5937.9	8422.0	12923	11960	4415.9	4620	4750	5120
Net Profit ($mill)	226.7	378.0	369.0	472.0	318.1	340.8	404.1	446.8	364.0	437.9	475	520	595
Income Tax Rate	40.2%	36.7%	37.2%	34.5%	26.9%	38.0%	38.4%	36.4%	30.2%	24.7%	25.0%	25.0%	25.0%
AFUDC % to Net Profit	8.2%	2.7%	2.0%	1.2%	.5%	1.2%	2.0%	7.3%	5.6%	1.7%	2.0%	2.0%	2.0%
Long-Term Debt Ratio	48.4%	46.3%	47.7%	44.2%	49.7%	52.1%	50.2%	52.1%	52.7%	52.3%	51.0%	47.0%	43.0%
Common Equity Ratio	43.1%	46.6%	48.6%	52.2%	48.5%	46.3%	48.2%	42.6%	42.5%	46.9%	48.5%	52.0%	56.0%
Total Capital ($mill)	5607.5	5467.5	5313.7	4868.1	5238.3	5735.6	5728.2	6907.4	7745.3	7895.4	8125	8770	9580
Net Plant ($mill)	6198.9	6251.1	6289.6	6297.1	6344.5	6417.5	6630.4	8236.9	8648.7	9627.5	9950	10310	11120
Return on Total Cap'l	6.0%	8.9%	8.7%	11.6%	7.7%	7.7%	8.4%	7.9%	6.1%	6.9%	7.0%	7.0%	7.5%
Return on Shr. Equity	7.8%	12.9%	13.3%	17.4%	12.1%	12.4%	14.2%	13.5%	9.9%	11.6%	12.0%	11.0%	11.0%
Return on Com Equity D	7.9%	13.6%	13.4%	18.1%	12.3%	12.6%	14.5%	15.0%	10.9%	11.7%	12.0%	11.0%	11.0%
Retained to Com Eq	NMF	3.1%	2.8%	6.9%	1.1%	1.9%	4.1%	5.3%	1.9%	3.0%	3.5%	3.5%	3.5%
All Div'ds to Net Prof	113%	79%	81%	63%	91%	86%	72%	65%	83%	74%	71%	70%	68%

CAPITAL STRUCTURE as of 6/30/04

Total Debt $5153.3 mill. Due in 5 Yrs $3020.0 mill.
LT Debt $3986.2 mill. LT Interest $201.0 mill.
(LT interest earned: 3.3x)
Pension Assets-12/03 $877.3 mill. Oblig. $1457.8 mill.

Pfd Stock $62.8 mill. Pfd Div'd $3.4 mill.
552,451 shs. 3.5% to 6.875% ($100 par); callable at $100 to $108 a sh.; 303,544 shs. 4.16% to 4.32% $25 par, call. at $25.

Common Stock 180,577,342 shs. as of 7/31/04
MARKET CAP: $7.3 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	-1.0	+.8	-1.5
Avg. Indust. Use (MWH)	2751	2701	2639
Avg. Indust. Revs. per KWH (¢)	4.10	4.01	4.01
Capacity at Peak (Mw)	11083	11249	13331
Peak Load, Summer (Mw)	11091	11133	11305
Annual Load Factor (%)	61.3	62.4	54.5
% Change Customers (yr-end)	+1.3	+.8	+1.0

| Fixed Charge Cov. (%) | 328 | 282 | 286 |

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	12.0%	15.5%	-15.0%
"Cash Flow"	2.5%	2.5%	4.0%
Earnings	1.5%	3.0%	3.5%
Dividends	1.0%	.5%	2.0%
Book Value	.5%	4.0%	5.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	3707	3642	3324	2250	12923
2002	2192	2471	3880	3417	11960
2003	1268	933.9	1092	1122	4415.9
2004	1289	1054	1120	1157	4620
2005	1320	1100	1150	1180	4750

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.75	.51	.80	.69	2.75
2002	.58	.27	.78	.59	2.22
2003	.80	.42	.62	.59	2.43
2004	.68	.32	.92	.73	2.65
2005	.75	.40	.90	.70	2.75

QUARTERLY DIVIDENDS PAID B

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.45	.45	.45	.45	1.80
2001	.45	.45	.45	.45	1.80
2002	.45	.45	.45	.45	1.80
2003	.46	.46	.46	.46	1.84
2004	.47	.47	.47		

BUSINESS: Cinergy Corp. is a holding company formed through the merger of Cincinnati Gas & Electric and PSI Resources. Supplies elect. (81% of revs.) to 1,500,000 customers, natural gas (19%) to 496,000 customers, in Ohio, Kentucky, and Indiana. Elect. (Gas) revs.: resid. 43% (66%); commer., 28% (26%); indust., 25% (4%); other 4% (4%). The primary metal and chemical industries are the largest customers. Fuel costs: 39% of revenues. '03 deprec. rate: 2.8%. Est'd plant age: 12 years. Fuels: coal, 87%; natural gas, 8%; other, 5%. Has 7,693 employees, 52,506 common stockholders. Chairman, President & CEO: James E. Rogers. Inc.: Delaware. Address: 139 East 4th St., Cincinnati, OH 45202. Tel.: 800-544-6900. Internet: www.cinergy.com.

Cinergy's Kentucky Union Light, Heat and Power subsidiary seeks to buy generating assets from an affiliate. ULH&P has been relying on power purchased from Cincinnati G&E (CG&E), which operates in Ohio's deregulated electric market, to meet its obligations. This has subjected the utility to fluctuations in wholesale power prices. ULH&P's request to buy 1,105 megawatts of capacity from CG&E for $380 million has been approved by Kentucky regulators. Consent of the SEC and the Federal Energy Regulatory Commission is still needed. CG&E advises that the transfer would not affect current electric rates, since power will be provided under the terms of the existing contract through the end of 2006. The Kentucky commission has directed ULH&P to file for new rates in time to allow them to take effect in January, 2007.

The company has a rate agreement in Ohio. The pact calls for yearly generation rate adjustments in a range of 5% to 8%. The increases, starting in 2005, would reflect expenses related to providing reserves necessary to maintain adequate electric supplies as well as the cost of environmental compliance, and homeland security and emission allowances. Too, CIN would defer its transmission and distribution request for an increase of $78.1 million until 2006. Finally, the 5% residential rate reduction would be extended for another three years through 2008.

Last year's reduced headcount should help lift earnings in 2004. In addition, retail energy sales should continue to rise at a 1.5% annual rate, and interest expense will be lower as construction spending to comply with The Clean Air Act declines. Last May's $153.5 million rate increase in Indiana is another plus. On the down side, pension and medical costs keep moving higher, and more common shares are outstanding. In all, we estimate a 9% gain in 2004 earnings, to $2.65 a share, and modest improvement next year. The stock is untimely.

Income-oriented investors might take a look here. The yield is a full percentage point above the industry norm. And our projection of steady earnings growth to 2007-2009 suggests increased dividends at a rate almost double that of the group.

Arthur H. Medalie   October 1, 2004

(A) EPS diluted. Excl. extraord. gains (losses): '93, ($2.55); '96, (12¢); '97, (69¢); '98, (32¢); '99, 43¢; '03, 15¢; '04, (11¢). Next egs. rpt. due late Oct. (B) Div'ds historically paid mid-Feb., mid-May, mid-Aug., and mid-Nov. ▪ Div'd reinvest. plan avail. (C) Incl. def. chgs. In '03, $5.93/sh.(D) Rate base: net original cost. Allowed on com. eq.: Ohio in '93; elect., 12.9%; Indiana in '04: 10.5%. Earned avg. com. eq. '03: 12.4%. Regul. Clim.: Above Avg. (E) Proforma. (F) In mill., adjust. for split.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	90

CON. EDISON NYSE-ED

RECENT PRICE	45.15	P/E RATIO	17.4 (Trailing: 16.6 / Median: 12.0)	RELATIVE P/E RATIO 0.93	DIV'D YLD 5.0%	VALUE LINE

TIMELINESS 4 Raised 9/3/04
SAFETY 1 New 7/27/90
TECHNICAL 3 Raised 11/5/04
BETA .60 (1.00 = Market)

High: 37.8 32.4 32.3 34.8 41.5 56.1 53.4 39.5 43.4 45.4 46.0 45.6
Low: 30.3 23.0 25.5 25.9 27.0 39.1 33.6 28.2 31.4 32.7 38.6 37.2

Target Price Range 2007 | 2008 | 2009

LEGENDS
— 0.96 x Dividends p sh divided by Interest Rate
· · · Relative Price Strength
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	45	(Nil)	5%
Low	40	(-10%)	3%

Insider Decisions
	J	F	M	A	M	J	J	A	S
to Buy	1	0	0	0	9	0	3	0	2
Options	8	0	1	0	0	0	0	0	1
to Sell	3	0	1	0	0	0	1	3	1

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	160	160	192
to Sell	148	147	121
Hld's(000)	89933	98284	106298

Percent shares traded: 6 / 4 / 2

% TOT. RETURN 10/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	13.4	12.6
3 yr.	29.5	49.3
5 yr.	47.9	66.7

© VALUE LINE PUB., INC. 07-09

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		07-09
22.41	24.33	25.15	25.72	25.36	26.73	27.13	27.82	29.62	30.24	30.46	35.04	44.48	45.41	39.65	43.51	40.45	40.75	Revenues per sh	41.40
3.82	3.92	3.84	3.90	4.06	4.38	4.77	4.87	4.97	5.08	5.29	5.74	5.51	5.70	5.44	5.12	4.90	5.30	"Cash Flow" per sh	5.80
2.47	2.49	2.34	2.32	2.46	2.66	2.98	2.93	2.93	2.95	3.04	3.13	2.74	3.21	3.13	2.83	2.65	2.80	Earnings per sh A	2.90
1.60	1.72	1.82	1.86	1.90	1.94	2.00	2.04	2.08	2.10	2.12	2.14	2.18	2.20	2.22	2.24	2.26	2.28	Div'd Decl'd per sh B n	2.34
2.52	2.68	3.05	3.39	3.40	3.37	3.22	2.95	2.87	2.78	2.66	3.17	4.52	5.20	5.68	5.72	4.85	6.00	Cap'l Spending per sh	4.35
18.44	19.21	19.73	20.18	20.89	21.63	22.62	23.51	24.37	25.18	25.88	25.31	25.81	26.71	27.68	28.44	29.40	30.05	Book Value per sh C	31.85
227.99	228.15	228.23	228.33	233.93	234.37	234.91	234.96	234.99	235.49	232.83	213.81	212.03	212.15	213.93	225.84	242.20	244.60	Common Shs Outst'g	251.80
9.0	10.0	10.3	10.8	11.9	13.1	9.3	9.8	10.1	10.9	15.3	14.0	12.0	12.0	13.3	14.3	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	14.5
.75	.76	.77	.69	.72	.77	.61	.66	.63	.63	.80	.80	.78	.61	.73	.83			Relative P/E Ratio	.95
7.2%	6.9%	7.5%	7.5%	6.5%	5.6%	7.2%	7.1%	7.0%	6.5%	4.6%	4.9%	6.6%	5.7%	5.3%	5.5%			Avg Ann'l Div'd Yield	5.6%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $7302 mill. Due in 5 Yrs $1303 mill.
LT Debt $6971 mill. LT Interest $417.0 mill.
(LT interest earned: 3.1x)
Pension Assets-12/03 $6.7 bill. Oblig. $6.7 bill

Pfd Stock $212.6 mill. Pfd Div'd $12.5 mill.
1,915,319 shs. $5 cum. no par, call $105 a sh.;
375,626 shs. 4.65% cum. $100 par, call $101 to
$102.50 a sh. Sinking Fund ends 2009; 370,500
shs. 6.125% cum. $100 par.

Common Stock 241,451,273 shs. as of 7/30/04
MARKET CAP: $10.9 billion (Large Cap)

	6373.1	6536.9	6959.7	7121.3	7093.1	7491.3	9431.4	9634.0	8481.9	9827.0	9800	9970	Revenues ($mill)	10420
	734.3	723.9	694.1	712.8	729.8	714.2	596.4	695.8	682.1	639.0	635	695	Net Profit ($mill)	740
	37.4%	35.4%	36.4%	34.8%	35.8%	34.3%	34.8%	40.0%	36.9%	33.7%	34.0%	34.0%	Income Tax Rate	34.0%
	1.6%	.8%	.7%	.9%	.5%	.8%	1.2%	1.3%	2.2%	4.2%	3.0%	3.0%	AFUDC % to Net Profit	2.0%
	40.7%	39.1%	41.2%	40.1%	39.2%	44.4%	48.6%	48.2%	50.1%	50.4%	49.5%	49.0%	Long-Term Debt Ratio	48.5%
	53.0%	54.5%	55.7%	56.8%	58.4%	53.1%	49.1%	49.6%	48.1%	48.0%	49.0%	49.5%	Common Equity Ratio	50.0%
	10032	10125	10289	10437	10325	10186	11137	11417	12302	13369	14470	14890	Total Capital ($mill)	15965
	10561	10614	11067	11267	11407	11354	11893	12248	13329	15225	15830	16690	Net Plant ($mill)	17920
	6.8%	8.6%	8.2%	8.4%	8.6%	8.6%	7.0%	7.8%	7.1%	6.3%	6.0%	6.0%	Return on Total Cap'l	6.0%
	12.3%	11.7%	11.5%	11.4%	11.6%	12.6%	10.4%	11.8%	11.1%	9.6%	8.5%	9.0%	Return on Shr. Equity	9.0%
	13.2%	12.5%	11.7%	11.7%	11.8%	12.9%	10.7%	12.0%	11.3%	9.8%	9.0%	9.5%	Return on Com Equity D	9.0%
	4.3%	3.8%	3.2%	3.4%	3.6%	4.1%	2.2%	3.8%	4.0%	2.9%	1.5%	1.5%	Retained to Com Eq	1.5%
	69%	71%	74%	72%	70%	69%	80%	69%	65%	71%	86%	82%	All Div'ds to Net Prof	81%

ELECTRIC OPERATING STATISTICS
	2001	2002	2003
% Change Retail Sales (KWH)	+2.9	-2.3	-3.4
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	629	629	630
Peak Load, Summer (Mw)	12207	12086	11875
Annual Load Factor (%)	NMF	NMF	NMF
% Change Customers (yr-end)	+.7	+.5	+.6

| Fixed Charge Cov. (%) | 342 | 313 | 289 |

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	5.0%	7.5%	-.5%
"Cash Flow"	3.0%	1.0%	1.0%
Earnings	2.0%	-.5%	-1.0%
Dividends	1.5%	1.0%	1.0%
Book Value	3.0%	2.0%	2.5%

QUARTERLY REVENUES ($ mill.)
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	2886	2112	2693	1943	9634.0
2002	2036	1849	2540	2057	8481.9
2003	2571	2176	2801	2279	9827.0
2004	2685	2169	2743	2203	9800
2005	2720	2200	2800	2250	9970

EARNINGS PER SHARE A
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.84	.48	1.30	.59	3.21
2002	.78	.46	1.33	.56	3.13
2003	.72	.29	1.16	.66	2.83
2004	.68	.37	1.01	.59	2.65
2005	.70	.30	1.20	.60	2.80

QUARTERLY DIVIDENDS PAID B n
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.545	.545	.545	.545	2.18
2001	.55	.55	.55	.55	2.20
2002	.555	.555	.555	.555	2.22
2003	.56	.56	.56	.56	2.24
2004	.565	.565	.565		

BUSINESS: Consolidated Edison, Inc., parent of Consolidated Edison Company of New York, Inc., sells electricity (78% of revs.), gas (16%), steam (6%) in most of New York City and Westchester County. Acquired Orange & Rockland Utilities 7/99. Commercial rev. ratio (55%) compares with 32% for the industry. Nonincome taxes and avg. price per kwh are among the highest in U.S. Fuel costs: 61% of revs.; labor costs, 14%. 2003 reported deprec. rate: 3.0%. Est'd plant age: 8 years. In '03, purch. almost all energy it sold on firm contracts with nonutility generators. Has 14,000 empls., 93,760 common shareholders. Chmn., CEO & Pres.: Eugene R. McGrath. Inc.: N.Y. Add.: 4 Irving Place, New York, N.Y. 10003. Tel.: 212-460-3903. Internet www.coned.com.

Consolidated Edison's dispute with Northeast Utilities (NU) is in federal court. The two companies' agreement to merge in 1999 fell apart a year later, with each party accusing the other of violating contract terms. ED filed suit, claiming that NU entered into unprofitable arrangements that would eliminate most of the alliance's benefits and that this constituted a legal basis for terminating the deal. NU countersued, seeking $1 billion in damages for ED's breaching the pact that would have given NU shareholders an acquisition premium of that amount if the merger had closed. The court has given no indication when it will hear the case. An unfavorable ruling would have a material adverse effect on the company.

Two rate cases have been decided; a third is unresolved. The gas order provides for a single increase in base rates of $46.8 million effective last October, with rates then frozen for two years. In addition, the company will retain the first $35 million of net revenues from nonfirm customer transactions in each of the three years covered by the order. ED also received higher steam rates of $49.6 mil-

lion effective last October and another $27.4 million in October of the following year. In the electric area, management filed for $472 million. An order on the request is due in March. The increase would recoup the $4.5 billion spent on the transmission and distribution network over the past 10 years.

Earnings will probably fall short of 2003's results. In addition to the dilutive effect of more shares outstanding, pension costs will be higher, interest expense will be up because of the issuance of long-term debt, and property taxes will increase in the second half. Despite the positive effect of higher gas and steam rates, we estimate a 6% decline in 2004 earnings, to $2.65 a share. An expected electric rate increase suggests an improved performance next year. The stock is untimely.

Conservative utility investors should consider these shares. Con Edison carries our highest Financial Strength rating of A++. What's more, the yield is a full percentage point above the group norm, and dividend growth prospects to 2007-2009 are about average.
Arthur H. Medalie   December 3, 2004

(A) EPS diluted. Excl. nonrecur.: '02, (11¢); '03, (45¢). Next egs. report due late Jan.
(B) Dividends historically paid in mid-Mar., mid-June, mid-Sept., and mid-Dec. ■ Div'd reinvest.
plan avail. (C) Includes intangibles. In '03: $11.92/sh. (D) Rate base: net original cost. Rate all'd elec. common equity: '97, 12.9%; earned on '03 average common equity: 10.2%.
Regulatory Climate: Average.

Company's Financial Strength	A++
Stock's Price Stability	95
Price Growth Persistence	55
Earnings Predictability	90

DOMINION RES. NYSE-D

| RECENT PRICE | 67.25 | P/E RATIO | 15.3 (Trailing: 17.7 / Median: 15.9) | RELATIVE P/E RATIO | 0.81 | DIV'D YLD | 4.0% | VALUE LINE |

TIMELINESS	4	Raised 8/6/04
SAFETY	2	Raised 9/11/98
TECHNICAL	3	Lowered 9/24/04
BETA .85	(1.00 = Market)	

High: 49.4 45.4 41.6 44.4 42.9 48.9 49.4 67.9 70.0 67.1 65.9 67.6
Low: 38.4 34.9 34.9 36.9 33.3 37.8 36.6 34.8 55.1 35.4 51.7 60.8

Target Price Range 2007 2008 2009

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	90	(+35%)	11%
Low	65	(-5%)	4%

LEGENDS
1.06 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 1/92
Options: Yes
Shaded area indicates recession

Insider Decisions
	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	2	8	0	0	0	0
to Sell	0	0	0	2	9	0	0	0	0

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	281	281	245
to Sell	214	210	234
Hld's(000)	182420	180683	196066

Percent shares traded: 9 6 3

% TOT. RETURN 10/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	10.0	12.6
3 yr.	20.9	49.3
5 yr.	57.1	66.7

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1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		© VALUE LINE PUB., INC. 07-09
22.72	24.52	22.82	23.83	23.14	26.37	26.05	26.37	26.72	40.88	31.30	29.63	37.67	39.89	33.16	37.16	40.15	42.55	Revenues per sh	49.00
6.36	5.82	6.08	6.38	6.04	6.61	6.33	6.00	6.44	7.78	5.97	7.35	7.43	7.84	8.90	7.94	8.45	9.90	"Cash Flow" per sh	11.75
3.01	2.76	2.75	2.94	2.66	3.12	2.81	2.45	2.65	3.00	1.72	2.99	2.50	2.97	4.82	3.91	5.16	5.10	Earnings per sh A	6.00
2.07	2.15	2.23	2.31	2.40	2.48	2.55	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.60	2.68	Div'd Decl'd per sh B ■	2.92
5.62	6.12	5.19	4.58	4.37	4.24	3.83	3.28	2.69	3.45	3.21	4.32	5.63	4.62	4.35	10.41	7.85	8.10	Cap'l Spending per sh	9.00
21.91	22.67	23.41	24.41	25.22	26.38	26.60	26.88	27.17	26.84	27.34	25.50	28.45	31.61	33.15	32.42	33.75	36.20	Book Value per sh C	45.00
147.17	150.91	154.79	158.85	163.84	168.12	172.41	176.41	181.22	187.80	194.46	186.32	245.80	264.70	308.10	325.00	335.00	335.00	Common Shs Outst'g D	335.00
9.5	10.5	10.9	11.3	14.3	14.3	13.8	15.4	14.8	12.5	24.6	14.5	19.4	20.9	12.0	15.2	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	13.0
.79	.79	.81	.72	.87	.84	.91	1.03	.93	.72	1.28	.83	1.26	1.07	.66	.88			Relative P/E Ratio	.85
7.2%	7.4%	7.4%	7.0%	6.3%	5.6%	6.6%	6.9%	6.6%	6.9%	6.1%	5.9%	5.3%	4.1%	4.4%	4.3%			Avg Ann'l Div'd Yield	3.7%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $17298.0 mill. Due in 5 Yrs $8169.0 mill.
LT Debt $15479.0 mill. LT interest $913.0 mill.
Incl. $1397.0 mill. mandatorily redeemable preferred securities of subsidiary trusts.
(LT interest earned: 2.9x)
Leases, Uncapitalized Annual rentals $70.0 mill.
Pension Assets-12/03 $3.73 bill. Oblig. $3.11 bill.
Pfd Stock $257.0 mill. Pfd Div'd $16.0 mill.
1,340,140 shs. $4.04-$7.05, $100 liq. pref., redeemable at $101.00-$112.50/sh.; 2,500,000 var. rate Money Market Pfd. shs. Excl. pfd. due within 1 year.
Common Stock 330,227,655 shs.
MARKET CAP: $22 billion (Large Cap)

4491.1	4651.7	4842.3	7677.6	6086.2	5520.0	9260.0	10558	10218	12078	13450	14250	Revenues ($mill)	16400
520.4	469.1	514.7	603.7	400.0	639.0	624.0	775.0	1378.0	1261.0	1425	1740	Net Profit ($mill)	2050
24.7%	28.0%	29.2%	26.4%	29.0%	29.4%	31.7%	38.4%	33.1%	34.9%	38.5%	38.5%	Income Tax Rate	38.5%
2.0%	2.4%	.9%	.3%	.3%	4.7%	3.5%	5.3%	6.9%	7.9%	5.0%	4.0%	AFUDC % to Net Profit	4.0%
46.6%	45.3%	45.1%	54.1%	44.2%	55.1%	58.3%	60.2%	56.2%	59.4%	57.5%	54.0%	Long-Term Debt Ratio	50.5%
45.3%	46.6%	47.0%	37.9%	46.4%	37.8%	38.9%	38.0%	42.7%	39.7%	41.5%	45.0%	Common Equity Ratio	48.5%
10113	10178	10476	13311	11461	12582	17987	22003	23927	26571	27175	26925	Total Capital ($mill)	30900
10245	10322	10509	12533	10637	10764	14849	18681	20257	25850	27125	26325	Net Plant ($mill)	32200
6.9%	6.4%	6.6%	6.6%	5.7%	6.8%	5.9%	5.3%	7.7%	6.5%	7.0%	8.0%	Return on Total Cap'l	8.0%
9.6%	8.4%	9.0%	9.9%	6.3%	11.3%	8.3%	8.9%	13.2%	11.7%	12.5%	14.0%	Return on Shr. Equity	13.5%
10.5%	9.0%	9.6%	11.0%	6.3%	12.0%	8.0%	9.0%	13.3%	11.8%	12.5%	14.0%	Return on Com Equity E	13.5%
1.0%	NMF	.2%	1.5%	NMF	1.7%	NMF	1.2%	6.3%	4.0%	5.0%	6.5%	Retained to Com Eq	7.0%
91%	105%	98%	87%	NMF	88%	109%	87%	54%	67%	61%	53%	All Div'ds to Net Prof	50%

ELECTRIC OPERATING STATISTICS
	2001	2002	2003
% Change Retail Sales (KWH)	-1.2	+4.9	+.5
Avg. Indust. Use (MWH)	13964	14584	14814
Avg. Indust. Revs. per KWH (¢)	4.40	NA	NA
Capacity at Peak (Mw)	18000	18000	18000
Peak Load, Summer (Mw)	16500	17084	16349
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.8	+2.0	+1.6

| Fixed Charge Cov. (%) | 198 | 273 | 257 |

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	2.0%	5.0%
"Cash Flow"	2.5%	4.0%	6.0%
Earnings	3.0%	9.5%	7.5%
Dividends	.5%	--	2.0%
Book Value	2.5%	3.5%	5.5%

QUARTERLY REVENUES ($ mill.)
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	3198	2309	2544	2507	10558
2002	2634	2332	2545	2707	10218
2003	3579	2630	2853	3016	12078
2004	3879	3040	3292	3239	13450
2005	4050	3250	3500	3450	14250

EARNINGS PER SHARE A
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.65	.72	1.37	.25	2.97
2002	1.20	.97	1.54	1.11	4.82
2003	1.46	.84	1.05	.52	3.91
2004	1.39	.81	1.08	1.02	4.30
2005	1.40	.90	1.45	1.35	5.10

QUARTERLY DIVIDENDS PAID B ■
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.645	.645	.645	.645	2.58
2001	.645	.645	.645	.645	2.58
2002	.645	.645	.645	.645	2.58
2003	.645	.645	.645	.645	2.58
2004	.645	.645	.645	.665	

BUSINESS: Dominion Resources, Inc. (DRI) is a holding company for Virginia Power, which serves 2.3 million customers in Virginia and northeastern NC. Acquired Consolidated Natural Gas (1.7 million customers in OH, PA, WV) 1/00. Nonutility operations include independent power production and gas & oil production. Electric revenue breakdown, '03: residential, 47%; commercial, 30%; indus-
trial, 10%; other, 13%. Generating sources, '03: coal, 39%; nuclear, 29%; oil, 5%; other, 4%; purchased, 23%. Fuel costs: 32% of revs. '03 deprec. rate: 3.6%. Has 16,700 employees, 400,000 common stockholders. Chairman & CEO: Thos. E. Capps. President & COO: Thomas F. Farrell II. Inc.: VA. Address: P.O. Box 26532, Richmond, VA 23261-6532. Tel.: 804-819-2000. Internet: www.dom.com.

Dividend growth has resumed at Dominion Resources. In accordance with the plans that the company had announced, the board of directors raised the quarterly dividend by $0.02 a share, to $0.665, in mid-October. In early 2005, the board plans to boost the quarterly disbursement to $0.67 a share, which would produce an $0.08 increase for the full year. Dominion expects to continue to raise the dividend by $0.08 a share annually beyond 2005. We believe this goal is achievable, in view of the company's improving finances and its moderate payout ratio. But . . .

We have reduced our share-earnings estimates for 2004 and 2005 by $0.45 and $0.05, respectively. Third-quarter earnings were below our estimate due, in part, to mild weather and the effects of Hurricane Ivan on oil and gas production. We have cut our fourth-quarter estimate due to the cost of a buyout (an estimated $90 million-$110 million after taxes) of contracts with a nonutility generator (NUG). Because Dominion excludes the hurricane-related costs and the NUG buyout costs from its earnings target of $4.68-$4.75 a share, our $4.30 estimate is

well below the company's guidance. In 2005, higher income from oil and gas production and lower fuel costs should help earnings. Our estimate is the midpoint of the company's goal of $5.00-$5.20 a share. The stock is ranked 4 (Below Average) for Timeliness.

Some plant acquisitions are pending. Dominion has agreed to pay $536 million, plus an adjustment for inventory and capital spending estimated at $120 million, for 2,839 mw of coal-, oil-, and gas-fired generating assets in New England. The transaction is expected to close in March. Dominion plans to finance most of the purchase price with a forward equity sale of common shares at $65.20 each. The deal should be accretive to share earnings in 2005, but our presentation will not reflect it until after it has closed. An agreement to pay $220 million for the 545-megawatt Kewaunee nuclear plant in Wisconsin was denied by the state commission. The companies will probably seek reconsideration. **The yield and total-return potential to 2007-2009 are a cut above the industry averages.**
Paul E. Debbas, CFA   December 3, 2004

(A) Excl. nonrecurring gain (losses): '97, (85¢); '98, $1.03; '99, (11¢); '00, (64¢) net; '01, (83¢); '03, ($2.91) net; '04, (12¢) net; loss from discontinued ops.: '04, 5¢. '01 & '03 earnings
don't add due to change in shares. Next earnings report due late Jan. (B) Div'ds historically paid in mid-Mar., June, Sept., and Dec. ■ Div'd reinvest. plan avail. (C) Incl. deferred charges.
In '03: $21.76/sh. (D) In mill., adj. for split. (E) Rate base: Net orig. cost, adj. Rate all'd on com. eq. in '99: none specified; earned on avg. com. eq., '03: 11.4%. Regulatory Climate: Avg.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	60

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GREEN MTN. POWER NYSE-GMP

| RECENT PRICE | 27.20 | P/E RATIO | 12.5 (Trailing: 12.9 / Median: 12.0) | RELATIVE P/E RATIO | 0.66 | DIV'D YLD | 3.5% | VALUE LINE |

TIMELINESS	3	Raised 8/13/04
SAFETY	3	Raised 9/7/01
TECHNICAL	3	Lowered 12/3/04
BETA .80 (1.00 = Market)		

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+10%)	7%
Low	19	(-30%)	-3%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	5	2	1	0	3	0	0
to Sell	0	2	6	2	1	0	3	0	0

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	30	23	28
to Sell	13	20	18
Hld's(000)	1916	1932	2029

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	17.9	12.6
3 yr.	75.7	49.3
5 yr.	216.4	66.7

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1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		07-09
34.79	38.83	39.06	33.33	32.91	32.46	31.68	33.30	35.54	34.52	34.69	46.41	49.62	49.86	55.42	55.72	44.25	45.28	Revenues per sh	46.75
3.88	3.95	4.02	3.87	4.32	4.05	4.47	5.12	5.41	4.69	2.24	3.45	2.69	4.42	5.14	4.79	4.80	4.90	"Cash Flow" per sh	5.05
2.41	2.36	2.29	2.45	2.54	2.20	2.23	2.26	2.22	1.57	d.80	.46	d.06	1.88	1.96	2.01	2.15	2.20	Earnings per sh (A)	2.40
1.89	1.95	2.00	2.04	2.08	2.11	2.12	2.12	2.12	1.61	.96	.55	.55	.55	.60	.76	.88	.98	Div'd Decl'd per sh (B)	1.28
3.84	5.44	3.79	3.42	3.47	3.52	2.89	3.16	3.48	3.16	2.05	1.70	2.49	2.28	3.94	3.30	4.20	3.85	Cap'l Spending per sh	2.80
18.37	18.73	19.03	20.30	20.99	21.42	21.66	21.94	22.15	22.02	20.09	18.60	16.53	17.81	18.51	19.85	20.65	21.25	Book Value per sh (C)	23.00
3.70	3.71	3.78	4.31	4.41	4.54	4.68	4.85	5.04	5.20	5.31	5.41	5.57	5.69	4.95	5.03	5.15	5.20	Common Shs Outst'g (E)	5.35
10.1	10.3	10.5	10.8	12.2	15.6	12.1	11.7	11.6	14.2	--	22.6	--	8.5	9.3	10.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	10.0
.84	.78	.78	.69	.74	.92	.79	.78	.73	.82	--	1.29	--	.44	.51	.62			Relative P/E Ratio	.65
7.7%	8.0%	8.3%	7.7%	6.7%	6.2%	7.8%	8.0%	8.2%	7.2%	6.4%	5.3%	6.6%	3.4%	3.3%	3.5%			Avg Ann'l Div'd Yield	5.3%

CAPITAL STRUCTURE as of 9/30/04
Total Debt $98.0 mill. Due In 5 Yrs $14.0 mill.
LT Debt $98.0 mill. LT Interest $6.5 mill.
Incl. $5.0 mill. capitalized leases.
(LT interest earned: 3.4x)

Leases, Uncapitalized None
Pension Assets-12/03 $27.9 mill.
Oblig. $34.0 mill.

Pfd Stock None

Common Stock 5,121,479 shs. as of 10/29/04
(5.25 mill. fully diluted shs.)
MARKET CAP: $150 million (Small Cap)

						148.2	161.5	179.0	179.3	184.3	251.0	277.3	283.5	274.6	280.5	228	235	Revenues ($mill)	250
11.0	11.5	12.0	9.4	d2.9	3.6	.7	11.8	11.4	10.3	11.0	11.5	Net Profit ($mill)	13.0
32.9%	32.7%	35.1%	43.2%	--	22.9%	--	37.1%	34.7%	33.1%	33.5%	34.0%	Income Tax Rate	35.5%
7.3%	5.0%	5.4%	7.1%	--	6.2%	72.2%	3.4%	2.9%	6.3%	6.5%	6.0%	AFUDC % to Net Profit	4.5%
43.6%	46.7%	44.3%	43.5%	43.9%	43.9%	42.9%	41.4%	51.7%	49.5%	48.0%	47.0%	Long-Term Debt Ratio	48.0%
51.8%	49.2%	47.5%	49.0%	48.7%	49.8%	50.3%	52.2%	48.3%	50.5%	52.0%	53.0%	Common Equity Ratio	52.0%
195.7	216.3	234.8	233.7	219.0	202.3	183.2	194.0	190.1	197.9	205	210	Total Capital ($mill)	235
176.0	182.0	189.9	196.7	195.6	192.9	194.7	196.9	203.5	228.9	235	250	Net Plant ($mill)	285
7.4%	6.8%	6.6%	5.6%	.3%	3.4%	2.2%	7.6%	7.4%	7.0%	7.0%	7.0%	Return on Total Cap'l	7.0%
10.0%	10.0%	9.1%	7.1%	NMF	3.2%	.7%	10.4%	12.4%	10.3%	10.5%	10.5%	Return on Shr. Equity	10.5%
10.1%	10.1%	9.8%	7.0%	NMF	2.4%	NMF	10.7%	12.3%	10.3%	10.5%	10.5%	Return on Com Equity (D)	10.5%
.5%	.6%	.5%	NMF	NMF	NMF	NMF	7.7%	8.7%	6.5%	6.0%	5.5%	Retained to Com Eq	5.0%
95%	94%	96%	102%	NMF	113%	NMF	34%	30%	37%	41%	45%	All Div'ds to Net Prof	54%

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	Nil	-.3	-1.1
Avg. Indust. Use (MWH)	31768	31499	25811
Avg. Indust. Revs. per KWH (¢)	7.70	7.31	7.41
Capacity at Peak (Mw)	408.0	406.9	393.9
Peak Load, Summer (Mw)	341.2	342.0	330.2
Annual Load Factor (%)	70.1	70.0	71.1
% Change Customers (yr-end)	+1.2	+.9	+1.2

| Fixed Charge Cov. (%) | 257 | 327 | 279 |

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	5.0%	9.0%	-2.5%
"Cash Flow"	1.5%	3.0%	1.0%
Earnings	-2.0%	14.5%	3.5%
Dividends	-11.0%	-16.5%	12.5%
Book Value	-1.0%	-2.5%	3.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	74.8	67.5	76.0	65.2	283.5
2002	68.9	65.1	73.5	67.1	274.6
2003	72.9	64.5	72.0	71.1	280.5
2004	63.1	54.6	54.9	55.4	228
2005	65.0	56.0	57.0	57.0	235

EARNINGS PER SHARE (A)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.51	.50	.58	.29	1.88
2002	.57	.32	.52	.55	1.96
2003	.80	.22	.59	.40	2.01
2004	.72	.34	.65	.44	2.15
2005	.74	.35	.66	.45	2.20

QUARTERLY DIVIDENDS PAID n (B)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.138	.138	.138	.138	.55
2001	.138	.138	.138	.138	.55
2002	.138	.138	.138	.19	.60
2003	.19	.19	.19	.19	.76
2004	.22	.22	.22		

BUSINESS: Green Mountain Power Corp. supplies electricity to north-central, and parts of southern and southeastern Vermont. Rev. mix ('03): resid'l, 26.9%; small comm'l & ind'l, 26.4%; large comm'l. & ind'l., 17.1%; other utils, 28.1%; other, 1.5%. Fuel ('03): hydro, 35.4% (incl. H-Q purch.); nuclear, 37.4% (Vermont Yankee); wood, 3.5%; oil, 2.7%; gas, 1.3%; wind, .5%; mkt purch., 19.2%. Has a 28.4% interest in Vermont Electric Power Co. and a 33.6% stake in Vermont Yankee Nuclear Power Corp. Fuel and purch. pwr costs: 70.3% of revs. '03 deprec. rate: 4.1%. Has 196 employees, 5,120 stockholders of rec. Chrmn: N.L. Brue. Pres. & CEO: C.L. Dutton. Inc.: VT. Addr.: 163 Acorn Lane, Colchester, VT 05446. Tel: 802-655-8455. Web: www.greenmountainpower.biz.

Green Mountain Power has filed for a rate hike. In December, 2003, the Vermont Public Service Board (VPSB) approved a rate settlement between GMP and the state Department of Public Service. The settlement satisfied a cost-of-service review requirement in the 2002 sale of the Vermont Yankee nuclear plant. Electricity rates were left unchanged for 2004, and the company was authorized to seek increases of 1.9% for 2005 and 0.9% for 2006. We look for the VPSB to soon approve the 2005 requested hike since it does not involve any controversial issues. GMP needs additional revenues to recover operating, maintenance, employment, and environmental clean-up costs. Approval would ensure that the utility earns its allowed return on common equity of 10.5%. As 2004 draws to a close, GMP appears on track to achieve its allowed rate of return, thanks to ongoing cost-control efforts and the carryover of previously deferred revenues. Our 2005 share-net estimate factors in the proposed 1.9% hike.

The capital structure is well balanced. At the end of the recently concluded September quarter, the company's debt-to-total capital and common equity-to-total capital ratios stood at 48% and 52%, respectively. These ratios are suitable for a pure power distribution company such as GMP. Over the next five years, just $14 million in debt will mature, and that is in 2006. Management will probably issue some $30 million in new debt that year to help rebalance the capital structure and secure funding for an investment in a transmission line planned by the Vermont Electric Company. (This investment offers the potential for increased regulated earnings at the federal level.) GMP's debt and equity ratios should stay close to the current levels over the coming 3 to 5 years. **Green Mountain Power stock's total-return potential to 2007-2009 appears subpar compared to the industry average.** Our projected return for the electrics over this period is a relatively unexciting 4% a year. Steady, predictable earnings growth and a low payout ratio suggest that GMP's dividend advance will be greater than the sector pace, but the recent share price seems to already reflect this positive prospect.

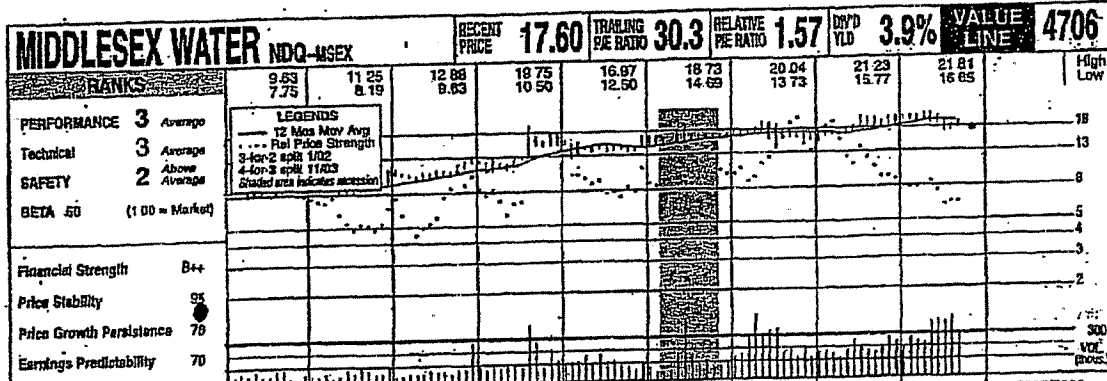*David M. Reimer   December 3, 2004*

(A) Basic earnings. Next earnings report due early Feb. Excludes gain (losses) from discontinued operations: '99, ($1.25); '00, ($1.19); '01, (3¢); '03, 1¢ (B) Dividends historically paid in late Mar., June, Sep., and Dec. ■ Dividend reinvestment plan available. (C) Includes deferred charges. In '03: $11.05/sh. (D) Rate base determination: net original cost. Rate allowed on common equity in '03: 10.5%. Earned on average common equity in '03: 10.8%. Regulatory Climate: Average. (E) In millions.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	25
Earnings Predictability	15

KEYSPAN CORP. NYSE-KSE

RECENT PRICE	38.84	
P/E RATIO	14.0 (Trailing: 13.2 / Median: 14.0)	
RELATIVE P/E RATIO	0.81	
DIV'D YLD	4.6%	

VALUE LINE

TIMELINESS	3	Raised 8/13/04
SAFETY	2	Lowered 3/26/99
TECHNICAL	2	Raised 8/27/04
BETA .75	(1.00 = Market)	

High: 28.5 28.6 29.6 32.6 37.1 37.6 31.3 43.6 41.9 38.2 38.1 39.0
Low: 21.6 21.5 22.0 24.9 26.1 25.4 22.5 20.2 29.1 27.4 31.0 33.9

Target Price Range 2007 | 2008 | 2009

LEGENDS
— 1.00 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 7/93
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+30%)	10%
Low	35	(-10%)	2%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	1	3	2	4	0	0	0
to Sell	0	0	1	3	2	4	0	0	0

Institutional Decisions

	3Q2003	4Q2003	1Q2004
to Buy	164	172	164
to Sell	121	113	107
Hld's(000)	77907	78367	80527

Percent shares traded: 12 / 8 / 4

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	18.6	13.4
3 yr.	37.5	29.3
5 yr.	63.6	54.2

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1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		07-09
25.51	26.71	26.64	23.43	24.74	25.99	28.13	24.93	28.72	29.12	13.20	22.07	37.56	47.57	41.92	43.31	43.40	46.60	Revenues per sh	55.40
2.55	2.64	2.62	2.38	3.03	3.04	3.29	3.35	3.54	4.27	.45	3.57	4.51	5.72	6.36	6.22	7.00	7.25	"Cash Flow" per sh	8.30
1.66	1.68	1.62	1.45	1.35	1.73	1.85	1.90	1.96	2.12	d1.34	1.62	2.10	1.72	2.75	2.62	2.75	2.85	Earnings per sh B	3.45
1.15	1.19	1.23	1.27	1.29	1.32	1.35	1.39	1.42	1.46	1.50	1.78	1.78	1.78	1.78	1.78	1.78	1.78	Div'ds Decl'd per sh C■	1.90
3.46	4.30	3.51	3.44	3.95	4.37	4.15	4.36	6.04	5.60	5.19	5.42	4.64	7.60	7.96	6.34	6.00	6.70	Cap'l Spending per sh	7.70
12.77	13.36	13.68	14.37	14.55	15.54	16.27	16.94	18.17	19.09	23.18	20.28	20.65	20.73	20.67	22.94	24.45	25.00	Book Value per sh D	29.25
35.23	36.29	37.30	42.28	43.45	46.38	47.59	48.79	49.86	50.77	130.42	133.87	136.36	139.43	142.42	159.66	160.40	161.00	Common Shs Outst'g E	162.50
9.4	10.1	11.9	13.1	15.1	14.3	13.7	12.7	13.7	13.8	--	16.8	14.8	20.8	12.7	13.1	Bold figures are		Avg Ann'l P/E Ratio	12.5
.78	.76	.88	.84	.92	.84	.90	.85	.86	.80	--	.96	.96	1.07	.69	.76	Value Line estimates		Relative P/E Ratio	.85
7.4%	7.0%	6.4%	6.7%	6.4%	5.3%	5.3%	5.8%	5.3%	5.0%	4.8%	6.5%	5.7%	5.0%	5.1%	5.2%			Avg Ann'l Div'd Yield	4.6%

CAPITAL STRUCTURE as of 6/30/04

Total Debt $5.3 bill. Due in 5 Yrs $2.7 bill.
LT Debt $5.2 bill. LT Interest $370.0 mill.
(total interest coverage: 3.1x)

Pension Assets-12/03 $1.9 bill. Oblig. $2.3 bill.

Pfd Stock $83.3 mill. Pfd Div'd $5.8 mill.

Common Stock 160,176,000 shs.

MARKET CAP: $6.2 billion (Large Cap)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Revenues ($mill) A							1338.6	1216.3	1432.0	1478.2	1721.9	2954.6	5121.5	6633.1	5970.7	6915.2	6960	7270
Net Profit ($mill)							87.4	91.8	97.2	106.1	d166.9	258.6	300.8	243.7	397.4	424.2	450	470
Income Tax Rate							31.8%	32.0%	28.9%	35.0%	--	34.5%	41.8%	46.4%	36.2%	39.5%	38.0%	38.0%
Net Profit Margin							6.5%	7.6%	6.8%	7.2%	NMF	8.8%	5.9%	3.7%	6.7%	6.1%	6.5%	6.5%
Long-Term Debt Ratio							47.3%	46.4%	43.8%	43.5%	31.8%	37.5%	59.6%	61.2%	63.3%	60.0%	56.5%	56.5%
Common Equity Ratio							52.2%	53.2%	55.8%	56.5%	59.4%	60.6%	39.2%	37.7%	35.7%	39.1%	42.5%	42.5%
Total Capital ($mill)							1482.8	1553.8	1624.4	1714.1	5089.9	4482.1	7175.0	7672.3	8252.5	9356.9	9250	9460
Net Plant ($mill)							1405.3	1512.6	1698.1	1810.6	3778.3	4240.0	6358.3	6605.9	7217.6	8894.3	7000	7300
Return on Total Cap'l							7.5%	7.5%	7.4%	7.3%	NMF	7.1%	5.3%	4.5%	6.2%	5.8%	6.5%	6.5%
Return on Shr. Equity							11.2%	11.0%	10.7%	10.9%	NMF	9.2%	10.4%	8.2%	13.1%	11.3%	11.5%	11.5%
Return on Com Equity							11.2%	11.1%	10.7%	10.9%	NMF	8.2%	10.0%	8.2%	13.3%	11.4%	11.5%	11.5%
Retained to Com Eq							3.0%	2.9%	2.9%	3.3%	NMF	1.4%	NMF	NMF	4.8%	3.9%	4.0%	4.5%
All Div'ds to Net Prof							73%	74%	73%	70%	NMF	110%	86%	103%	65%	66%	65%	62%

Revenues ($mill) A — 9000; Net Profit ($mill) — 565; Income Tax Rate — 39.0%; Net Profit Margin — 6.3%; Long-Term Debt Ratio — 54.5%; Common Equity Ratio — 44.5%; Total Capital ($mill) — 10650; Net Plant ($mill) — 8000; Return on Total Cap'l — 7.0%; Return on Shr. Equity — 11.5%; Return on Com Equity — 12.0%; Retained to Com Eq — 5.0%; All Div'ds to Net Prof — 56%

CURRENT POSITION

(SMILL.)	2002	2003	6/30/04
Cash Assets	170.6	205.8	818.1
Other	2045.9	2181.1	1702.6
Current Assets	2216.5	2386.9	2520.7
Accts Payable	1061.6	1141.6	738.1
Debt Due	927.1	483.4	56.5
Other	231.5	223.8	266.1
Current Liab.	2220.2	1848.8	1060.7
Fix. Chg. Cov.	289%	315%	300%

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	6.0%	13.5%	4.0%
"Cash Flow"	8.0%	17.0%	5.5%
Earnings	4.5%	21.0%	6.5%
Dividends	-3.0%	4.0%	1.0%
Book Value	4.0%	1.5%	5.5%

QUARTERLY REVENUES ($ mill.) A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	2575.1	1339.3	1102.4	1616.3	6633.1
2002	1871.6	1216.1	1079.8	1803.2	5970.7
2003	2512.5	1408.2	1131.8	1862.7	6915.2
2004	2595.6	1365.8	1100	1898.6	6960
2005	2650	1450	1160	2010	7270

EARNINGS PER SHARE A B

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	1.61	d.06	d.26	.43	1.72
2002	1.51	.20	.02	1.02	2.75
2003	1.53	d.05	.07	1.07	2.62
2004	1.53	.28	d.06	1.00	2.75
2005	1.55	.25	.02	1.03	2.85

QUARTERLY DIVIDENDS PAID A C■

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.445	.445	.445	.445	1.78
2001	.445	.445	.445	.445	1.78
2002	.445	.445	.445	.445	1.78
2003	.445	.445	.445	.445	1.78
2004	.445	.445	.445		

BUSINESS: KeySpan Corp. is a holding company created 5/98, via the merger of KeySpan Energy (formerly Brooklyn Union) and Long Island Lighting. Acq. Eastern Enterprises 11/8/00, making KeySpan the largest gas distributor in the Northeast, serving most of New York City and nearby Long Island, and New England. Has 2.5 mil. gas meters; its market is mainly one-family homes and apartments. Also generates electricity and operates transmission/distr. sys. by contract with L.I. Power Author. Parent owns 23.5% of Houston Exploration; 20% of Iroquois Pipeline. Non-regulated subs. market gas supplies, sell int'l energy mgmt. svcs. Has 13,000 empls. Chrmn.: R.B. Catell. Inc.: NY. Address: 1 MetroTech Center, Brooklyn, NY 11201. Telephone: 718-403-1000. Web: www.keyspanenergy.com.

KeySpan is improving its financial profile. As a largely state-regulated enterprise, KeySpan has to operate with a balance sheet leveraged with senior capital. Gas distribution and power production are very capital-intensive businesses. Since the larger gas system, in particular, has no direct competition, regulators require that it finance heavily with debt—on which the interest rate is much less than the return allowed on equity capital—in order to keep charges to ratepayers as low as possible. But KeySpan, overall, has long operated with too much debt ahead of common equity, making the stock a little riskier and precluding a rising dividend. Management has been addressing the problem, and this year it has taken bolder steps to ease the pressure. In several complex financial moves, including the sale of much of its stake in Houston Exploration and a sale-and-leaseback arrangement covering the Ravenswood (New York City) power facility, KeySpan raised enough funds to effect a sizable paydown of debt while adding a bit to shareholders' equity. **The stock remains a good choice for income.** KeySpan's capitalization ratios are the best they've been in many years. We expect management will keep at it to gradually lower the debt component towards a more prudent 50% via asset sales. There is the possibility of some equity financing down the road, though management would have to be careful not to dilute the regulated share earnings. Meanwhile, this year's actions and the prospect of better operating earnings for 2004 from gas distribution, power production, and miscellaneous energy-related services should afford the current quarterly dividend an ample safeguard.

The current dividend yield is moderately above the gas-stock average, reflecting the absence of a growing payout. In general, gas-utility stocks have lately been getting a stronger underpinning. KeySpan's higher market value has narrowed its yield premium. That might suggest investors believe the company's finances are closer to providing the margin of safety needed to permit a dividend hike. Our take for now is that management may want to play it cautiously and defer raising the payout for several more quarters.
Gerald Holtzman   September 17, 2004

(A) Data for former KeySpan Energy through '97 (years end 9/30); new KeySpan Corp. from '98 on a calendar-year basis.(B) Diluted shs. Excl. nonrecur. gains (charges): '90, ($0.19); '96, $0.52; '97, $0.16; '03, ($0.23); '04, $0.53. Excl. gain (loss) discont. ops.: '00, ($0.02); '01, ($0.14); '02, ($0.14). Next egs. report due late Oct. (C) Dividends historically paid in February, May, August, and November. ■ Div'd reinvestment plan available. (D) Includes deferred charges. At 12/31/03: $19.40 /sh. (E) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	50
Earnings Predictability	10

MIDDLESEX WATER NDQ-MSEX

| | | RECENT PRICE | 17.60 | TRAILING P/E RATIO | 30.3 | RELATIVE P/E RATIO | 1.57 | DIV'D YLD | 3.9% | VALUE LINE | 4706 |

RANKS		9.63 7.75	11.25 8.19	12.88 9.63	19.75 10.50	16.97 12.50	18.73 14.69	20.04 13.73	21.23 15.77	21.81 16.85		High Low
PERFORMANCE	3 Average											
Technical	3 Average											
SAFETY	2 Above Average											
BETA .50	(1.00 = Market)											

Financial Strength	B++
Price Stability	95
Price Growth Persistence	75
Earnings Predictability	70

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
SALES PER SH	4.52	4.72	4.39	5.35	5.39	5.67	5.98	6.12	--	
"CASH FLOW" PER SH	.94	1.02	1.02	1.19	.99	1.18	1.20	1.15	.57 A-B	.74 C/NA
EARNINGS PER SH	.60	.67	.71	.76	.51	.66	.73	.61	--	
DIV'DS DECL'D PER SH	.55	.57	.58	.60	.61	.62	.63	.65	--	
CAP'L SPENDING PER SH	.73	1.20	2.66	2.33	1.32	1.25	1.59	1.87	--	
BOOK VALUE PER SH	5.85	6.00	6.80	6.95	6.98	7.11	7.39	7.60	--	
COMMON SHS OUTST'G (MILL)	8.41	8.54	9.82	10.00	10.11	10.17	10.36	10.48	26.3	23.8/NA
AVG ANN'L P/E RATIO	14.4	13.4	15.2	17.6	28.7	24.6	23.5	30.0	--	
RELATIVE P/E RATIO	.90	.77	.79	1.00	1.87	1.26	1.28	1.71	--	
AVG ANN'L DIV'D YIELD	6.4%	6.3%	5.4%	4.4%	4.2%	3.8%	3.7%	3.5%	--	
SALES ($MILL)	38.0	40.3	43.1	53.5	54.5	59.6	61.9	64.1	--	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.
OPERATING MARGIN	36.0%	37.2%	37.0%	33.9%	32.2%	47.2%	47.1%	44.0%	--	
DEPRECIATION ($MILL)	2.9	3.1	3.8	4.3	4.9	5.3	5.0	5.6	--	
NET PROFIT ($MILL)	5.2	5.9	6.5	7.8	5.3	7.0	7.8	6.6	--	
INCOME TAX RATE	32.8%	34.9%	31.5%	28.8%	33.1%	34.8%	33.3%	32.8%	--	
NET PROFIT MARGIN	13.6%	14.5%	15.1%	14.7%	9.7%	11.7%	12.5%	10.3%	--	
WORKING CAP'L ($MILL)	2.0	d2.9	14.8	6.8	d2.7	d.9	d9.3	d13.3	--	
LONG-TERM DEBT ($MILL)	53.0	52.9	78.0	82.3	81.1	88.1	87.5	97.4	--	
SHR. EQUITY ($MILL)	61.9	56.2	71.7	74.6	74.7	76.4	80.8	83.7	--	
RETURN ON TOTAL CAP'L	6.4%	6.8%	5.7%	6.4%	4.9%	5.6%	6.0%	5.0%	--	
RETURN ON SHR. EQUITY	10.0%	10.4%	9.1%	10.6%	7.1%	9.1%	9.6%	7.9%	--	
RETAINED TO COM EQ	.6%	1.7%	1.8%	2.5%	NMF	5%	-1.3%	NMF	--	
ALL DIV'DS TO NET PROF	92%	85%	81%	78%	121%	94%	87%	106%	--	

A No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 6.0% per year. B Based upon one analyst's estimate. C Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	5.5%	2.5%
"Cash Flow"	3.5%	-5.0%
Earnings	0.5%	-16.0%
Dividends	2.5%	2.5%
Book Value	3.5%	3.0%

Fiscal Year	QUARTERLY SALES ($MILL.)				Full Year
	1Q	2Q	3Q	4Q	
12/31/02	14.3	15.5	17.0	15.1	61.9
12/31/03	15.0	16.0	17.6	15.5	64.1
12/31/04	15.9	17.8			
12/31/05					

Fiscal Year	EARNINGS PER SHARE				Full Year
	1Q	2Q	3Q	4Q	
12/31/01	.08	.18	.23	.17	.66
12/31/02	.12	.18	.24	.19	.73
12/31/03	.11	.17	.22	.11	.61
12/31/04	.09	.18			
12/31/05					

Calendar	QUARTERLY DIVIDENDS PAID				Full Year
	1Q	2Q	3Q	4Q	
2001	.155	.155	.155	.156	.62
2002	.158	.158	.158	.161	.64
2003	.161	.161	.161	.165	.65
2004	.165	.165	.165		

INSTITUTIONAL DECISIONS

	4Q'03	1Q'04	2Q'04
to Buy	24	17	19
to Sell	14	15	13
Hld's(000)	1705	1749	1911

ASSETS ($MILL)	2002	2003	6/30/04
Cash Assets	2.9	3.0	3.0
Receivables	9.2	5.7	10.6
Inventory (Avg cost)	1.2	1.4	1.6
Other	7.0	4.3	1.3
Current Assets	20.3	14.4	16.5
Property, Plant & Equip, at cost	258.3	278.4	--
Accum Depreciation	47.9	47.5	--
Net Property	211.4	230.9	237.5
Other	12.9	17.9	17.0
Total Assets	244.6	263.2	271.0

LIABILITIES ($MILL)			
Accts Payable	2.1	4.8	5.4
Debt Due	18.3	13.6	5.6
Other	9.2	9.3	10.0
Current Liab	29.6	27.7	21.0

LONG-TERM DEBT AND EQUITY
as of 6/30/04

Total Debt $103.9 mill.   Due in 5 Yrs. NA
LT Debt $98.3 mill.
Including Cap. Leases NA
(50% of Cap'l)
Leases, Uncapitalized Annual rentals NA

Pension Liability $5.1 mill. in '03 vs $5.3 mill. in '02

Pfd Stock $4.1 mill.   Pfd Div'd Paid $.3 mill.
(2% of Cap'l)

Common Stock 11,309,486 shares
(48% of Cap'l)

BUSINESS: Middlesex Water Company, through its subsidiaries, engages in the ownership and operation of regulated water utility systems in central and southern New Jersey, and in Delaware, as well as a regulated wastewater utility in southern New Jersey. Its New Jersey water utility system (the Middlesex System) provides water services to retail customers in central New Jersey. The Middlesex System also provides water service under contract to municipalities in central New Jersey. The company operates the water supply system and wastewater system for the city of Perth Amboy in New Jersey in partnership with its subsidiary, Utility Service Affiliates (Perth Amboy), Inc. Its other New Jersey subsidiaries provide water and wastewater services to residents in Southampton Township. The company's Delaware subsidiaries, comprising Tidewater Utilities, Inc. and Southern Shores Water Company, LLC, offer water services to retail customers in New Castle, Kent, and Sussex Counties. Has 209 employees. C.E.O. & President: J. Richard Tompkins. Inc: NJ. Address: 1500 Ronson Road, Iselin, NJ 08830. Tel.: (732) 634-1500. Internet: http://www.middlesexwater.com.   A.O.

October 29, 2004

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-6.78%	-11.85%	0.42%	20.29%	42.78%

N.W. NAT'L GAS NYSE-NWN

| RECENT PRICE | 31.89 | P/E RATIO | 17.8 | (Trailing: 17.8 / Median: 14.0) | RELATIVE P/E RATIO | 1.03 | DIV'D YLD | 4.1% | VALUE LINE |

TIMELINESS 5 Lowered 7/30/04
SAFETY 2 New 7/27/90
TECHNICAL 3 Lowered 9/10/04
BETA .65 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+10%)	6%
Low	25	(-20%)	-1%

Insider Decisions

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

Institutional Decisions

	3Q2003	4Q2003	1Q2004
to Buy	50	57	67
to Sell	45	36	36
Hld's(000)	10645	11210	12425

Percent shares traded 9 6 3

High: 25.8 24.3 22.8 25.9 31.4 30.8 27.9 27.5 26.8 30.7 31.3 33.0
Low: 19.0 18.8 18.3 20.8 23.0 24.3 24.3 19.5 17.8 21.7 23.5 24.0 27.5

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 9/96
Options: Yes

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH INDEX
1 yr.	13.1	13.4
3 yr.	40.0	29.3
5 yr.	—	54.2

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1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		07-09
17.39	15.22	17.02	16.74	14.10	18.15	18.30	16.02	16.86	15.82	16.77	18.17	21.09	25.78	25.07	23.57	24.25	25.75	Revenues per sh	30.00
2.79	2.85	3.22	2.57	3.25	3.74	3.50	3.41	3.86	3.72	3.24	3.72	3.68	3.86	3.65	3.85	3.85	4.15	"Cash Flow" per sh	4.75
1.33	1.58	1.62	.67	.74	1.74	1.63	1.61	1.97	1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.80	2.05	Earnings per sh A	2.40
1.05	1.07	1.10	1.13	1.15	1.17	1.17	1.18	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.33	Div'ds Decl'd per sh B	1.45
2.82	3.36	3.85	3.58	3.73	3.61	4.23	3.02	3.70	5.07	4.02	4.78	3.46	3.23	3.11	4.90	3.70	3.70	Cap'l Spending per sh	4.00
11.25	12.04	12.61	12.23	12.41	13.08	13.63	14.55	15.37	16.02	16.59	17.12	17.93	18.56	18.88	19.52	20.60	21.45	Book Value per sh C	23.50
15.96	17.14	17.41	17.66	19.46	19.77	20.13	22.24	22.56	22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.40	27.75	Common Shs Outst'g D	28.00
10.2	9.8	10.2	28.1	27.0	12.9	13.0	12.9	11.7	14.4	26.7	14.5	12.4	12.9	17.2	15.8	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	12.5
.85	.74	.76	1.79	1.64	.76	.85	.86	.73	.83	1.39	.83	.81	.66	.94	.92			Relative P/E Ratio	.85
7.7%	6.9%	6.7%	5.9%	5.7%	5.2%	5.5%	5.7%	5.2%	4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%			Avg Ann'l Div'd Yield	5.0%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $505.0 mill. Due in 5 Yrs $50.0 mill.
LT Debt $500.1 mill. LT Interest $34.0 mill.
Incl. $5.6 mill. 7¼% debs. due 3/1/12, each conv. into 50.25 com. shs. at $19.90.
(Total interest coverage: 3.0x)

Pension Assets-12/03 $168.3 mill. Oblig. $205.4 mill.

Pfd Stock None

Common Stock 27,343,860 shs.
MARKET CAP $875 million (Small Cap)

	368.3	356.3	380.3	361.8	416.7	455.8	532.1	650.3	641.4	611.3	665	705	Revenues ($mill)	850
	35.5	38.1	46.8	43.1	27.3	44.9	47.8	50.2	43.8	46.0	49.5	56.0	Net Profit ($mill)	67.0
	36.6%	36.8%	36.9%	32.9%	31.0%	35.4%	35.9%	35.4%	34.9%	33.7%	35.0%	35.0%	Income Tax Rate	35.0%
	9.6%	10.7%	12.3%	11.9%	6.6%	9.9%	9.0%	7.7%	6.8%	7.5%	7.4%	7.8%	Net Profit Margin	7.9%
	47.9%	43.5%	41.4%	46.0%	45.0%	46.0%	45.1%	43.0%	47.6%	49.7%	48.0%	48.0%	Long-Term Debt Ratio	48.0%
	45.1%	50.3%	52.8%	49.0%	50.6%	49.9%	50.9%	53.2%	51.5%	50.3%	52.0%	52.0%	Common Equity Ratio	52.0%
	607.7	643.3	657.4	748.0	815.6	861.5	887.8	880.5	937.3	1006.6	1090	1140	Total Capital ($mill)	1270
	654.3	697.2	745.3	827.5	894.7	895.9	934.0	965.0	995.6	1205.9	1280	1320	Net Plant ($mill)	1325
	7.6%	7.7%	8.9%	7.4%	5.0%	6.8%	6.7%	6.9%	5.9%	5.7%	6.0%	6.5%	Return on Total Cap'l	7.0%
	11.2%	10.5%	12.1%	10.7%	6.1%	9.7%	9.8%	10.0%	8.9%	9.1%	9.5%	9.5%	Return on Shr. Equity	10.0%
	11.8%	10.9%	12.7%	11.0%	6.0%	9.9%	10.0%	10.2%	8.5%	9.0%	9.5%	9.5%	Return on Com Equity	10.0%
	3.3%	3.0%	5.0%	3.6%	NMF	2.8%	3.1%	3.5%	1.9%	2.6%	2.5%	3.5%	Retained to Com Eq	4.0%
	74%	74%	63%	70%	118%	74%	70%	67%	79%	72%	72%	65%	All Div'ds to Net Prof	60%

CURRENT POSITION

($MILL.)	2002	2003	6/30/04
Cash Assets	7.3	4.7	7.5
Other	186.7	194.8	121.0
Current Assets	194.0	199.5	128.5
Accts Payable	74.4	86.0	78.7
Debt Due	89.8	85.2	4.9
Other	40.8	43.2	39.5
Current Liab.	205.0	214.4	123.1
Fx. Chg. Cov.	296%	280%	380%

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.5%	8.5%	3.0%
"Cash Flow"	1.5%	1.0%	4.0%
Earnings	5.0%	2.0%	5.5%
Dividends	1.0%	1.0%	2.5%
Book Value	4.0%	3.5%	3.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	217.3	118.2	78.4	236.4	650.3
2002	278.6	101.9	78.7	182.2	641.4
2003	205.5	117.5	69.5	217.8	611.3
2004	254.5	109.7	74.0	226.8	665
2005	265	127	78.0	235	705

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.99	.17	d.22	.94	1.88
2002	1.32	d.13	d.26	.69	1.62
2003	1.01	.17	d.25	.83	1.76
2004	1.24	d.03	d.25	.84	1.80
2005	1.23	.16	d.24	.90	2.05

QUARTERLY DIVIDENDS PAID B

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.31	.31	.31	.31	1.24
2001	.31	.31	.31	.315	1.25
2002	.315	.315	.315	.315	1.26
2003	.315	.315	.315	.325	1.27
2004	.325	.325	.325		

BUSINESS: Northwest Natural Gas Co. (doing business as NW Natural) distributes natural gas at retail to 90 communities, 567,479 customers, in Oregon (96% of revs.) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.4 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline sys. to bring gas to market. Owns local underground storage. Revenue breakdown: residen't'l & comm'l, 84%; ind., 10%; transport. and other, 6%. Employs 1,291. Has about 10,000 com. shrhldrs. Insiders own about 1% of com. Ch. Exec. Off.: M.S. Dodson. Inc.: OR. Addr.: 220 N.W. 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural had a challenging June quarter. Warmer-than-normal weather during the second quarter sent utility earnings sharply lower for the period. The tariffs for the regulated gas system include a weather normalization clause—a provision that sets rates higher or lower to make up for the change in demand due to year-to-year seasonal temperature deviations from the region's historical average. The problem is that this rate design is operative only during the year's coldest months — November through April. As a result, since the normalized tariff isn't in force during much of the June quarter, the bottom line can display wide yearly swings for this period. The difference this time around was a $0.17-a-share dip in utility operating results. The gas distributor also had to give back, in the form of a charge for the quarter, $0.02 a share of profits recorded previously on assets that regulators are now excluding from the allowed rate base. **The recent earnings setback doesn't impair the quality of this income stock.** The weather normalization provision goes into effect again in October, when the 2004-2005 home-heating season begins. Normalization insulates the utility from the adverse financial consequences of warm winters and precludes a windfall profit during periods of extreme cold. But its main purpose is to establish a more predictable revenue flow during the heating season, when the company records all of its annual earnings, and then some. And a revenue level that's on target affords management a better handle on the amount of cash flow that it can expect operations to generate. In this way, the utility's creditworthiness should improve, lowering the cost of debt a bit and making financial planning easier.

The shares are still best held for current income. NW Natural isn't a performance stock. Its support comes mainly from the dividend, which we expect will continue to grow slowly this year and next. On this prospect, the current yield is very near the gas-stock average. We look for management to submit new tariff filings from time to time to recover the cost of new capital investments and to keep the payout ratio at a comfortable level.
Gerald Holtzman   September 17, 2004

(A) Diluted earnings per share. Excludes non-recurring gains: '98, $0.15; '00, $0.11. Next earnings report due late October.
(B) Dividends historically paid in mid-February, mid-May, mid-August, and mid-November. In '99, extra div'd of $0.005/sh. paid Dec. 15. ■ Div'd reinvestment plan available. (C) Includes intangibles. At 12/31/03: $6.66/sh.
(D) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	40
Earnings Predictability	65

PINNACLE WEST NYSE-PNW

RECENT PRICE	**43.23**	
P/E RATIO	**16.2**	(Trailing: 15.7 Median: 12.0)
RELATIVE P/E RATIO	**0.89**	
DIV'D YLD	**4.4%**	

VALUE LINE

			High:	25.3	22.8	28.9	32.3	42.8	49.3	43.4	52.7	50.7	46.7	40.5	43.6	Target Price Range 2007 2008 2009
TIMELINESS	4	Raised 3/28/03	Low:	19.6	16.0	19.6	26.3	27.6	39.4	30.2	25.7	37.7	21.7	28.3	36.3	

SAFETY **1** Raised 5/16/03

TECHNICAL **3** Lowered 9/10/04

BETA .85 (1.00 = Market)

LEGENDS
1.66 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+5%)	6%
Low	40	(-5%)	3%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	0	0
Options	1	0	0	0	0	0	0	0	0
to Sell	1	0	1	0	0	0	0	0	0

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	125	123	99
to Sell	90	93	101
Hld's(000)	67420	67967	68573

Percent shares traded 15 / 10 / 5

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	20.6	12.6
3 yr.	14.2	49.3
5 yr.	35.5	66.7

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1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		07-09
24.11	17.39	18.38	16.95	19.39	19.66	19.28	19.08	20.77	23.52	25.12	28.57	43.50	53.66	28.90	30.87	32.30	34.45	Revenues per sh F	37.75
6.10	3.45	3.27	d1.39	4.70	5.25	5.09	5.16	5.90	7.12	7.34	7.73	7.99	8.72	7.01	7.33	7.65	8.50	"Cash Flow" per sh	10.05
2.15	1.44	.81	d3.90	1.73	1.95	1.99	2.22	2.47	2.76	2.85	3.18	3.35	3.68	2.53	2.52	2.60	3.10	Earnings per sh A	3.35
3.20	.80	--	--	--	.20	.83	.93	1.03	1.13	1.23	1.33	1.43	1.53	1.63	1.73	1.83	1.91	Div'd Decl'd per sh B=	2.15
3.06	3.46	2.98	2.10	2.57	2.69	2.92	3.38	2.95	3.63	3.76	4.05	7.76	12.27	9.81	7.60	5.00	6.25	Cap'l Spending per sh	7.10
23.46	16.31	17.40	15.23	17.00	18.87	20.32	21.49	22.51	23.90	25.50	26.00	28.09	29.46	29.44	31.00	31.75	32.90	Book Value per sh C	36.50
86.72	86.72	86.87	87.01	87.16	87.42	87.43	87.52	87.52	84.83	84.83	84.83	84.83	84.83	91.26	91.29	91.40	91.40	Common Shs Outst'g D	91.40
10.8	8.7	16.3	--	10.8	11.5	9.6	10.8	11.8	11.8	15.2	11.9	11.3	12.0	14.4	14.0	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	12.5
.90	.66	1.21	--	.66	.68	.63	.72	.74	.68	.79	.68	.73	.61	.79	.80			Relative P/E Ratio	.85
13.7%	6.4%	--	--	--	.9%	4.3%	3.9%	3.5%	3.5%	2.8%	3.5%	3.8%	3.5%	4.5%	4.9%			Avg Ann'l Div'd Yield	5.1%

CAPITAL STRUCTURE as of 6/30/04

Total Debt $3329.7 mill. Due in 5 Yrs $827.7 mill.
LT Debt $2933.7 mill.   LT Interest $210.1 mill.
(LT interest earned: 2.7x)

Pension Assets-12/03 $887.3 mill. Oblig. $1.31 bill.

Pfd Stock None

Common Stock 91,318,091 shs. as of 8/4/04
MARKET CAP: $3.9 billion (Mid Cap)

	1685.4	1669.8	1817.8	1995.0	2130.6	2423.4	3690.2	4551.4	2637.3	2817.9	2950	3150	Revenues ($mill) F	3450
	198.8	194.4	198.3	248.7	252.6	270.8	283.6	312.2	215.2	230.6	240	285	Net Profit ($mill)	305
	38.2%	39.7%	39.3%	37.7%	39.5%	38.3%	44.1%	40.6%	39.1%	31.4%	31.0%	31.0%	Income Tax Rate	31.0%
	4.7%	7.2%	7.4%	6.5%	7.4%	4.3%	7.6%	15.3%	20.5%	6.2%	5.0%	5.0%	AFUDC % to Net Profit	5.0%
	55.9%	53.9%	52.0%	50.5%	47.6%	50.0%	45.1%	51.7%	51.8%	50.6%	50.0%	49.0%	Long-Term Debt Ratio	46.5%
	38.3%	40.4%	43.2%	45.6%	50.2%	50.0%	54.9%	48.3%	48.2%	49.4%	50.0%	51.0%	Common Equity Ratio	53.5%
	4633.5	4660.4	4561.1	4442.9	4307.6	4411.8	4337.8	5172.4	5567.9	5727.5	5800	5910	Total Capital ($mill)	6235
	4624.1	4647.1	4655.1	4677.6	4730.6	4778.5	5133.2	5907.3	6479.4	7480.1	7620	7940	Net Plant ($mill)	8255
	6.8%	6.4%	6.2%	7.4%	7.6%	7.9%	8.1%	7.6%	5.4%	5.5%	5.5%	6.5%	Return on Total Cap'l	6.5%
	9.7%	9.0%	9.1%	11.3%	11.2%	12.3%	11.9%	12.5%	8.0%	8.1%	8.0%	9.5%	Return on Shr. Equity	9.0%
	9.8%	9.3%	9.2%	11.6%	11.2%	12.2%	11.9%	12.5%	8.0%	8.1%	8.0%	9.5%	Return on Com Equity E	9.0%
	5.7%	5.0%	4.6%	6.9%	6.4%	7.1%	6.8%	7.3%	2.9%	2.6%	2.0%	3.5%	Retained to Com Eq	3.5%
	49%	51%	54%	44%	45%	42%	43%	41%	64%	68%	70%	62%	All Div'ds to Net Prof	64%

BUSINESS: Pinnacle West Capital Corporation (parent of Arizona Public Service) supplies electricity to approx. 1,780,000 people in 11 of 15 Arizona counties. Electric revenue sources: residential, 50%; commercial, industrial, and other, 50%. Power costs: 36% of electric revenues; labor costs: 13% of total revenues. The mining industry is the largest industrial customer. Energy sources: coal, 20%; nuclear, 15%; gas & other, 11%; purch. power, 54%. Has 7,200 employees; 35,623 stockholders. Reported '03 depreciation rate: 3.4%. Est'd plant age: 7 years. Chairman & CEO: William J. Post. Pres.: Jack E. Davis. Inc.: Arizona. Address: 400 E. Van Buren St., Suite 700, P.O. Box 52132, Phoenix, AZ 85072-2132. Tel.: 602-379-2568. Internet: www.pinnaclewest.com.

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	+3.8	--	+5.1
Avg. Indust. Use (MWH)	733	660	695
Avg. Indust. Revs. per KWH (¢)	5.49	5.57	5.62
Capacity at Peak (Mw)	5725	6490	5802
Peak Load, Summer (Mw)	5687	5803	6332
Annual Load Factor (%)	53.2	52.6	50.9
% Change Customers (yr-end)	+4.1	+3.1	+3.3

Fixed Charge Cov. (%)	375	274	250

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	7.5%	10.5%	Nil
"Cash Flow"	10.5%	2.5%	4.5%
Earnings	--	1.5%	2.5%
Dividends	--	7.5%	4.5%
Book Value	6.0%	4.5%	3.5%

QUARTERLY REVENUES ($ mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	938.8	1294	1574	744.6	4551.4
2002	501.5	618.4	873.0	644.4	2637.3
2003	552.7	683.3	847.7	734.2	2817.9
2004	574.4	722.7	886.8	766.1	2950
2005	630	770	930	820	3150

EARNINGS PER SHARE A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.70	.79	1.77	.42	3.68
2002	.63	.89	1.19	d.18	2.53
2003	.22	.60	1.20	.50	2.52
2004	.33	.78	1.15	.34	2.60
2005	.40	.80	1.40	.50	3.10

QUARTERLY DIVIDENDS PAID B=

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.35	.35	.35	.375	1.43
2001	.375	.375	.375	.40	1.53
2002	.40	.40	.40	.425	1.63
2003	.425	.425	.425	.45	1.73
2004	.45	.45	.45	.475	

Pinnacle West has an agreement with outside parties covering its electric rate filing. The settlement calls for an increase of $75.5 million, down from the requested $175 million. Furthermore, it lowers the allowed return on equity from the present 11.25% to 10.25% and provides for a capital structure of 55% long-term debt and 45% common equity for ratemaking purposes. (The company had sought a 50/50 split.) On the plus side, the parties recommend that PNW's APS regulated utility be allowed to acquire unregulated Pinnacle West Energy's (PWE) five plants and place them in the rate base at a value of $700 million. In exchange, APS will forego any present or future claims of stranded costs related to PWE assets. The Arizona regulators are expected to act on the settlement by yearend.

The noncore subsidiaries are average performers. SunCor, a real estate developer and landowner in Arizona, contributed $55 million to corporate net in 2003, but may earn somewhat less this year. It plans sales of up to $100 million by the end of 2005 and will transfer the proceeds to its parent rather than reinvesting in housing development. El Dorado, PNW's investment arm, which earned $7 million last year, may only break even in 2004. It has an agreement to sell its stake in a company specializing in nuclear fuel technology for $16 million, for a profit of $6 million, and will then limit investments to fields related to economic development.

Earnings may be a tad higher this year. PNW will benefit from lower regulatory asset amortization and customer growth. Other pluses include the absence of 2003's Cholla 3 coal-fired plant's forced outage and the expiration last June 30th of five years of rate reductions. But these gains will be largely offset by increased costs related to placing new plants in service. On balance, we estimate earnings of $2.60 a share in 2004. The pending rate order suggests substantial improvement next year. For now, the stock is untimely.

Dividends are growing at a healthy rate. A low payout ratio and our projection of steady earnings gains to 2007-2009 point to above-average dividend hikes over the same period. Utility investors might consider these high-quality shares.

Arthur H. Medalie   *November 12, 2004*

(A) Diluted egs. Excl. nonrecur.: '88, ($2.10); '91, ($4.68); '93, 22¢; '94, 31¢; '95, net 6¢; '99, ($1.20); '02, (77¢); excl. discont.: '89, ($7.80); '90, 31¢; '91, $1.76; '92, 7¢; '99, ($1.97); '00.

(B) Next egs. rpt. due late Jan. B) Div'ds historically paid in early Mar., early June, early Sept., and early Dec. ∎ Reinvest. plan avail. (C) Incl. def. chgs. In '03: $3.02/sh. (D) In mill.

(E) Rate base: Fair value. Rate all'd on com. eq. in '98: 11.25%; earn. on avg. com. eq. in '03: 8.4%. Regul. Clim.: Avg. (F) Excl. sales tax begin. '94.

Company's Financial Strength	A
Stock's Price Stability	80
Price Growth Persistence	70
Earnings Predictability	65

PNM RESOURCES NYSE-PNM

| RECENT PRICE | 24.02 | P/E RATIO | 17.3 (Trailing: 17.6 / Median: 10.0) | RELATIVE P/E RATIO | 0.95 | DIV'D YLD | 2.7% | VALUE LINE |

TIMELINESS	3	Raised 11/5/04	
SAFETY	2	Raised 8/16/02	
TECHNICAL	2	Raised 10/22/04	
BETA	.85	(1.00 = Market)	

LEGENDS
— 2.18 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 6/04
Options: No
Shaded area indicates recession

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	25	(+5%)	4%
Low	20	(-15%)	-1%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	0	0
Options	5	0	3	3	0	1	0	0	2
to Sell	4	0	3	3	0	1	0	0	1

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	69	83	74
to Sell	57	52	53
Hld's(000)	49740	52732	53012

Percent shares traded: 24 / 16 / 8

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	27.2	12.6
3 yr.	-17.5	49.3
5 yr.	19.0	66.7

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
13.44	14.61	13.65	13.68	13.60	13.95	14.44	14.10	18.12	17.43	18.96	27.46	40.09	19.92	24.11	26.30	27.50		Revenues per sh	30.80
2.77	2.43	1.64	1.76	2.10	2.34	2.55	2.38	2.61	2.58	3.04	2.82	3.16	4.31	2.83	3.05	3.40	3.55	"Cash Flow" per sh	3.95
1.31	1.15	.21	.21	.50	.81	1.11	.91	1.15	1.25	1.50	1.29	1.55	2.61	1.07	1.15	1.40	1.45	Earnings per sh A	1.55
1.25	.25	--	--	--	--		.24	.42	.51	.53	.53	.53	.57	.57	.61	.63	.66	Div'd Decl'd per sh B•	.74
1.38	1.18	1.30	1.28	1.52	1.61	1.90	1.70	1.42	2.05	2.06	1.56	2.50	4.51	4.09	2.78	2.30	2.00	Cap'l Spending per sh	2.60
12.02	12.01	11.57	11.79	10.00	8.86	10.08	11.22	12.04	12.84	13.75	14.74	15.76	17.25	16.60	17.84	18.60	19.35	Book Value per sh C	21.60
62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	61.05	58.68	58.68	58.68	60.39	60.50	60.50	Common Shs Outst'g D	61.00
62.66	7.9	7.8	34.7	29.1	16.5	9.5	7.5	10.6	11.0	10.0	9.8	9.5	8.5	7.3	15.1	14.7	Bold figures are Value Line estimates	Avg Ann'l P/E Ratio	15.0
	.66	.59	2.58	1.86	1.00	.56	.49	.71		.69	.58	.51	.54	.55	.37	.82	.84	Relative P/E Ratio	1.00
12.0%	2.8%	--	--	--	--			1.9%	3.3%	3.5%	4.4%	4.1%	2.8%	3.5%	3.6%			Avg Ann'l Div'd Yield	3.2%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $1047.8 mill. Due in 5 Yrs $362.5 mill.
LT Debt $985.3 mill. LT Interest $59.4 mill.
(LT interest earned: 3.3x)
Pension Assets-12/03 $425.7 mill. Oblig. $463.8 mill.
Pfd Stock $12.8 mill. Pfd Div'd $.6 mill.
128,000 shs. 4.58%, $100 par w/o mandatory redemption.
Sinking fund began 2/1/84.

Common Stock 60,421,857 shs. as of 7/30/04

MARKET CAP: $1.5 billion (Mid Cap)

	904.7	808.5	883.4	1135.3	1092.4	1157.5	1611.3	2352.1	1169.0	1455.7	1590	1665	Revenues ($mill)	1880
	75.7	60.9	72.6	79.3	105.2	79.9	92.7	156.3	64.3	68.9	85.0	88.0	Net Profit ($mill)	95.0
	36.9%	45.5%	35.2%	37.1%	34.9%	34.6%	44.5%	34.2%	24.5%	29.0%	29.0%	29.0%	Income Tax Rate	29.0%
	.4%	--	--	--	--	--	--	--	--	1.7%	2.0%	2.0%	AFUDC % to Net Profit	2.0%
	51.5%	50.5%	48.2%	46.6%	53.2%	52.0%	50.4%	48.2%	49.8%	47.5%	46.5%	45.5%	Long-Term Debt Ratio	42.5%
	43.2%	48.7%	50.9%	52.5%	45.4%	47.3%	48.9%	51.1%	49.5%	51.9%	53.0%	54.0%	Common Equity Ratio	57.0%
	1460.5	1444.5	1481.0	1531.2	1896.4	1901.2	1891.3	1978.7	1966.9	2077.3	2125	2170	Total Capital ($mill)	2320
	1696.7	1574.4	1552.7	1573.2	1593.8	1582.4	1617.3	1781.0	1867.3	2194.4	2210	2205	Net Plant ($mill)	2145
	7.4%	6.2%	6.6%	6.7%	6.9%	5.9%	6.6%	9.5%	4.7%	4.7%	5.5%	5.5%	Return on Total Cap'l	5.5%
	10.7%	8.5%	9.5%	9.7%	11.8%	8.8%	9.9%	15.3%	6.5%	6.3%	7.5%	7.5%	Return on Shr. Equity	7.0%
	11.0%	7.9%	9.5%	9.8%	12.1%	8.8%	10.0%	15.4%	6.5%	6.3%	7.5%	7.5%	Return on Com Equity E	7.0%
	11.0%	7.9%	7.6%	6.5%	8.4%	5.2%	6.5%	12.3%	3.1%	3.0%	4.0%	4.0%	Retained to Com Eq	4.0%
	8%	8%	21%	34%	31%	42%	35%	20%	53%	53%	45%	46%	All Div'ds to Net Prof	48%

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	+2.3	+2.1	+2.1
Avg. Indust. Use (MWH)	4252	5186	4566
Avg. Indust. Revs. per KWH (¢)	5.16	5.16	5.00
Capacity at Peak (Mw)	1521	1742	1742
Peak Load, Summer (Mw)	1397	1456	1661
Annual Load Factor (%)	69.8	67.5	64.5
% Change Customers (yr-end)	+2.4	+1.5	+3.6

| Fixed Charge Cov. (%) | 481 | 177 | 231 |

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	7.5%	11.0%	1.5%
"Cash Flow"	5.0%	4.5%	2.5%
Earnings	12.5%	4.5%	-5%
Dividends	--	8.0%	4.5%
Book Value	5.5%	6.0%	4.0%

Cal- endar	QUARTERLY REVENUES ($ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	736.5	666.1	621.9	327.6	2352.1
2002	314.0	264.6	289.4	301.0	1169.0
2003	387.7	340.2	385.2	342.6	1455.7
2004	443.7	365.6	410	370.7	1590
2005	460	385	430	390	1665

Cal- endar	EARNINGS PER SHARE A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	1.07	.83	.59	.12	2.61
2002	.42	.19	.30	.16	1.07
2003	.35	.29	.27	.24	1.15
2004	.41	.28	.45	.26	1.40
2005	.40	.30	.47	.28	1.45

Cal- endar	QUARTERLY DIVIDENDS PAID B•				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2000	.133	.133	.133	.133	.53
2001	.133	.133	.133	.133	.53
2002	.133	.147	.147	.147	.57
2003	.147	.153	.153	.153	.61
2004	.153	.16	.16	.16	

BUSINESS: PNM Resources, parent of Public Service Company of New Mexico, sells electricity (75% of revenues), gas (25%), other less than (1%) in north-central New Mexico (population: 1,300,000). Largest customer: City of Albuquerque. Electric revenue breakdown: residential, 36%; commercial, 45%; industrial, 12%; other, 7%. Area's military establishments are major customers. Fuels: coal, 68%; nuclear, 30%; gas/oil, 2%. Fuel costs: 55% of revs.; labor costs: 16%. '03 depreciation rate: 3.3%. Est'd plant age: 9 years. Has 2,637 employees, 14,762 stockholders. Chairman, Chief Executive Officer & President: Jeffry E. Sterba. Incorp.: New Mexico. Address: 414 Silver Avenue, South West, Albuquerque, New Mexico 87103. Telephone: 505-241-2477. Internet: www.pnm.com.

PNM Resources has an agreement to buy privately held TNP Enterprises. It would purchase all of TNP's outstanding common shares for $189 million, with equal amounts of cash and PNM common stock. It would also assume $835 million of TNP's net debt and senior redeemable cumulative preferred stock. TNP provides transmission and distribution electric services in Texas and in southern New Mexico. It owns no generating assets. In the first full year after closing, PNM expects overhead cost reductions will lift earnings by 10% and free cash flow by 20%. The transaction is subject to various federal and state commission approvals. Closing is targeted for the summer of 2005. We won't include the acquisition in our estimates until it is consummated.

The company has issued requests for power. It seeks up to 296 megawatts (mw) of peaking and intermediate load capacity starting in 2006. Some 165 mw of summer capacity will be needed in the northern part of New Mexico and 131 mw in the south. The request results not only from customer growth but from a 15% reserve margin required by the state commission. (The current margin is only 5%.) The company expects to notify successful bidders by November 10th. A portion of the additional power will be available for expansion of PNM's thriving wholesale marketing operations.

Earnings are on an upward path. New long-term power contracts and higher prices are boosting wholesale operations. Too, retail energy sales continue to rise. PNM will also benefit from the absence of last year's one-time charge of $0.24 a share for the call premium paid on retired debt and from 2004's bond refinancings at lower rates. A full year of the $22 million gas rate increase in June, 2003 is another plus. All told, we estimate a 22% rise in 2004 earnings, to $1.40 a share, and a modest gain next year.

Income-oriented investors will likely fare better elsewhere. Though a low payout ratio and our projection of modest earnings gains from the current level to 2007-2009 point to above-average dividend growth over that timeframe, this stock's yield will probably remain below the group average 3 to 5 years out.
Arthur H. Medalie   November 12, 2004

(A) EPS diluted. Next egs rep't due late Jan. Excl. nonrecur. gains (losses): '88, ($3.21); '90, (37¢); '92, ($2.28); '93, ($1.90); '94, 7¢; '95, net 23¢; '97, 3¢; '98, net (16¢); '99, 5¢; '00, 14¢; '01, (10¢); '03, 45¢. (B) Div'ds historically paid in mid-Feb, mid-May, mid-Aug, and mid-Nov. •Div'd reinvest. plan avail. (C) Incl. intang. in '03: $7.15/sh. (D) In mill. (E) Rate base: net orig. cost. Elect. ROE allow. in '90: 12.52%; earned on avg. com. eq. '03: 6.7%. Regul. Clim.: Avg.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	60
Earnings Predictability	50

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SOUTHERN CO. NYSE-SO

RECENT PRICE	33.25	
P/E RATIO	16.2 (Trailing: 16.5 Median: 14.0)	
RELATIVE P/E RATIO	0.86	
DIV'D YLD	4.4%	

VALUE LINE

TIMELINESS	3	Raised 8/17/04
SAFETY	2	Lowered 12/8/00
TECHNICAL	3	Lowered 3/12/04
BETA	.65 (1.00 = Market)	

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+5%)	6%
Low	25	(-25%)	-1%

High: 23.6 22.1 25.0 25.9 28.3 31.6 29.6 35.0 35.7 31.1 32.0 33.4
Low: 18.5 17.3 19.4 21.1 19.9 23.9 22.1 20.4 20.9 23.2 27.0 27.4

Target Price Range 2007 | 2008 | 2009

LEGENDS
— 1.04 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 3/94
Options: Yes
Shaded area indicates recession

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	4	1	0	1	0	0	3	1
to Sell	0	4	1	0	1	0	0	3	1

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	265	264	205
to Sell	195	211	231
Hld's(000)	263149	269909	280819

Percent shares traded: 6 4 2

% TOT. RETURN 10/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	11.1	12.6
3 yr.	54.8	49.3
5 yr.	49.4	66.7

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
12.63	13.70	15.30	18.41	16.32	17.39	14.76	14.53	14.71	15.31	16.00	16.35	Revenues per sh A	17.65
3.22	3.52	3.64	3.90	4.25	4.17	3.89	3.54	3.45	3.54	3.50	3.65	"Cash Flow" per sh	4.10
1.52	1.66	1.68	1.58	1.73	1.83	2.01	1.61	1.85	1.97	2.00	2.10	Earnings per sh B	2.45
1.18	1.22	1.26	1.30	1.34	1.34	1.34	1.34	1.36	1.39	1.42	1.46	Div'd Decl'd per sh C	1.70
2.34	2.09	1.82	2.71	2.87	3.84	3.26	3.74	3.79	2.72	2.95	3.20	Cap'l Spending per sh	3.00
12.46	13.09	13.61	14.08	14.02	13.82	15.67	11.42	12.15	13.13	13.75	14.65	Book Value per sh D	17.40
657.00	670.00	677.00	685.00	698.63	666.00	682.00	699.00	716.90	734.80	740.00	750.00	Common Shs Outst'g E	786.60
12.9	13.2	13.8	14.0	15.7	14.3	13.2	14.6	14.6	14.8	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	13.0
.85	.88	.86	.81	.82	.82	.86	.75	.80	.86			Relative P/E Ratio	.85
6.0%	5.6%	5.5%	5.9%	4.9%	5.1%	5.0%	5.7%	5.0%	4.7%			Avg Ann'l Div'd Yield	5.3%
8297.0	9180.0	10358	12611	11403	11585	10066	10155	10549	11251	12250	12250	Revenues ($mill) A	13750
1076.0	1191.0	1234.0	1245.0	1372.0	1457.0	1501.0	1306.0	1510.0	1611.0	1535	1595	Net Profit ($mill)	1930
38.9%	39.2%	37.8%	36.9%	24.1%	25.6%	31.0%	29.9%	25.9%	29.3%	30.0%	30.0%	Income Tax Rate	32.0%
2.7%	2.1%	1.9%	1.6%	1.8%	1.9%	--	--	1.5%	1.6%	3.5%	2.0%	AFUDC % to Net Profit	1.5%
44.1%	44.9%	42.8%	46.4%	45.9%	46.2%	37.1%	43.8%	43.1%	43.1%	53.5%	52.5%	Long-Term Debt Ratio	49.0%
47.6%	47.4%	49.7%	43.5%	42.9%	37.8%	50.6%	42.2%	43.4%	43.6%	44.0%	45.0%	Common Equity Ratio	49.0%
17211	18510	18553	22158	22817	24372	21147	18925	20086	22135	23250	24300	Total Capital ($mill)	27650
21117	23026	23269	23652	24124	24544	21622	23084	24642	27534	28975	30545	Net Plant ($mill)	35215
7.9%	7.9%	8.1%	7.1%	7.6%	7.8%	8.4%	8.1%	8.5%	8.5%	8.0%	8.0%	Return on Total Cap'l	8.0%
11.2%	11.7%	11.6%	10.5%	11.1%	11.5%	11.3%	12.3%	13.2%	13.5%	14.0%	14.0%	Return on Shr. Equity	13.5%
12.1%	12.6%	12.2%	11.2%	12.2%	13.6%	12.3%	14.0%	15.1%	14.9%	14.5%	14.5%	Return on Com Equity F	14.0%
2.7%	3.3%	3.0%	2.0%	2.7%	3.6%	4.1%	2.5%	4.1%	4.5%	4.0%	4.5%	Retained to Com Eq	4.0%
79%	75%	77%	84%	81%	77%	71%	85%	76%	73%	73%	70%	All Div'ds to Net Prof	70%

In September 2000, Southern conducted an initial public offering in its global independent power marketing and trading subsidiary, called Mirant. Issuing 66.7 million shares, the company and Mirant shared $1.8 billion in gross proceeds. In April 2001, management spun off the remaining 80.3% stake in Mirant to Southern investors; 0.4 of a common share in the subsidiary was distributed for each common share in the parent held. Mirant Corp. filed for Chapter 11 bankruptcy protection in July 2003.

CAPITAL STRUCTURE as of 9/30/04
Total Debt $13,520 mill. Due in 5 Yrs $6,655 mill.
LT Debt $12,707 mill. LT Interest $570 mill.
(LT interest earned: 4.6x)

Pension Assets-12/03 $5.2 bill. Oblig. $4.6 bill.
Pfd Stock $569.7 mill. Pfd Div'd $29.6 mill.
Incl. 4.20%-7.00%, cum. sub. pfd. ($100 par);
5.20%- 5.83%, cum. sub. pfd ($25 par); 4.95%
cum. sub. pfd. ($100,000 liq. val.).

Common Stock 739,686,919 shs.
MARKET CAP: $24.6 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	-3.2	+4.5	Nil
Avg. Indust. Use (MWH)	3778	3847	3887
Avg. Indust. Revs. per KWH (¢)	4.05	3.86	3.94
Capacity at Peak (Mw)	34579	36353	38679
Peak Load, Summer (Mw)	29700	32355	32949
Annual Load Factor (%)	62.0	51.1	62.0
% Change Customers (yr-end)	+1.4	+1.8	+1.7

Fixed Charge Cov. (%)	257	295	332

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	1.5%	-2.5%	3.0%
"Cash Flow"	1.5%	-2.5%	2.5%
Earnings	2.0%	1.5%	5.0%
Dividends	2.0%	1.0%	4.0%
Book Value	.5%	-2.5%	6.0%

QUARTERLY REVENUES (mill)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	2270	2561	3165	2159	10155
2002	2214	2630	3248	2457	10549
2003	2548	2845	3318	2540	11251
2004	2732	3009	3441	2668	11850
2005	2825	3100	3575	2750	12250

EARNINGS PER SHARE B

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.26	.40	.79	.16	1.61
2002	.32	.47	.82	.24	1.85
2003	.41	.49	.85	.22	1.97
2004	.45	.47	.87	.21	2.00
2005	.47	.50	.90	.23	2.10

QUARTERLY DIVIDENDS PAID = C

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.335	.335	.335	.335	1.34
2001	.335	.335	.335	.335	1.34
2002	.335	.335	.343	.343	1.36
2003	.343	.343	.35	.35	1.39
2004	.35	.35	.358	.358	

BUSINESS: The Southern Company's five operating subsidiaries supply electricity to about 122,000 square miles of Georgia (48% of 2003 revenues); Alabama (36%); Florida (8%); and Mississippi (8%). Revenue distrib. ('03): residential, 40%; industrial, 24%; commercial, 35%; other, 1%. Textile, chemical, and paper companies are largest customer groups, accounting for the bulk of industrial revenues. Fuel sources ('03): coal, 66%; nuclear, 15%; hydro, 4%; gas, 9%; purch. pwr, 6%. Fuel & Purchased Power costs: 33% of '03 electricity revs. Has 25,760 employees, 134,070 shareholders of record. '03 deprec. rate: 2.8%. Chrmn, Pres., and CEO: David M. Ratcliffe. Inc.: Del. Addr.: 270 Peachtree St. N.W., Atlanta, GA 30303. Tel.: 404-506-5000. Internet: www.southernco.com.

Southern Co.'s 2005 earnings prospects appear bright ... We expect the company to achieve its annual share-net growth goal of 5%. Retail utility operations are benefiting from a recovery in the Southeast. Most notably, strength in Alabama's auto, steel, and chemical sectors is driving power sales higher. A healthy industrial base is helping to enlarge the number of residential and commercial ratepayers across Southern's service territory. Efficient management of low-cost power plants and effective expense controls are producing dependable earnings streams. Assuming that temperatures stay close to the historical norm and that the hurricane season is easier, year-over-year earnings comparisons should be positive, especially in the September period. The wholesale business should also do well next year. Southern has been busy lining up long-term supply pacts with cooperatives, municipalities, and power distribution companies. This business likely will account for two percentage points of total yearly earnings advance.

... as long as the company continues to receive favorable rate treatment. Up to now, Southern has secured very reasonable rate orders in most of its state jurisdictions. Currently, Georgia Power has a case on file for about a $280 million annual revenue hike, based on a 12.5% return on equity. The utility needs to recoup higher purchase power, operating and maintenance, system expansion, and depreciation costs. The state public service commission staff has recommended a $57 million rate cut and only a 9.25% rate of return. A final ruling is due later this month. Our estimates reflect a fair decision (and the inclusion of the McIntosh plant in the rate base). Separately, Southern is still waiting for the Federal Energy Regulatory Commission to rule on whether or not it has an unfair advantage in the wholesale arena. Given its extensive transmission network, the company has a tough case to prove, and faces more modest returns on investment. All in all, **The stock is a worthwhile current income holding, but the high share price limits potential total returns to 2007-2009.** That's despite our expectation of positive rate treatment.
David M. Reimer   December 3, 2004

SOUTHWEST WATER NDQ-SWWC

RECENT PRICE	12.43	TRAILING P/E RATIO	24.4	RELATIVE P/E RATIO	1.27	DIV'D YLD	1.6%	VALUE LINE	4708	

RANKS	4.09 2.16	5.46 2.83	6.17 3.81	10.14 4.01	9.12 5.65	11.28 7.65	13.64 8.43	12.38 8.96	15.79 11.35	High Low

PERFORMANCE 3 Average
Technical 3 Average
SAFETY 3 Average
BETA .65 (1.00 = Market)

LEGENDS
— 12 Mos Mov Avg
···· Rel Price Strength
3-for-2 split 10/99
5-for-4 split 1/01
5% Div 9/01
5% Div 12/02
4-for-3 split 1/04
Shaded area indicates recession

Financial Strength B+
Price Stability 75
Price Growth Persistence 95
Earnings Predictability 85

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
SALES PER SH	5.86	6.19	6.20	6.79	8.25	8.99	10.05	11.79	--	
"CASH FLOW" PER SH	.51	.59	.65	.72	.84	.95	.96	1.00	.50 A,B	.55 C/NA
EARNINGS PER SH	.17	.23	.28	.34	.42	.46	.44	.49	--	
DIV'DS DECL'D PER SH	.09	.10	.11	.12	.14	.15	.16	.18	--	
CAP'L SPENDING PER SH	1.04	.82	.87	.58	.61	1.17	1.97	1.25	--	
BOOK VALUE PER SH	2.65	2.78	2.98	3.36	3.79	4.23	4.71	5.40	--	
COMMON SHS OUTST'G (MILL)	11.29	11.47	11.63	11.90	12.69	12.66	13.01	14.67	24.9	22.6/NA
AVG ANN'L P/E RATIO	16.6	15.9	17.2	19.6	17.0	19.8	24.6	21.2		
RELATIVE P/E RATIO	1.04	.97	.89	1.12	1.11	1.01	1.35	1.21		
AVG ANN'L DIV'D YIELD	3.4%	2.7%	2.3%	1.8%	2.0%	1.7%	1.5%	1.7%	--	Bold figures are consensus earnings estimates, and, using the recent prices, P/E ratios.
SALES ($MILL)	66.2	71.0	72.2	80.9	104.7	115.5	130.8	173.0	--	
OPERATING MARGIN	14.6%	16.0%	17.1%	17.0%	16.1%	90.6%	90.8%	12.9%		
DEPRECIATION ($MILL)	3.9	4.2	4.3	4.5	5.3	6.1	6.4	7.5	--	
NET PROFIT ($MILL)	1.9	2.6	3.4	4.2	5.4	6.2	6.0	7.2	--	
INCOME TAX RATE	41.8%	41.6%	39.5%	39.0%	37.0%	38.0%	34.9%	35.9%	--	
NET PROFIT MARGIN	2.9%	3.7%	4.6%	5.2%	5.1%	5.4%	4.6%	4.2%	--	
WORKING CAP'L ($MILL)	d4.1	d6.7	d2.7	1.7	1.2	4.8	d1.6	4.0	--	
LONG-TERM DEBT ($MILL)	30.7	29.8	33.4	33.5	46.4	58.1	81.0	73.1	--	
SHR. EQUITY ($MILL)	30.4	32.4	35.1	40.6	48.8	55.0	61.8	79.7	--	
RETURN ON TOTAL CAP'L	5.5%	6.8%	7.1%	7.6%	7.6%	7.6%	5.8%	6.2%	--	
RETURN ON SHR. EQUITY	6.3%	8.0%	9.5%	10.3%	11.1%	11.4%	9.7%	9.0%	--	
RETAINED TO COM EQ	2.9%	4.5%	6.0%	7.0%	7.8%	7.8%	6.3%	5.8%	--	
ALL DIV'DS TO NET PROF	55%	45%	38%	33%	31%	32%	35%	36%	--	

A No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 8.3% per year. B Based upon 4 analysts' estimates. C Based upon 4 analysts' estimates.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	11.0%	17.5%
"Cash Flow"	10.5%	5.5%
Earnings	15.5%	12.5%
Dividends	10.5%	10.5%
Book Value	11.5%	14.5%

Fiscal Year	QUARTERLY SALES ($MILL)				Full Year
	1Q	2Q	3Q	4Q	
12/31/02	28.2	32.7	34.6	35.3	130.8
12/31/03	36.1	41.5	51.4	44.0	173.0
12/31/04	39.7	45.7			
12/31/05					

Fiscal Year	EARNINGS PER SHARE				Full Year
	1Q	2Q	3Q	4Q	
12/31/01	.04	.13	.17	.12	.46
12/31/02	.04	.12	.14	.14	.44
12/31/03	d.01	.14	.23	.13	.49
12/31/04		.15	.23	.13	
12/31/05	.02				

Calendar	QUARTERLY DIVIDENDS PAID				Full Year
	1Q	2Q	3Q	4Q	
2001	.038	.038	.038	.038	.15
2002	.04	.04	.04	.04	.16
2003	.044	.044	.044	.046	.18
2004	.046	.046	.046	.053	.20

INSTITUTIONAL DECISIONS	4Q'03	1Q'04	2Q'04
to Buy	32	33	26
to Sell	14	22	27
Hld's(000)	3590	3915	3985

ASSETS ($MILL)	2002	2003	6/30/04
Cash Assets	1.6	5.4	1.9
Receivables	18.7	19.8	25.5
Inventory	0	0	0
Other	11.5	10.2	11.9
Current Assets	29.8	35.4	39.3
Property, Plant & Equip, at cost	265.9	287.4	--
Accum Depreciation	62.0	67.9	--
Net Property	203.9	219.5	227.7
Other	35.0	41.3	44.8
Total Assets	268.7	296.2	311.8

LIABILITIES ($MILL)	2002	2003	6/30/04
Accts Payable	11.4	11.4	8.2
Debt Due	2.0	2.7	4.1
Other	18.2	17.3	17.1
Current Liab	31.6	31.4	29.4

LONG-TERM DEBT AND EQUITY
as of 6/30/04

Total Debt $64.9 mill   Due in 5 Yrs. NA
LT Debt $50.8 mill
Including Cap. Leases NA
(37% of Cap'l)
Leases, Uncapitalized Annual rentals NA

Pension Liability None in '03 vs. None in '02

Pfd Stock None   Pfd Div'd Paid None

Common Stock 16,563,235 shares
(63% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Southwest Water Co. operates as a regulated public water utility company in the United States. It has two segments, Services and Utility. The Services segment provides water and wastewater facility maintenance services, equipment maintenance and repair, sewer pipeline cleaning, billing and collection services, and state-certified water and wastewater laboratory analysis on a contract basis. It primarily operates in Texas, New Mexico, California, Colorado, Alabama, Mississippi, and Georgia. This segment also provides utility billing services for multiple family housing units. The Utility segment owns and operates rate-regulated public water utilities in California, New Mexico, and Texas, as well as owns and manages wastewater facilities in New Mexico and Texas. In July, the company acquired a Texas utility consisting of 86 water systems and 11 wastewater systems from Tecon Water Holdings, L.P. for approximately $63 million. Has about 1400 employees. Chairman, C.E.O. & President: Anton C. Garnier. Inc.: DE. Address: One Wilshire Building, 624 S Grand Avenue, Ste. 2900, Los Angeles, CA 90017. Tel.: (213) 929-1800. Internet: http://www.swwc.com.   A.Z.

October 29, 2004

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-1.76%	-9.65%	17.61%	26.90%	74.08%

| YORK WATER CO NDQ-YORW | | RECENT PRICE 17.10 | TRAILING P/E RATIO 20.6 | RELATIVE P/E RATIO 1.07 | DIV'D YLD 3.3% | VALUE LINE 4709 |

| | | | 15 33 / 8 50 | 20 17 / 12 30 | 20 23 / 14 00 | 21 04 / 16 50 | High Low |

RANKS

PERFORMANCE	2	Above Average
Technical	3	Average
SAFETY	3	Average
BETA .55	(1.00 = Market)	

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

Financial Strength	B+
Price Stability	70
Price Growth Persistence	NMF
Earnings Predictability	NMF

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
REVENUES PER SH	--	--	--	--	6 07	3 08	3 07	3 25	--	--
"CASH FLOW" PER SH	--	--	--	--	1.79	.88	.86	.97	--	.77/NA
EARNINGS PER SH	--	--	--	--	1 24	.65	.60	.70	.75 A,B	.77 C/NA
DIV'D DECL'D PER SH	--	--	--	--	.98	.51	.53	.55	--	--
CAP'L SPENDING PER SH	--	--	--	--	2 11	1.12	.99	1 61	--	--
BOOK VALUE PER SH	--	--	--	--	10.86	5.69	5.85	6.08	--	--
COMMON SHS OUTST'G (MILL)	--	--	--	--	3.04	6.31	6.36	6.42	--	--
AVG ANN'L P/E RATIO	--	--	--	--	--	17.9	26 9	24.5	22.8	22.2/NA
RELATIVE P/E RATIO	--	--	--	--	--	.92	1.47	1 40	--	--
AVG ANN'L DIV'D YIELD	--	--	--	--	--	4.3%	3.3%	3.2%	--	--
REVENUES ($MILL)	--	--	--	--	18 5	19.4	19 5	20 9	--	Bold figures are consensus
NET PROFIT ($MILL)	--	--	--	--	3.8	4.0	3.8	4.4	--	earnings estimates
INCOME TAX RATE	--	--	--	--	35 7%	35.8%	34 9%	34 8%	--	and, using the
AFUDC % TO NET PROFIT	--	--	--	--	1.5%	2.2%	3.7%	--	--	recent prices,
LONG-TERM DEBT RATIO	--	--	--	--	50 2%	47 7%	46.7%	43 4%	--	P/E ratios.
COMMON EQUITY RATIO	--	--	--	--	49.8%	52.3%	53.3%	56.6%	--	
TOTAL CAPITAL ($MILL)	--	--	--	--	65 2	68 6	69.8	69 0	--	
NET PLANT ($MILL)	--	--	--	--	97.0	102.3	106.7	116.5	--	
RETURN ON TOTAL CAP'L	--	--	--	--	7.8%	7.9%	7 4%	8 5%	--	
RETURN ON SHR EQUITY	--	--	--	--	11.6%	11.2%	10 2%	11 4%	--	
RETURN ON COM EQUITY	--	--	--	--	11.6%	11.2%	10.2%	11.4%	--	
RETAINED TO COM EQ	--	--	--	--	2.5%	2.5%	1 3%	2 8%	--	
ALL DIV'DS TO NET PROF	--	--	--	--	78%	78%	88%	77%	--	

A No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 7.0% per year. B Based upon one analyst's estimate. C Based upon one analyst's estimate.

INDUSTRY: Water Utility

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Revenues	--	6.0%
"Cash Flow"	--	13.0%
Earnings	--	16.5%
Dividends	--	5.0%
Book Value	--	4.0%

Fiscal Year	QUARTERLY SALES ($MILL)				Full Year
	1Q	2Q	3Q	4Q	
12/31/02	4.7	4.9	5.3	4.7	19.5
12/31/03	4.9	5.0	5.8	5 3	20.9
12/31/04	5.4	5.5			
12/31/05					

Fiscal Year	EARNINGS PER SHARE				Full Year
	1Q	2Q	3Q	4Q	
12/31/01	13	.14	.23	.15	.65
12/31/02	14	15	18	.13	.60
12/31/03	.12	.16	.24	.18	70
12/31/04	25	16			
12/31/05					

Calendar	QUARTERLY DIVIDENDS PAID				Full Year
	1Q	2Q	3Q	4Q	
2001	.125	125	125	125	50
2002	13	13	13	13	.52
2003	135	135	135	135	.54
2004	.145	.145	.145	.145	.58

INSTITUTIONAL DECISIONS

	4Q'03	1Q'04	2Q'04
to Buy	5	2	1
to Sell	4	4	6
Hld's(000)	683	661	541

ASSETS ($MILL)	2002	2003	6/30/04
Cash Assets	.0	.0	0
Receivables	2.8	3.2	3.2
Inventory	.5	.6	.7
Other	.4	.3	.7
Current Assets	3.7	4.1	4 6
Property, Plant & Equip, at cost	127 7	139 1	--
Accum Depreciation	21.0	22.6	--
Net Property	106 7	116 5	130.9
Other	8.0	6.9	7.3
Total Assets	118.4	127 5	142.8

LIABILITIES ($MILL)			
Accts Payable	7	17	3.0
Debt Due	2.8	9.9	14.4
Other	2.0	2.4	2.2
Current Liab	5.5	14.0	19.6

LONG-TERM DEBT AND EQUITY
as of 6/30/04

Total Debt $50.0 mill.   Due in 5 Yrs. NA
LT Debt $35.6 mill.
Including Cap. Leases NA
(47% of Cap'l)
Leases, Uncapitalized Annual rentals NA

Pension Liability None in '03 vs $1 7 mill in '02

Pfd Stock None   Pfd Div'd Paid None

Common Stock 6,444,689 shares
(53% of Cap'l)

BUSINESS: York Water Company engages in the impounding, purification, and distribution of water in York County, Pennsylvania. The company has two reservoirs, Lake Williams and Lake Redman, which together hold up to 2.75 billion gallons of water. It supplies water for domestic, commercial, industrial, and fire protection purposes. The company serves approximately 149,000 people in 31 municipalities in York County, Pennsylvania. It supplies through the company's own distribution system to the city of York; the boroughs of North York; West York; Manchester; Mount Wolf; New Salem; Hallam; Jacobus; Loganville; Yorkana; Seven Valleys; East Prospect; Jefferson; Glen Rock; New Freedom, Railroad; and portions of the townships of Manchester, East Manchester, West Manchester, North Codorus, Shrewsbury, North Hopewell, Hopewell, Springettsbury, Spring Garden, Conewago, Springfield, York, Hellam, Windsor, Lower Windsor, Dover, and Jackson. Has 92 employees. C.E.O. & President: William Morris. Inc.: PA. Address: 130 East Market Street, York, PA 17401. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com.   A.Z

October 29, 2004

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-5.21%	-13.50%	5.12%	56.16%	102.10%

Aqua Illinois, Inc. – Woodhaven Lakes Sewer Division
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	6.1 %	6.1 %	6.1 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.5 (2)	0.5 (2)	0.5 (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	6.6 %	6.6 %	6.6 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.0 (3)	0.0 (3)	0.1 (4)
5.	Adjusted Prospective Bond Yield	6.6	6.6	6.7
6.	Equity Risk Premium (5)	4.0	4.2	4.2
7.	Risk Premium Derived Common Equity Cost Rate	10.6 %	10.8 %	10.9 %

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 bonds of 0.48%, rounded to 0.5% from page 4 of this Schedule.

(3) No adjustment necessary as the average Moody's bond rating of the proxy group is A2.

(4) One-third of the average yield spread of Baa over A rated public utility bonds of 0.28% (1 / 3 x 0.28% = 0.09%, rounded to 0.1%) from page 4 of this Schedule in order to reflect the average A3 Moody's bond rating of the proxy group.

(5) From page 5 of this Schedule.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Comparison of Bond Ratings and Business Profile for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	November 2004 Moody's Bond Rating		November 2004 Standard & Poor's Bond Rating				Standard & Poor's Business Position / Profile (2)
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co. (3)	A2	6	A-	7	A-	7	3
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2
Artesian Resources, Inc.	NR	--	NR	--	NR	--	--
California Water Service Group (5)	A2	6	NR	--	A+	5	3
Middlesex Water Company	NR	--	A+	5	A	6	3
York Water Company	NR	--	NR	--	A-	5	2
Average	A2	6.0	A+	5.3	A+	5.6	2.6
Proxy Group of Three Value Line (Standard Edition) Water							
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Service Group (5)	A2	6	NR	--	A+	5	3.0
Average	A2	6.0	A+ / A	5.5	A	5.7	2.7
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance							
AGL Resources, Inc. (6)	A3	7	A-	7	A-	7	2.0
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Services Group (5)	A2	6	NR	--	A+	5	3.0
Cinergy Corp. (6)	Baa1	8	BBB+	8	BBB+	8	5.0
Consolidated Edison, Inc. (7)	A1	5	A	6	A	6	2.0
Dominion Resources, Inc. (8)	A2 / A3	6.5	A- / BBB+	7.5	A- / BBB+	8	6.0
Green Mountain Power Corp.	Baa1	8	BBB	9	BBB	9	5.0
KeySpan Corp. (9)	A2	6	A+	5	A	6	2.0
Middlesex Water Company	NR	--	A+	5	A	6	3.0
Northwest Natural Gas Co.	A2	6	A	6	A	6	1.0
Pinnacle West Capital Corp. (10)	Baa1	8	BBB	9	BBB	9	5.0
PNM Resources, Inc. (11)	Baa2	9	BBB	9	BBB	9	6.0
Southern Company (12)	A1	5	A+	5	A	6	4.0
Southwest Water Company	NR	--	NR	--	NR	--	--
Average	A3	6.7	A	6.7	A-	6.9	3.5

Notes: (1) From page 3 of this Schedule.
(2) From Standard & Poor's U.S. Utilities and Power Ranking List, December 2, 2004.
(3) Ratings and business profile are those of Southern California Water Company
(4) Ratings and business profile are those of Aqua Pennsylvania, Inc.
(5) Ratings and business profile are those of California Water Service Company.
(6) Ratings are business profile are those of Atlanta Gas Light Company.
(7) Ratings and business profile are a composite of those of Consolidated Edison of NY, Orange & Rockland Utilities, and Rockland Electric Co.
(8) Ratings and business profile are a composite of those of Consolidated Natural Gas and Virginia Electric Power.
(9) Ratings and business profile are a composite of those of Boston Gas Co., Colonial Gas Co., and Keyspan Energy Delivery - Long Island.
(10) Ratings and business profile are those of Arizona Public Service Company.
(11) Ratings and business profile are those of Public Service Co. of New Mexico.
(12) Ratings and business profile are a composite of those of Alabama Power Co., Georgia Power Co., Gulf Power Co., Mississippi Power Co., and Savannah Electric & Power Co.

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

Aqua Illinois, Inc. – Woodhaven Lakes Sewer Division
Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

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-

Moody's
Comparison of Interest Rate Trends
for the Three Months Ending October 2004 (1)

Years	Corporate Bonds Aaa Rated	Public Utility Bonds			Spread - Corporate v. Public Utility Bonds			Spread - Public Utility Bonds	
		Aa Rated	A Rated	Baa Rated	Aa (Pub. Util.) over Aaa (Corp.)	A (Pub. Util.) over Aaa (Corp.)	Baa (Pub. Util.) over Aaa (Corp.)	A over Aa	Baa over A
August-04	5.65 %	5.95 %	6.14 %	6.45 %					
September-04	5.46	5.79	5.98	6.27					
October-04	5.47	5.74	5.94	6.17					
Average of Last 3 Months	5.53 %	5.83 %	6.02 %	6.30 %	0.30 %	0.49 %	0.77 %	0.19 %	0.28 %
Average Spread (2)					0.30 %	0.49 %	0.77 %	0.19 %	0.28 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record , November 2004, Vol. 71, No. 11

<u>Aqua Illinois, Inc. – Woodhaven Lakes Sewer Division</u>
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
<u>Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance</u>

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index – 1926-2003 (1)	12.4 %	12.4 %	12.4 %
2.	Arithmetic mean yield on Aaa and Aa Corporate Bonds 1926-2003 (2)	(6.1)	(6.1)	(6.1)
3.	Historical Equity Risk Premium	6.3 %	6.3 %	6.3 %
4.	Forecasted 3-5 year Total Annual Market Return (3)	11.2 %	11.2 %	11.2 %
5.	Prospective Yield an Aaa Rated Corporate Bonds (4)	(6.1)	(6.1)	(6.1)
6.	Forecasted Equity Risk Premium	5.1 %	5.1 %	5.1 %
7.	Average of Historical and Forecasted Equity Risk Premium (5)	5.7 %	5.7 %	5.7 %
8.	Adjusted Value Line Beta (6)	0.66	0.72	0.72
9.	Beta Adjusted Equity Risk Premium	3.8 %	4.1 %	4.1 %

Notes: (1) From Stocks, Bonds, Bills and Inflation – 2004 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL, 2004.

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

(3) From Note 1, page 4 of Aqua Schedule 3.15.

(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 December 1, 2004 (see page 7 of this Schedule). The estimates are detailed below.

Fourth Quarter 2004	5.6 %
First Quarter 2005	5.8
Second Quarter 2005	6.0
Third Quarter 2005	6.2
Fourth Quarter 2005	6.4
First Quarter 2006	6.5
Average	6.1 %

(5) Average of the Historical Equity Risk Premium of 6.3% from Line No. 3 and the Forecasted Equity Risk Premium of 5.1% from Line No. 6 ((6.3% + 5.1%) / 2 = 5.7%).

(6) From page 9 of this Schedule.

2 ■ BLUE CHIP FINANCIAL FORECASTS ■ DECEMBER 1, 2004

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

	History — Average For Week Ending				History — Average For Month			Latest Q	Consensus Forecasts-Quarterly Avg.					
Interest Rates	Nov.19	Nov.12	Nov.5	Oct.29	Oct.	Sep.	Aug.	3Q 2004	4Q 2004	1Q 2005	2Q 2005	3Q 2005	4Q 2005	1Q 2006
Federal Funds Rate	2.00	1.79	1.78	1.74	1.76	1.61	1.43	1.43	2.0	2.4	2.7	3.1	3.4	3.7
Prime Rate	5.00	4.79	4.75	4.75	4.75	4.75	4.42	4.47	5.0	5.4	5.7	6.1	6.4	6.7
LIBOR, 3-mo.	2.32	2.28	2.20	2.14	2.08	1.89	1.73	1.74	2.2	2.6	3.0	3.3	3.7	3.9
Commercial Paper, 1-mo.	2.02	2.00	1.92	1.85	1.79	1.67	1.48	1.48	2.0	2.5	2.8	3.2	3.5	3.8
Treasury bill, 3-mo.	2.13	2.08	1.99	1.91	1.79	1.68	1.50	1.51	2.1	2.4	2.8	3.1	3.4	3.7
Treasury bill, 6-mo.	2.35	2.30	2.21	2.12	2.05	1.91	1.76	1.79	2.3	2.7	3.0	3.3	3.6	3.8
Treasury bill, 1 yr.	2.53	2.47	2.35	2.27	2.23	2.12	2.02	2.08	2.5	2.9	3.2	3.6	3.8	4.0
Treasury note, 2 yr.	2.89	2.82	2.65	2.57	2.58	2.53	2.51	2.56	2.8	3.2	3.5	3.8	4.1	4.3
Treasury note, 5 yr.	3.52	3.53	3.39	3.30	3.35	3.36	3.47	3.51	3.6	3.9	4.2	4.4	4.6	4.8
Treasury note, 10 yr.	4.17	4.22	4.12	4.05	4.10	4.13	4.28	4.30	4.2	4.5	4.8	5.0	5.1	5.2
Treasury note, 20 yr.	4.88	4.95	4.85	4.79	4.85	4.89	5.07	5.07	4.9	5.2	5.4	5.5	5.7	5.8
Corporate Aaa bond	5.48	5.59	5.50	5.42	5.47	5.46	5.65	5.64	5.6	5.8	6.0	6.2	6.4	6.5
Corporate Baa bond	6.18	6.25	6.19	6.15	6.21	6.27	6.46	6.45	6.3	6.6	6.8	6.9	7.1	7.2
State & Local bonds	4.52	4.58	4.45	4.44	4.49	4.56	4.70	4.71	4.6	4.8	4.9	5.1	5.2	5.2
Home mortgage rate	5.74	5.76	5.70	5.64	5.72	5.76	5.87	5.90	5.8	6.0	6.3	6.4	6.6	6.7

	History								Consensus Forecasts-Quarterly Avg.					
Key Assumptions	4Q 2002	1Q 2003	2Q 2003	3Q 2003	4Q 2003	1Q 2004	2Q 2004	3Q 2004	4Q 2004	1Q 2005	2Q 2005	3Q 2005	4Q 2005	1Q 2006
Major Currency Index	100.0	95.1	90.8	90.7	87.8	85.3	88.0	86.5	82.4	81.0	80.3	80.1	81.0	81.3
Real GDP	0.7	1.9	4.1	7.4	4.2	4.5	3.3	3.7	3.7	3.3	3.6	3.6	3.5	3.3
GDP Price Index	2.0	2.7	1.1	1.4	1.6	2.8	3.2	1.3	2.1	2.1	2.0	2.1	2.1	2.2
Consumer Price Index	2.0	3.8	0.7	2.4	0.7	3.5	4.8	1.9	2.9	2.3	2.3	2.4	2.4	2.5

[1]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 November 19, 2004 and Year Ago vs. 4Q 2004 and 1Q 2006 Consensus forecasts

U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield
(Quarterly Average) History   Forecast

Corporate Bond Spreads
As of week ended November 19, 2004

U.S. Treasury Yield Curve
As of week ended November 19, 2004

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
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)
		1
Time Period		1928-2003
1.	Arithmetic Mean Holding Period Returns (2): Standard & Poor's Public Utility Index	10.8 %
2.	Arithmetic Mean Yield on: A Rated Public Utility Bonds	(6.6)
3.	Equity Risk Premium	4.2 %

Notes: (1) S&P Public Utility Index and Moody's Pubilc Utility Bond Average Annual Yields 1928-2003, (US Consultants - Utility Services, 2004).

(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.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Value Line Adjusted Betas for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Value Line Adjusted Beta
Proxy Group of Six C. A. Turner Water Companies	
American States Water Co.	0.70
Aqua America, Inc.	0.75
Artesian Resources Corp.	NA
California Water Service Group	0.70
Middlesex Water Company	0.60
York Water Company	0.55
Average	0.66
Proxy Group of Three Value Line (Standard Edition) Water	
American States Water Co.	0.70
Aqua America, Inc.	0.75
California Water Service Group	0.70
Average	0.72
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	
AGL Resources, Inc.	0.80
American States Water Co.	0.70
Aqua America, Inc.	0.75
California Water Services Group	0.70
Cinergy Corp.	0.80
Consolidated Edison, Inc.	0.60
Dominion Resources, Inc.	0.85
Green Mountain Power Corp.	0.60
KeySpan Corp.	0.75
Middlesex Water Company	0.60
Northwest Natural Gas Co.	0.65
Pinnacle West Capital Corp.	0.85
PNM Resources, Inc.	0.85
Southern Company	0.65
Southwest Water Company	0.65
Average	0.72

NA = Not Available

Source of Information: Value Line Investment Survey,
September 17, October 1, October 29, November 12,
and December 3, 2004

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
of the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
		Traditional Capital Asset Pricing Model		
1.	Risk-Free Rate (1)	5.4 %	5.4 %	5.4 %
2.	Average Company-Specific Market Premium (2)	4.3	4.7	4.7
3.	Capital Asset Pricing Model Derived Company Equity Cost Rate	9.7 %	10.1 %	10.1 %
		Empirical Capital Asset Pricing Model		
4.	Risk-Free Rate (1)	5.4 %	5.4 %	5.4 %
5.	Average Company-Specific Market Premium (3)	4.8	5.1	5.1
6.	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.2 %	10.5 %	10.5 %
7.	Conclusion	10.0 %	10.3 %	10.3 %

Notes: (1) Developed in note 2 of page 4 of this Schedule.

(2) Developed on page 2 of this Schedule.

(3) Developed on page 3 of this Schedule

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 6.5% (1)	CAPM Result Including Risk-Free Rate of 5.4% (2)

Traditional Capital Asset Pricing Model (3)

Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	0.70	4.6 %	10.0 %
Aqua America, Inc.	0.75	4.9	10.3
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	4.6	10.0
Middlesex Water Company	0.60	3.9	9.3
York Water Company	0.55	3.6	9.0
Average	0.66	4.3 %	9.7 % (4)

Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.70	4.6 %	10.0 %
Aqua America, Inc.	0.75	4.9	10.3
California Water Service Group	0.70	4.6	10.0
Average	0.72	4.7 %	10.1 % (4)

Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	0.80	5.2 %	10.6 %
American States Water Co.	0.70	4.6	10.0
Aqua America, Inc.	0.75	4.9	10.3
California Water Services Group	0.70	4.6	10.0
Cinergy Corp.	0.80	5.2	10.6
Consolidated Edison, Inc.	0.60	3.9	9.3
Dominion Resources, Inc.	0.85	5.5	10.9
Green Mountain Power Corp.	0.60	3.9	9.3
KeySpan Corp.	0.75	4.9	10.3
Middlesex Water Company	0.60	3.9	9.3
Northwest Natural Gas Co.	0.65	4.2	9.6
Pinnacle West Capital Corp.	0.85	5.5	10.9
PNM Resources, Inc.	0.85	5.5	10.9
Southern Company	0.65	4.2	9.6
Southwest Water Company	0.65	4.2	9.6
Average	0.72	4.7 %	10.1 % (4)

See page 4 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 6.5% (1)	CAPM Result Including Risk-Free Rate of 5.4% (2)

Empirical Capital Asset Pricing Model (5)

Proxy Group of Six C. A. Turner Water Companies

American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc.	0.75	5.3	10.7
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	5.0	10.4
Middlesex Water Company	0.60	4.6	10.0
York Water Company	0.55	4.3	9.7
Average	0.66	4.8 %	10.2 % (4)

Proxy Group of Three Value Line (Standard Edition) Water Companies

American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc.	0.75	5.3	10.7
California Water Service Group	0.70	5.0	10.4
Average	0.72	5.1 %	10.5 % (4)

Proxy Group of Fifteen Utilities Selected on the Basis of Least

AGL Resources, Inc.	0.80	5.5 %	10.9 %
American States Water Co.	0.70	5.0	10.4
Aqua America, Inc.	0.75	5.3	10.7
California Water Services Group	0.70	5.0	10.4
Cinergy Corp.	0.80	5.5	10.9
Consolidated Edison, Inc.	0.60	4.6	10.0
Dominion Resources, Inc.	0.85	5.8	11.2
Green Mountain Power Corp.	0.60	4.6	10.0
KeySpan Corp.	0.75	5.3	10.7
Middlesex Water Company	0.60	4.6	10.0
Northwest Natural Gas Co.	0.65	4.8	10.2
Pinnacle West Capital Corp.	0.85	5.8	11.2
PNM Resources, Inc.	0.85	5.8	11.2
Southern Company	0.65	4.8	10.2
Southwest Water Company	0.65	4.8	10.2
Average	0.72	5.1 %	10.5 % (4)

See page 4 for notes.

<u>Aqua Illinois, Inc. – Woodhaven Lakes Sewer Division</u>
Development of the Market-Required Rate of Return on Common Equity Using
the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
<u>Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return</u>

Notes:

(1) From the three previous month-end (Sep. '04 –Nov. '04), as well as a recently available (Dec. 3, 2004), <u>Value Line Summary & Index</u>, a forecasted 3-5 year total annual market return of 11.2% 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 <u>Value Line</u> average forecasted annual dividend yield.

The 3-5 year average total market appreciation of 44% produces a four-year average annual return of 9.54% ((1.42^{25}) - 1). When the average annual forecasted dividend yield of 1.64% is added, a total average market return of 11.18%, rounded to 11.2%, (1.64% + 9.54%) is derived.

The 3-month and spot forecasted total market return of 11.2% minus the risk-free rate of 5.4% (developed in Note 2) is 5.8% (11.2% - 5.4%). The Ibbotson Associates calculated market premium of 7.2% for the period 1926-2003 results from a total market return of 12.4% less the average income return on long-term U.S. Government Securities of 5.2% (12.4% - 5.2% = 7.2%). This is then averaged with the 7.2% <u>Value Line</u> market premium resulting in a 6.5% market premium. The 6.5% market premium is then multiplied by the beta in column 1 of page 2 of this Schedule.

(2) Average forecast based upon six quarterly estimates of 20-year Treasury Bond yields per the consensus of nearly 50 economists reported in the <u>Blue Chip Financial Forecasts</u> dated December 1, 2004 (see page 7 of Aqua Schedule 3.14). The estimates are detailed below:

	20-Year Treasury Bond Yield
Fourth Quarter 2004	4.9%
First Quarter 2005	5.2
Second Quarter 2005	5.4
Third Quarter 2005	5.5
Fourth Quarter 2005	5.7
First Quarter 2006	5.8
Average	5.4%

(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) Includes only those indicated common equity cost rates which are above 8.6%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14).

(5) 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: <u>Value Line Summary & Index</u>
<u>Blue Chip Financial Forecasts</u>, December 1, 2004
<u>Value Line Investment Survey</u>, September 17, October 1, October 29, November 12, and December 3, 2004 Standard Edition and Small and Mid-Cap Edition
<u>Stocks, Bonds, Bills and Inflation – Valuation Edition 2004 Yearbook</u>, Ibbotson Associates, Inc., Chicago, IL

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999 %	2000 %	2001 %	2002 %	2003 %	5-year Average (2) Percent %	Student's T-Test	5-Year Projected (3) Percent %	Student's T-Test
21st Century Ins. Group	0.85	0.73	4.1045	0.1093	12.1	1.8	3.7	7.4	9.5	6.7	(0.92)	13.0	(0.65)
ABM Industries Inc.	0.70	0.61	3.6382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.56)	13.5	(0.49)
Abbott Labs.	0.80	0.84	4.0020	0.1038	34.7	32.5	32.5	30.4	26.8	31.3	0.74	21.0	0.58
AmerisourceBergen	0.76	0.59	4.1881	0.1383	50.0	35.1	4.9	10.8	11.2	22.4	0.14	10.5	(0.30)
Analy Mortgage Mgmt.	0.85	0.48	3.8641	0.0923	17.8	12.2	13.8	20.3	15.7	15.9	(0.30)	15.5	(0.20)
Applied Ind'l Techn.	0.75	0.56	3.9603	0.1025	6.8	10.4	9.0	4.9	5.9	7.4	(0.87)	13.0	(0.55)
Archer Daniels Mid'd	0.70	0.54	3.7599	0.0973	4.5	4.9	8.1	6.8	6.2	5.7	(0.89)	10.0	(0.97)
Arrow Int'l	0.80	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.38)	12.5	(0.82)
Ball Corp.	0.85	0.73	3.9152	0.1014	15.1	19.6	21.0	32.3	29.4	22.0	0.18	24.5	1.07
Bard (C.R.)	0.75	0.58	3.7710	0.0976	20.6	20.4	18.2	20.1	19.5	19.7	0.04	22.0	0.72
Bames Group	0.75	0.60	3.8747	0.1003	15.8	17.7	8.8	13.0	10.3	13.3	(0.47)	14.0	(0.41)
Beckman Coulter	0.60	0.36	4.0464	0.1047	46.5	36.5	27.3	28.9	20.3	31.6	0.78	14.0	(0.41)
Becton Dickinson	0.75	0.61	3.9951	0.1024	21.8	20.1	18.8	19.3	18.8	19.9	(0.03)	17.6	0.08
Berry Petroleum 'A'	0.70	0.48	3.9777	0.1030	16.5	25.8	14.3	17.5	17.6	18.1	(0.15)	15.5	(0.20)
Blyth Inc.	0.75	0.59	4.0458	0.1047	24.3	23.0	16.5	16.9	17.0	19.6	(0.05)	14.0	(0.41)
Bob Evans Farms	0.65	0.72	3.9148	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.55)	12.0	(0.69)
CLARCOR Inc.	0.85	0.71	3.7284	0.0965	16.6	16.6	16.3	14.8	14.7	15.8	(0.32)	13.5	(0.46)
ChoicePoint Inc.	0.85	0.76	4.0306	0.1043	19.1	18.1	18.3	16.1	16.1	17.3	(0.20)	18.0	(0.13)
Coca-Cola	0.85	0.41	3.8732	0.1003	34.0	39.4	35.0	34.7	34.0	35.4	1.02	33.5 (4)	2.34
Coca-Cola Bottling	0.50	0.18	3.8364	0.1019	14.7	9.5	38.5	69.0	68.5	36.0	1.20	41.0 (4)	3.39
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.9	27.0	17.1	18.2	16.2	20.9	0.04	19.0	0.30
Constellation Brands	0.65	0.46	4.2245	0.1094	16.6	15.8	14.4	16.4	11.2	14.7	(0.38)	11.5	(0.76)
Corn Products Int'l	0.75	0.62	3.7903	0.0981	7.6	8.4	6.7	7.8	6.3	7.3	(0.86)	10.5	(0.80)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.8	10.1	10.9	11.6	(0.59)	12.5	(0.52)
Dean Foods	0.65	0.40	3.4591	0.0895	20.5	20.1	8.5	17.0	12.6	15.7	(0.31)	10.6	(0.90)
Dentsply Int'l	0.70	0.54	3.3077	0.0856	19.2	19.4	18.0	17.5	16.4	17.9	(0.16)	13.5	(0.46)
Dionex Corp.	0.80	0.66	4.1881	0.1084	34.7	28.7	24.5	21.0	19.7	25.7	0.38	28.0	1.28
ESCO Technologies	0.75	0.60	4.2075	0.1089	3.5	5.4	6.1	7.1	12.0	6.8	(0.91)	11.0	(0.03)
Fortune Brands	0.85	0.72	3.6361	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	(0.16)	16.5	(0.06)
Franklin Electric	0.65	0.41	3.8326	0.0992	27.8	20.8	22.0	21.0	17.9	21.9	0.11	17.5	0.08
Gen'l Dynamics	0.75	0.62	3.9623	0.1033	22.5	23.8	20.8	20.2	16.7	20.8	0.03	15.0	(0.27)
Gillette	0.65	0.47	3.9884	0.1035	41.2	65.0	48.9	63.6	61.8	54.1 (4)	2.28	39.6 (4)	3.18
Golden West Fin'l	0.85	0.75	3.6952	0.0951	14.8	14.8	19.1	19.1	18.6	17.3	(0.20)	22.6	0.79
HNI Corp.	0.85	0.74	3.6729	0.0953	19.8	18.5	19.2	14.1	13.6	18.3	(0.27)	19.0	0.30
Harland (John H.)	0.70	0.60	4.0567	0.1053	25.3	18.7	19.3	22.4	22.0	21.1	0.05	19.5	(0.20)
Hillenbrand Inds.	0.75	0.67	3.4433	0.0891	17.7	17.7	17.7	19.8	21.1	19.0	(0.09)	21.5	0.05
Int'l Flavors & Frag.	0.75	0.59	3.7625	0.0971	22.0	23.7	25.6	32.0	26.9	26.1	0.39	20.5	0.51
Invacare Corp.	0.80	0.67	3.6811	0.1000	15.8	15.1	15.8	13.5	11.6	14.4	(0.40)	12.5	(0.62)
Kellogg	0.55	0.31	3.6308	0.0940	74.5	72.6	61.1	79.4	54.5	68.4 (4)	3.29	28.0	1.56
Kimball Int'l 'B'	0.80	0.63	4.2859	0.1104	12.0	10.3	8.2	6.8	1.3	7.5	(0.89)	9.5	(1.04)
Lancaster Colony	0.75	0.59	3.7450	0.0869	22.9	24.6	19.6	16.6	16.1	20.0	0.02	18.0	(0.13)
Lance Inc.	0.65	0.46	3.8241	0.1016	13.7	12.6	13.4	11.0	13.1	12.8	(0.51)	15.5	(0.20)
Lawson Products	0.65	0.42	3.6513	0.0945	15.9	16.3	8.7	7.7	9.7	11.7	(0.58)	14.0	(0.41)
Libbey Inc.	0.75	0.59	4.2544	0.1101	47.3	35.2	23.8	26.1	20.8	30.6	0.70	17.0	0.01
Lincoln Elec Hidgs.	0.80	0.66	4.0224	0.1041	20.7	19.3	10.8	17.2	11.7	17.1	(0.22)	20.0	0.44
Lockheed Martin	0.60	0.34	4.2031	0.1088	9.0	8.0	10.8	18.0	16.8	11.9	(0.57)	22.0	0.72
Matthews Int'l	0.65	0.41	3.7430	0.0969	21.8	22.0	21.0	18.0	17.5	20.7	0.03	14.5	(0.34)
Murphy Oil Corp.	0.65	0.74	3.9871	0.1032	9.4	24.3	17.6	6.4	13.1	14.2	(0.41)	9.5	(1.04)
New Plan Excel Rlty	0.65	0.46	3.3158	0.0858	9.2	7.9	7.0	7.8	8.1	8.0	(0.83)	12.5	(0.52)
Northrop Grumman	0.80	0.38	3.8481	0.0998	14.8	15.8	6.5	4.8	4.6	9.2	(0.76)	10.5	(0.00)
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.6	23.8	16.2	20.3	19.0	(0.09)	11.5	(0.76)
PepsiAmericas Inc.	0.75	0.58	3.7762	0.0978	6.2	6.8	6.3	9.4	8.8	7.6	(0.88)	9.5	(1.04)
Pfizer Inc.	0.85	0.71	3.9964	0.0980	36.2	40.4	46.6	47.8	19.5	38.3	1.22	24.0 (4)	1.00
Procter & Gamble	0.60	0.36	4.2173	0.1092	34.4	34.4	36.6	36.9	35.4	35.6	1.03	31.0 (4)	1.99
Quaker Chemical	0.80	0.63	3.8901	0.1007	19.0	20.2	16.8	16.2	13.2	17.1	(0.22)	12.5	(0.02)

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth						5-year Average (2)		5-Year Projected (3)	
					1999	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
Ralcorp Holdings	0.65	0.29	3.4048	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.60)	11.5	(0.78)
Ruddick Corp.	0.85	0.70	3.7843	0.0890	11.4	10.8	10.8	12.3	12.1	11.5	(0.59)	12.5	(0.62)
Ryan's Family	0.75	0.60	4.2256	0.1094	14.7	14.8	14.2	15.7	14.0	14.7	(0.36)	13.0	(0.55)
SLM Corporation	0.80	0.38	3.5721	0.0925	47.8	34.8	37.3	31.9	33.3	37.0	1.13	25.5	1.21
Sara Lee Corp.	0.60	0.68	3.4174	0.0885	88.3	92.0	89.9	63.8	59.1	80.8 (4)	4.07	32.0 (4)	2.13
Schulman (A.)	0.60	0.64	4.2284	0.1095	13.4	11.7	3.9	9.0	4.2	8.4 (4)	(0.40)	8.0	(1.25)
Selective Ins. Group	0.70	0.64	3.6719	0.0951	9.4	4.8	4.9	8.1	7.7	6.5	(0.93)	13.0	(0.56)
Senetant Techn.	0.60	0.54	3.6751	0.0951	18.6	16.7	16.1	16.2	13.4	16.0	(0.29)	13.0	(0.55)
ServiceMaster Co.	0.75	0.69	4.0512	0.1049	18.6	16.9	9.4	14.0	18.4	15.5	(0.32)	22.5	0.79
Sigma-Aldrich	0.60	0.55	4.0344	0.1044	11.8	16.2	17.4	14.8	19.3	15.9	(0.30)	17.5	0.08
Smucker (J.M.)	0.65	0.41	3.7441	0.0988	11.4	13.4	12.2	9.3	10.0	11.3	(0.61)	10.0	(0.97)
Standex Int'l	0.80	0.63	3.8767	0.1004	16.9	18.5	14.5	11.4	11.1	14.9	(0.36)	18.5	0.23
Stryker Corp.	0.75	0.58	4.0975	0.1061	23.9	25.8	25.7	23.8	21.0	24.1	0.28	31.5 (4)	2.06
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	29.8	27.8	31.9	35.4	29.3	0.81	28.5	1.63
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	6.6	4.4	5.6	3.8	6.7	(0.92)	10.0	(0.97)
Tennant Co.	0.75	0.60	3.6385	0.0942	17.7	16.2	3.1	8.0	8.5	11.1	(0.62)	12.0	(0.69)
Thomas Inds.	0.75	0.58	3.8234	0.0980	12.5	13.5	11.9	10.4	8.7	11.6	(0.58)	6.5	(1.46)
Thornburg Mfg.	0.70	0.64	3.6966	0.0951	8.2	9.2	11.0	14.4	14.2	11.4	(0.60)	14.0	(0.41)
Universal Corp.	0.70	0.49	3.7088	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.05	17.0	0.01
WD-40 Co.	0.70	0.61	4.2230	0.1093	39.3	38.8	30.6	30.6	27.9	33.4	0.89	21.0	0.58
Walgreen Co.	0.85	0.72	3.7290	0.0966	17.9	17.8	16.7	16.3	16.1	17.0	(0.22)	17.0	0.01
Wendy's Int'l	0.75	0.54	3.8863	0.1032	15.8	16.1	18.8	15.1	13.4	15.8	(0.30)	14.0	(0.41)
West Pharma. Svcs.	0.70	0.49	3.6054	0.0933	15.7	8.3	11.8	8.4	10.6	10.8	(0.69)	12.0	(0.69)
Zimmer Holdings	0.75	0.59	3.8939	0.1288	42.7	73.6	242.4	70.4	9.3	87.7 (4)	4.55	14.6	(0.34)
Average for the Non-Utility Group	**0.73**	**0.56**	**3.8382**	**0.1000**									

Average for the Proxy Group of Six C. A. Turner Water Companies   0.60 (5)   0.45   3.7605 (6)   0.1014

Mean.   17.5%   16.5% (6)   15.4%

Conclusion (6)

Conservative Mean (7)   14.6%   14.2% (6)   13.6%

Conservative Conclusion (8)

See pages 5 and 6 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Comparable Earnings Analysis
for a Proxy Group of Ninety-Seven Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (8)

Proxy Group of Ninety-Seven Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth					5-Year Average (2)		5-Year Projected (3)	
					1999 %	2000 %	2001 %	2002 %	2003 %	Percent %	Student's T-Test	Percent %	Student's T-Test
21st Century Ins. Group	0.85	0.73	4.1045	0.1063	12.1	1.8	3.7	7.4	6.5	6.7	(0.89)	13.0	(0.54)
ABM Industries Inc.	0.70	0.51	3.8382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.52)	13.5	(0.46)
Abbott Labs.	0.80	0.64	4.0020	0.1036	34.7	32.5	32.5	30.4	28.6	31.3	0.74	21.0	0.68
Albemarle Corp.	0.85	0.77	3.1849	0.0819	16.6	17.2	11.7	11.7	12.6	14.0	(0.39)	14.0	(0.39)
Allied Capital Corp.	0.85	0.78	3.5677	0.0947	14.6	13.8	14.8	14.7	10.0	13.6	(0.42)	15.0	(0.24)
Amerada Hess	0.60	0.79	4.0009	0.1038	10.1	25.4	19.3	12.8	9.6	15.4	(0.30)	8.5	(1.21)
Anheuser-Busch	0.60	0.30	3.2193	0.0833	35.8	37.6	42.0	63.4	76.6	51.1 (4)	2.05	35.5 (4)	2.82
Annaly Mortgage Mgmt.	0.65	0.46	3.5641	0.0923	17.6	12.2	13.8	20.3	15.7	15.9	(0.27)	15.5	(0.16)
Applied Ind'l Techn.	0.75	0.59	3.7589	0.0973	6.6	10.4	9.0	4.9	6.9	7.4	(0.83)	13.0	(0.54)
Archer Daniels Mid'd	0.70	0.54	3.8025	0.1010	4.5	4.9	6.1	6.6	6.2	5.7	(0.84)	10.0	(0.99)
Arrow Int'l	0.60	0.33	3.9152	0.1014	19.6	17.0	14.3	13.1	13.3	14.7	(0.35)	12.5	(0.61)
Ball Corp.	0.85	0.73	4.0361	0.1045	15.1	12.7	21.0	32.3	29.4	22.9	0.19	24.5	1.18
Bandag Inc.	0.90	0.82	3.7710	0.0976	13.2	20.4	18.2	11.1	12.6	11.6	(0.55)	12.0	(0.69)
Bard (C.R.)	0.75	0.69	3.8747	0.1003	20.5	17.7	9.6	20.1	19.5	18.7	(0.02)	22.0	0.61
Barnes Group	0.60	0.36	4.0494	0.1047	15.0	30.5	27.3	13.0	10.3	13.3	(0.44)	14.0	(0.39)
Beckman Coulter	0.75	0.61	3.8551	0.1024	40.5	30.1	18.6	26.9	20.3	31.6	0.76	14.0	(0.39)
Becton Dickinson	0.70	0.48	3.9777	0.1030	21.6	25.6	14.3	19.3	19.6	19.9	(0.01)	17.5	0.13
Berry Petroleum 'A'	0.70	0.59	3.9733	0.1047	15.6	23.0	16.5	17.5	17.0	18.1	(0.13)	16.5	(0.16)
Blyth Inc.	0.75	0.72	3.8148	0.1013	24.3	11.1	12.6	16.9	17.0	19.6	(0.03)	14.0	(0.39)
Bob Evans Farms	0.85	0.71	3.7284	0.0995	12.3	16.8	16.3	13.4	11.4	12.1	(0.52)	12.0	(0.69)
CLARCOR Inc.	0.85	0.75	4.0305	0.1043	16.8	18.1	16.3	14.8	14.7	15.8	(0.29)	13.5	(0.46)
ChoicePoint Inc.	0.80	0.79	3.7284	0.0895	19.1	16.1	16.3	19.1	16.1	17.3	(0.18)	16.0	(0.09)
City National Corp.	0.65	0.41	3.3312	0.0852	18.9	17.7	18.4	16.3	15.3	16.9	(0.20)	14.0	(0.39)
Coca-Cola	0.90	0.81	3.6732	0.1000	34.0	39.4	35.0	34.7	34.0	35.4	1.01	33.5 (4)	2.52
Commercial Metals	0.70	0.52	4.0341	0.1044	11.3	11.0	6.8	8.1	3.7	7.9	(0.80)	14.5	(0.31)
ConAgra Foods	0.85	0.75	3.5237	0.0912	23.9	27.0	17.1	16.2	18.2	20.9	0.08	19.0	0.36
ConocoPhillips	0.85	0.82	3.1745	0.0822	10.5	28.4	11.4	5.1	13.4	13.8	(0.41)	8.0	(1.20)
Corn Products Int'l	0.75	0.62	3.7903	0.0981	7.6	0.4	6.7	7.6	8.3	7.3	(0.84)	10.5	(0.91)
Curtiss-Wright	0.70	0.48	3.5487	0.0918	12.3	13.1	11.6	10.1	10.9	11.6	(0.55)	12.5	(0.61)
Dean Foods	0.65	0.40	3.4581	0.0895	20.5	20.1	8.5	17.0	12.6	15.7	(0.26)	10.5	(0.91)
Dentsply Int'l	0.70	0.54	3.3077	0.0858	18.2	19.4	16.0	17.6	15.4	17.9	(0.14)	13.5	(0.46)
Donaldson Co.	0.60	0.81	3.6120	0.0935	23.8	25.1	23.7	22.7	21.3	23.3	0.22	21.5	0.73
Federated Investors	0.60	0.82	3.8564	0.0999	104.4	105.1	72.8	69.8	61.7	78.8 (4)	3.87	29.6	1.93
Ferro Corp.	0.80	0.80	3.5598	0.0921	24.6	23.7	13.0	8.5	5.4	15.0	(0.33)	18.5	(0.01)
Fortune Brands	0.85	0.72	3.0381	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	(0.14)	17.5	0.13
Franklin Electric	0.85	0.41	3.8326	0.0992	27.8	20.9	22.0	21.0	17.9	21.9	0.13	19.0	(0.24)
Gen'l Dynamics	0.75	0.62	3.9923	0.1033	22.5	23.6	20.8	20.2	16.7	20.8	0.05	16.0	(0.39)
Gillette	0.65	0.47	3.9994	0.1038	41.2	65.0	48.9	53.5	61.8	54.1 (4)	2.24	39.5 (4)	3.42
Golden West Fin'l	0.85	0.76	3.9962	0.0931	14.8	14.8	19.1	18.9	18.6	17.2	(0.19)	22.5	0.89
IHNI Corp.	0.85	0.74	3.8729	0.0951	18.8	18.5	15.2	14.1	13.8	16.3	(0.24)	19.0	0.36
Hubbard (John H.)	0.70	0.50	4.0087	0.1053	25.3	16.7	19.3	22.4	22.0	21.1	0.07	15.5	(0.16)
Harte-Hanks	0.80	0.66	3.2423	0.0839	12.6	14.9	14.4	17.0	16.7	14.9	(0.34)	19.0	(0.24)
Hillenbrand Inds.	0.80	0.67	3.4433	0.0891	17.7	18.7	17.7	18.8	21.1	19.0	(0.07)	21.5	0.73
IHOP Corp.	0.85	0.76	3.6811	0.0953	14.2	13.6	12.9	11.2	11.1	12.6	(0.46)	12.0	(0.59)
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	26.8	32.0	29.0	28.1	0.40	20.8	0.56
Invacare Corp.	0.60	0.67	3.6911	0.1000	15.8	16.1	15.8	13.5	13.8	14.4	(0.37)	12.5	(0.61)
Johnson & Johnson	0.65	0.46	3.2778	0.0849	28.0	25.6	24.3	30.0	28.8	28.5	0.43	22.5	0.88
Kellogg	0.65	0.31	3.6306	0.0940	74.5	72.6	61.1	78.4	54.5	69.4	3.18	28.0 (4)	1.70
Kirby Corp.	0.90	0.79	3.7450	0.0989	10.4	13.0	13.2	11.9	11.0	11.9	(0.53)	11.5	(0.78)
Lancaster Colony	0.75	0.59	3.9241	0.1016	22.9	24.6	19.6	16.6	16.1	20.0		16.0	(0.09)
Lance Inc.	0.65	0.42	3.5513	0.0945	13.7	12.8	13.4	11.0	13.1	12.8	(0.47)	15.5	(0.16)
Lawson Products	0.65	0.68	4.0224	0.1041	15.9	16.3	6.7	7.7	9.7	11.7	(0.55)	14.0	(0.39)
Lincoln Elec Hldgs.	0.85	0.76	3.5433	0.0917	20.7	19.3	18.6	17.2	11.7	17.1	(0.19)	20.0	0.51
Marathon Oil Corp.	0.65	0.41	3.7430	0.0899	9.0	27.0	26.7	11.1	16.7	18.1	(0.13)	14.0	(0.39)
Matthews Int'l	0.80	0.65	3.1551	0.0817	21.8	22.0	21.0	21.1	17.6	20.7	0.05	14.5	(0.31)
McGraw-Hill	0.80	0.78	3.9951	0.1028	23.7	28.2	25.9	26.6	24.6	25.4	0.38	25.0	1.25
Medtronic Inc.	0.80	0.78		0.1028	24.7	23.4	23.4	21.6	22.0	23.0	0.20	20.5	0.58
Merck & Co.	0.85	0.77	3.7757	0.0977	44.5	46.0	46.4	39.3	42.3	43.5	1.55	27.0	1.55

Aqua Regis, Inc. - Woodhaven Lakes Sewer Division
Comparable Earnings Analysis
for a Proxy Group of Ninety-Seven Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)

Proxy Group of Ninety-Seven Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth					5-year Average (2)		5-Year Projected (3)	
					1999	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
Mercury General	0.80	0.80	3.3088	0.0857	14.7	10.6	9.8	10.2	14.1	11.9	(0.53)	16.0	0.21
Minerals Techn.	0.90	0.79	3.6265	0.0939	12.8	12.8	10.2	9.1	7.3	10.4	(0.63)	10.5	(0.91)
Murphy Oil Corp.	0.85	0.74	3.9971	0.1032	9.4	24.3	17.8	9.4	13.1	14.2	(0.39)	9.5	(1.09)
New Plan Excel Rlty	0.65	0.46	3.1158	0.0858	8.2	7.9	7.0	7.8	8.1	8.0	(0.79)	12.5	(0.61)
Northrop Grumman	0.60	0.38	3.9401	0.0998	14.8	15.8	5.8	4.8	4.9	8.2	(0.71)	10.5	(0.91)
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.8	23.8	16.2	20.3	19.0	(0.07)	11.5	(0.76)
Pactiv Corp.	0.85	0.77	4.0603	0.1081	7.1	9.3	9.8	24.5	21.7	14.5	(0.39)	16.0	(0.09)
People's Bank	0.85	0.72	3.2209	0.0834	14.3	12.3	2.6	5.9	6.4	8.3	(0.77)	10.5	(0.91)
PepsiAmericas Inc.	0.75	0.59	3.7762	0.0978	6.2	5.8	6.3	9.4	9.8	7.5	(0.82)	9.6	(1.09)
PepsiCo Inc.	0.65	0.44	3.1931	0.0827	28.8	30.1	34.6	37.7	30.0	31.8	0.78	32.0 (4)	2.30
Pfizer Inc.	0.85	0.71	3.3984	0.0880	38.2	40.4	45.6	47.9	16.5	38.3	1.20	24.0	1.10
Protective Life	0.90	0.79	3.7503	0.0971	17.7	12.3	10.1	10.0	9.8	12.0	(0.53)	11.0	(0.84)
Quaker Chemical	0.80	0.63	3.8801	0.1007	19.0	20.2	16.8	16.2	13.2	17.1	(0.19)	12.5	(0.61)
Radcorp Holdings	0.55	0.29	3.4046	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.57)	11.5	(0.76)
Ruddick Corp.	0.85	0.70	3.7843	0.0980	11.4	10.8	10.8	12.3	12.1	11.5	(0.56)	12.5	(0.61)
SLM Corporation	0.80	0.66	3.5721	0.0925	47.9	34.8	37.3	31.9	33.3	37.0	1.12	25.5	1.33
Sara Lee Corp.	0.60	0.38	3.4174	0.0885	66.3	92.0	99.9	63.8	59.1	80.6 (4)	3.99	32.0 (4)	2.30
Selective Ins. Group	0.80	0.64	3.0719	0.0951	9.4	4.6	4.5	6.1	7.7	6.6	(0.89)	13.0	(0.54)
Sensient Techn.	0.70	0.54	3.8761	0.0951	16.6	16.7	15.1	16.2	13.4	16.0	(0.29)	13.0	(0.54)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	16.8	15.9	9.4	14.0	19.4	15.8	(0.30)	22.6	0.66
Sigma-Aldrich	0.60	0.59	4.0344	0.1044	11.8	16.2	17.4	14.8	19.3	15.9	(0.27)	17.5	0.13
Smucker (J.M.)	0.65	0.41	3.7441	0.0999	11.4	13.4	12.2	9.3	10.0	11.3	(0.67)	10.0	(0.89)
Standex Int'l	0.80	0.63	3.8767	0.1004	16.9	18.5	14.5	11.4	11.1	14.9	(0.34)	10.5	0.28
Stryker Corp.	0.75	0.58	4.0975	0.1061	23.9	25.9	25.7	23.8	21.0	24.1	0.27	31.5 (4)	2.22
Sysco Corp.	0.80	0.65	3.5191	0.0910	28.4	25.6	27.8	31.8	35.4	28.3	0.61	28.5	1.78
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	6.6	4.4	6.5	3.6	6.7	(0.86)	10.0	(0.86)
Tennant Co.	0.75	0.60	3.6395	0.0942	17.7	18.2	3.1	8.0	8.5	11.1	(0.59)	12.0	(0.69)
Thomas Indr.	0.75	0.56	3.8254	0.0990	12.5	13.5	11.9	10.4	9.7	11.6	(0.55)	6.5	(1.51)
Thornburg Mtg.	0.70	0.54	3.6966	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.57)	14.5	(0.31)
Toro Co.	0.80	0.69	3.2788	0.0849	12.5	14.3	14.8	17.4	18.5	15.5	(0.30)	27.0	1.55
Union Pacific	0.60	0.78	3.2495	0.0841	8.2	9.0	6.7	9.3	8.5	8.7	(0.74)	9.0	(1.13)
Universal Corp.	0.70	0.49	3.7066	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.07	17.0	0.06
Unocal Corp.	0.80	0.78	3.4344	0.0889	6.2	19.8	19.2	10.0	16.0	15.4	(0.30)	14.5	(0.31)
Valspar Corp.	0.80	0.61	3.6618	0.0949	20.9	7.9	7.9	16.3	12.9	15.6	(0.29)	13.0	(0.54)
Walgreen Co.	0.85	0.72	3.7280	0.0965	17.9	17.9	16.7	16.3	16.1	17.0	(0.20)	17.0	0.06
Weis Markets	0.70	0.52	3.2491	0.0841	6.5	7.9	10.1	10.4	9.5	9.3	(0.70)	10.5	(0.91)
Wendy's Int'l	0.75	0.54	3.9883	0.1032	15.6	16.1	18.6	15.1	13.4	15.8	(0.28)	14.0	(0.39)
West Pharmac. Svcs.	0.70	0.49	3.5054	0.0933	15.7	8.3	11.8	6.4	10.6	10.6	(0.42)	12.0	(0.69)
Zimmer Holdings	0.75	0.59	3.8939	0.1268	42.7	73.8	242.4	70.4	9.3	87.7 (4)	4.45	14.5	(0.31)
Average for the Non-Utility Group	**0.77**		**3.7015**	**0.0981**									
Average for the Proxy Group of Three Value Line (Standard Edition) Water Companies	**0.72**	**0.54**	**3.9320 (10)**	**0.0840**									
Mean										16.7%		16.5%	
Conclusion (9)										16.1% (6)			
Conservative Mean (7)										14.4%		13.5%	
Conservative Conclusion (8)										14.0% (6)			

See pages 5 and 6 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-One Non-Utility Companies Comparable to
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)

Proxy Group of Seventy-One Non-Utility Companies Comparable to the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	1999	2000	2001	2002	2003	5-year Average (2) Percent	Student's T-Test	5-Year Projected (3) Percent	Student's T-Test
Abemarle Corp.	0.65	0.77	3.1649	0.0819	16.6 %	17.2 %	11.7 %	11.7 %	12.9 %	14.0 %	(0.30)	14.0 %	(0.31)
Alberto Culver 'B'	0.70	0.50	2.9480	0.0793	15.2	15.3	15.0	16.0	15.3	15.4	(0.19)	14.9	(0.24)
Alexander & Baldwin	0.85	0.77	3.1103	0.0805	10.8	11.3	9.5	8.0	10.0	8.9	(0.62)	12.5	(0.54)
Allied Capital Corp.	0.85	0.78	3.6577	0.0847	14.8	13.8	14.8	14.7	10.0	13.6	(0.33)	15.0	(0.16)
Anheuser-Busch	0.60	0.36	3.2183	0.0833	35.8	37.6	42.0	63.4	78.8	51.1 (4)	2.80	35.5 (4)	2.90
Annaly Mortgage Mgmt.	0.65	0.48	3.5641	0.0923	17.8	12.2	13.8	20.3	15.7	15.9	(0.15)	15.5	(0.09)
Ashland Inc.	0.65	0.70	3.0684	0.0794	9.8	14.9	16.2	5.9	4.5	10.7	(0.55)	8.0	(1.06)
Baldor Electric	0.65	0.74	3.0142	0.0780	16.4	17.7	8.5	8.7	8.5	12.2	(0.44)	16.0	(0.16)
Bestia Corp.	0.75	0.58	2.9767	0.0771	15.4	16.8	14.2	13.3	12.2	14.2	(0.28)	14.0	(0.31)
CLARCOR Inc.	0.65	0.71	3.7234	0.0965	16.8	16.8	15.3	14.8	14.7	15.6	(0.17)	13.5	(0.39)
Capitol Fed. Fin'l	0.70	0.60	2.9386	0.0761	4.1	7.7	7.4	9.1	6.3	6.7	(0.87)	10.0	(0.91)
Catellus Development	0.80	0.83	3.1379	0.0812	11.9	16.2	22.2	16.0	15.4	16.3	(0.12)	20.6	0.65
Cincinnati Financial	0.65	0.73	3.1407	0.0813	4.7	2.0	3.2	5.4	8.2	4.3	(1.05)	7.5	(1.26)
City National Corp.	0.80	0.79	3.3312	0.0892	18.9	17.7	16.4	16.3	16.3	16.9	(0.07)	14.0	(0.31)
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.9	27.0	17.1	18.2	18.2	20.9	0.24	19.0	0.43
ConocoPhillips	0.65	0.75	3.1745	0.0822	10.6	28.4	11.4	6.1	13.4	13.8	(0.31)	8.0	(1.21)
Crescent Real Est.	0.80	0.64	2.8990	0.0769	5.5	6.0	7.0	15.3	15.2	9.8	(0.63)	14.5	(0.24)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.8	10.1	10.9	11.8	(0.46)	12.5	(0.54)
Dean Foods	0.65	0.40	3.4681	0.0895	20.5	20.1	8.5	17.0	12.8	15.7	(0.16)	10.5	(0.84)
Dentsply Int'l	0.70	0.84	3.3077	0.0856	19.2	19.4	18.0	17.5	16.4	17.9	0.01	13.5	(0.39)
First Midwest Bancorp	0.80	0.78	2.8450	0.0762	18.2	17.1	18.4	18.3	17.8	18.1	0.02	16.5	0.35
Fortune Brands	0.85	0.72	3.6381	0.0942	12.4	14.8	17.8	21.2	20.9	17.9	0.01	16.5	0.06
Golden West Fin'l	0.85	0.75	3.5952	0.0931	14.8	14.8	19.1	19.1	18.8	17.3	(0.04)	22.8	0.06
HNI Corp.	0.65	0.74	3.8729	0.0951	19.8	18.6	16.2	14.1	13.8	16.3	(0.12)	19.0	0.43
Harte-Hanks	0.80	0.66	3.2423	0.0839	12.6	14.9	14.4	17.0	16.7	14.9	(0.23)	15.0	(0.16)
Healthcare Rlty Trust	0.65	0.43	3.0801	0.0797	8.5	8.0	7.9	8.0	7.7	8.2	(0.75)	11.5	(0.99)
Hersey Foods	0.60	0.37	3.1464	0.0815	20.9	28.1	32.8	31.8	37.1	31.4	1.06	33.5 (4)	2.60
Hillenbrand Inds.	0.80	0.67	3.4433	0.0891	17.7	18.7	17.7	19.6	21.1	19.0	0.09	21.5	0.81
Hormel Foods	0.65	0.41	2.0793	0.0771	19.0	19.6	18.3	17.0	14.8	17.7	(0.01)	17.5	0.21
Hospitality Properties	0.80	0.66	3.1431	0.0814	7.4	8.5	8.2	6.7	7.0	8.0	(0.77)	8.0	(1.21)
IHOP Corp.	0.85	0.78	3.6611	0.0853	14.2	13.8	12.9	11.2	11.1	12.8	(0.41)	12.0	(0.61)
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	25.8	32.0	26.9	26.1	0.65	20.5	0.68
Johnson & Johnson	0.65	0.46	3.2778	0.0849	26.0	25.5	24.3	30.0	26.8	26.5	0.68	22.5	0.98
Kellogg	0.55	0.31	3.6909	0.0940	74.5	72.6	61.1	79.4	64.5	68.4 (4)	3.95	26.0	1.76
Kimberly-Clark	0.70	0.37	3.0057	0.0778	31.8	31.2	30.9	30.8	25.4	30.0	0.95	24.0	1.18
Kraft Foods	0.60	0.42	2.9494	0.0843	13.0	14.2	8.0	13.6	12.1	12.2	(0.44)	11.0	(0.78)
Lawson Products	0.65	0.76	3.8513	0.0945	15.9	16.3	8.7	7.7	8.7	11.7	(0.48)	14.0	(0.31)
Marathon Oil Corp.	0.85	0.77	3.6433	0.0917	9.0	27.0	26.7	11.1	16.7	18.1	0.02	14.0	(0.31)
McClatchy Co.	0.75	0.60	3.0524	0.0790	9.4	8.3	6.3	12.6	11.9	9.9	(0.62)	10.5	(0.84)
McGraw-Hill	0.80	0.65	3.1551	0.0817	23.7	28.2	25.9	26.6	24.6	25.4	0.59	25.0	1.33
Media General 'A'	0.80	0.76	3.1339	0.0811	6.3	4.8	1.5	5.0	4.8	4.3	(1.05)	6.6	(1.43)
Meredith Corp.	0.85	0.76	3.0251	0.0783	21.3	21.3	17.8	11.2	18.4	18.0	0.02	17.0	0.13
Minerals Techn.	0.80	0.79	3.6295	0.0939	12.6	12.6	10.2	9.1	7.3	10.4	(0.58)	10.5	(0.84)
New Plan Excel Rlty	0.65	0.46	3.3158	0.0856	9.2	7.9	7.0	7.8	8.1	8.0	(0.77)	12.6	(0.54)
New York Times	0.65	0.77	3.1163	0.0806	21.4	28.1	22.2	24.1	21.6	23.5	0.45	23.0	1.03
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.6	23.6	18.2	20.3	18.0	0.09	11.5	(0.69)
People's Bank	0.65	0.72	3.2208	0.0834	14.3	12.3	2.8	5.9	8.4	8.3	(0.74)	10.5	(0.84)
PepsiCo Inc.	0.65	0.44	3.1931	0.0827	28.6	30.1	34.0	37.7	30.0	31.8	1.09	32.0 (4)	2.37
Pfizer Inc.	0.85	0.71	3.3984	0.0880	38.2	40.4	45.8	47.9	19.5	38.3	1.60	24.0	1.18
Plum Creek Timber	0.70	0.54	2.9762	0.0771	17.4	16.8	9.2	10.6	8.7	12.7	(0.40)	16.0	(0.01)
Popular Inc.	0.80	0.84	3.1070	0.0804	14.2	13.6	13.4	14.8	17.1	14.6	(0.25)	15.5	(0.09)
Pulitzer Inc.	0.75	0.59	2.9221	0.0756	2.8	4.4	1.3	4.3	5.9	3.7	(1.10)	9.5	(1.43)
RLI Corp.	0.75	0.55	3.1466	0.0815	10.7	8.8	9.0	8.4	10.6	9.5	(0.65)	11.0	(0.76)
Rallcorp Holdings	0.65	0.29	3.4046	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.50)	11.5	(0.69)
SLM Corporation	0.80	0.68	3.5721	0.0925	47.8	34.8	37.3	31.9	33.3	37.0	1.50	25.5	1.40

Aqua Illinois, Inc. - Woodhaven Lakes Sewer Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-One Non-Utility Companies Comparable to
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)

Proxy Group of Seventy-One Non-Utility Companies-Comparable to the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth					5-year Average (2)		5-Year Projected (3)	
					1999	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
Sara Lee Corp.	0.60	0.38	3.4174	0.0885	66.3	92.0	99.9	63.8	59.1	80.6 (4)	4.91	32.0 (4)	2.37
Selective Ins. Group	0.60	0.64	3.6719	0.0961	9.4	4.8	4.5	6.1	7.7	6.6	(0.88)	13.0	(0.46)
Sentient Techn.	0.70	0.54	3.6751	0.0951	18.6	16.7	15.1	16.2	13.4	16.0	(0.14)	13.0	(0.46)
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	25.8	27.6	31.9	35.4	28.3	0.90	28.5	1.55
Tennant Co.	0.75	0.60	3.6365	0.0942	17.7	18.2	3.1	8.0	8.6	11.1	(0.62)	12.0	(0.61)
Thornburg Mtg.	0.70	0.64	3.6956	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.50)	14.0	(0.31)
Tootsie Roll Ind.	0.65	0.43	2.8976	0.0786	19.8	18.5	12.8	12.8	12.1	14.1	(0.29)	11.0	(0.78)
Toro Co.	0.80	0.68	3.2796	0.0849	12.5	14.3	14.8	17.4	16.5	15.6	(0.16)	27.0	1.63
Union Pacific	0.80	0.78	3.2485	0.0841	8.2	9.0	8.7	9.3	6.6	8.7	(0.71)	9.0	(1.06)
Universal Corp.	0.70	0.49	3.7086	0.0990	23.6	23.7	21.4	16.1	18.3	21.0	0.25	17.0	0.13
Unocal Corp.	0.80	0.78	3.4344	0.0889	6.2	26.6	19.2	10.0	16.0	15.4	(0.19)	14.5	(0.24)
Walgreen Co.	0.85	0.72	3.7280	0.0995	17.9	17.9	16.7	16.3	16.1	17.0	(0.06)	17.0	0.13
Washington Federal	0.90	0.79	3.0662	0.0799	15.2	13.9	13.0	15.0	13.8	14.2	(0.28)	14.0	(0.31)
Webster Fin'l	0.70	0.52	3.2461	0.0841	16.9	12.8	13.8	15.8	14.2	14.4	(0.27)	12.0	(0.61)
Weis Markets	0.70	0.49	3.6054	0.0933	8.6	7.9	10.1	10.4	9.5	9.3	(0.66)	10.6	(0.84)
West Pharmac. Svcs.					15.7	8.3	11.8	8.4	10.6	10.6	(0.56)	12.0	(0.61)
Average for the Non-Utility Group	0.77	0.61	3.3197	0.0862									
Average for the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	0.72	0.53	3.2953 (12)	0.0881									
Mean										15.6%		15.1%	
Conclusion (6)											15.4% (6)		
Conservative Mean (7)										14.1%		13.5%	
Conservative Conclusion (8)											13.6% (8)		

See pages 5 and 6 for notes.

Aqua Illinois, Inc. — Woodhaven Lakes Sewer Divison
Comparable Earnings Analysis

Notes: (1)   The criteria for selection of the proxy group of seventy-nine non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of seventy-nine non-utility companies was selected based upon the proxy group of six C. A. Turner water companies' unadjusted beta range of 0.15 - 0.75 and standard error of the regression range of 3.2822 – 4.2788. 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 accompanying 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 2003.

(3)   2007-2009.

(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 mean historical and projected returns as fully explained in Ms. Ahern's accompanying testimony.

(5)   The standard deviation of the proxy group of six C. A. Turner water companies' standard error of the regression is 0.1661. 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

$$\text{Thus, } 0.1661 = \frac{3.7805}{\sqrt{518}} = \frac{3.7805}{22.7596}$$

(6)   Mid-point of the arithmetic mean of the historical five year average and five year projected rate of return on net worth.

(7)   Arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.6%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14.)

(8)   Mid-point of the arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.8%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14.)

(9)   The criteria for selection of the proxy group of ninety-seven non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of ninety-seven non-utility companies was selected based upon the proxy group of three Value Line (Standard Edition) water companies' unadjusted beta range of 0.26 - 0.82 and standard error of the

Aqua Illinois, Inc. – Woodhaven Lakes Sewer Divison
Comparable Earnings Analysis

regression range of 3.1532– 4.1108. 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 accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(10)   The standard deviation of the proxy group of three Value Line (Standard Edition) water companies' standard error of the regression is 0.1596 (3.6320 / 22.7596).

(11)   The criteria for selection of the proxy group of seventy-one non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of seventy-one non-utility companies was selected based upon the proxy group of fifteen utilities selected on the basis of least relative distance's unadjusted beta range of 0.27 - 0.79 and standard error of the regression range of 2.8609– 3.7297. 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 accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(12)   The standard deviation of the proxy group of fifteen utilities selected on the basis of least relative distance's standard error of the regression is 0.1448 (3.2953 / 22.7596).

Source of Information: Value Line, Inc., September 16, 2004
Value Line Investment Survey (Standard Edition)

MIDDLESEX WATER COMPANY

DOCKET NO. _____

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

FAIR RATE OF RETURN

MAY 2005

TABLE OF CONTENTS

1

2 Q. Please state your name, occupation and business address.

3

4 A. My name is Pauline M. Ahern and I am a Vice President of AUS Consultants -

5 Utility Services. My business address is 155 Gaither Drive, P.O. Box 1050,

6 Moorestown, New Jersey 08057.

7

8 Q. Please summarize your educational background and professional experience.

9

10 A. I am a graduate of Clark University, Worcester, MA, where I received a Bachelor

11 of Arts degree with honors in Economics in 1973. In 1991, I received a Master of

12 Business Administration with high honors from Rutgers University.

13 In June 1988, I joined AUS Consultants - Utility Services as a Financial

14 Analyst and am now a Vice President. I am responsible for the preparation of all

15 fair rate of return and capital structure exhibits for AUS Consultants - Utility

16 Services. I have offered expert testimony on behalf of investor-owned utilities

17 before twenty state regulatory commissions. The details of these appearances,

18 as well as details of my educational background, are shown in Appendix A

19 supplementing this testimony.

20 I am also the Publisher of AUS Utility Reports (formerly C.A. Turner),

21 responsible for the production, publication, distribution and marketing of these

22 reports. AUS Utility Reports provides financial data and related ratios covering

23 approximately 150 public utility companies on a monthly, quarterly, and annual

24 basis. Coverage includes electric, combination gas and electric, gas distribution,

25 gas transmission, telephone, water and international utilities.

26 I also calculate and maintain the A.G.A. Index under contract with the

27 American Gas Association (A.G.A.). The A.G.A. Index is a market capitalization

1   weighted index of the common stocks of about 70 corporate members of the

2   A.G.A.

3   I have co-authored an article with Frank J. Hanley, President, AUS

4   Consultants - Utility Services entitled "Comparable Earnings: New Life for an Old

5   Precept" which was published in the American Gas Association's Financial

6   Quarterly Review, Summer 1994. I also assisted in the preparation of an article

7   authored by Frank J. Hanley and A. Gerald Harris entitled "Does Diversification

8   Increase the Cost of Equity Capital?" published in the July 15, 1991 issue of

9   Public Utilities Fortnightly.

10   I am a member of the Society of Utility and Regulatory Financial Analysts,

11   formerly the National Society of Rate of Return Analysts serving as

12   Secretary/Treasurer for 2004-2006. In 1992, I was awarded the professional

13   designation "Certified Rate of Return Analyst" (CRRA) by the National Society of

14   Rate of Return Analysts. This designation is based upon education, experience

15   and the successful completion of a comprehensive written examination.

16   I am an associate member of the National Association of Water

17   Companies, serving on its Finance Committee, and a member of the Energy

18   Association of Pennsylvania, formerly the Pennsylvania Gas Association.

19

20   Q.   What is the purpose of your testimony?

21

22   A.   The purpose is to provide testimony on behalf of Middlesex Water Company

23   (Middlesex or the Company) of the fair rate of return, including common equity

24   cost rate, senior capital cost rates, and capital structure which it should be

25   afforded the opportunity to earn on its jurisdictional rate base.

26

27   Q.   What is your recommended overall fair rate of return?

2

1		
2	A.	I recommend that the New Jersey Board of Public Utilities (BPU or the Board)
3		authorize the Company the opportunity to earn an overall rate of return of 8.07%
4		based upon the Company's estimated and pro forma capital structure and senior
5		capital cost rates pro forma at June 30, 2005, adjusted to eliminate the
6		cumulative preferred stock issued to acquire Tidewater Utilities (TUI) and Public
7		Water Supply (PWS). The estimated, pro forma and adjusted capital structure at
8		June 30, 2005 consists of 49.97% debt, 0.56% preferred stock and 49.47%
9		common equity at fixed cost rates of 5.10% for long-term debt and 5.30% for
10		preferred stock as well as my recommended common equity cost rate of 11.10%.
11		
12	Q.	Have you prepared an exhibit which supports your overall recommended fair rate
13		of return?
14		
15	A.	Yes, I have. It has been marked for identification as Exhibit P-7 and consists of
16		Schedules PMA-1 through PMA-17. Hereinafter, references to Schedules within
17		this testimony will be from this Exhibit, unless otherwise noted.
18		
19		II. SUMMARY
20	Q.	Please summarize the overall cost of capital and fair rate of return.
21		
22	A.	The overall cost of capital of 8.07% is summarized on Schedule PMA-1, page 1
23		and is based upon the Company's capital structure and related ratios and fixed
24		capital cost rates pro forma and adjusted at June 30, 2005.
25		The overall cost of capital is summarized in Table 1 below:
26		

3

<div align="center">Table 1</div>

	Capital Structure Ratios	Cost Rate	Weighted Return
Long-Term Debt	49.97%	5.10%	2.55%
Preferred Stock	0.56	5.30	0.03
Common Equity	49.47	11.10	5.49
Total	100.00%		8.07%

The basis of the 11.10% common equity cost rate is summarized on Schedule PMA-1, page 2. In arriving at my recommended common equity cost rate of 11.10%, 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 Middlesex and suitable for cost of capital purposes. Even though Middlesex's common stock is publicly traded, it is appropriate to look to a proxy group or groups of companies as reasonably similar in risk as possible, whose common stocks are actively traded for insight into an appropriate common equity cost rate applicable to Middlesex and then adjust the results upward to reflect Middlesex's greater business risk (vis-à-vis the proxy group(s)). As will be discussed subsequently, at this time, I believe that Middlesex's market data yields results which are counter-intuitive to its level of business risk. Consequently, I rely upon the market-based cost rates of reasonably similar risk companies (proxy groups) for insight into a recommended common equity cost rate for use in a cost of capital recommendation. 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

---

[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).

<div align="center">4</div>

judgment used in arriving at a recommended common equity cost rate. Therefore, I have evaluated and relied upon the market data of two proxy groups of water companies in arriving at my recommended common equity cost rate. Note, however, that due to significant consolidation in the water industry in the last several years, resulting in a fewer number of mostly large publicly-traded water companies with sufficient market and projected data available, it is becoming increasingly difficult to select a proxy group which is identical in risk to Middlesex. Therefore, the proxy group(s)' results must be adjusted to reflect the greater relative business risk of Middlesex as will be subsequently discussed in detail. The bases of selection are described below.

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:

Table 2

	Proxy Group of Five AUS Utility Reports Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Middlesex Water Company
Discounted Cash Flow Model	10.7%	10.8%	9.8%
Risk Premium Model	10.7	10.8	10.5
Capital Asset Pricing Model	10.2	10.4	10.0
Comparable Earnings Model	14.4	14.4	13.8
Indicated Common Equity Cost Rate Before Business Risk Adjustment	10.90%	11.00%	10.50%
Business Risk Adjustment	0.15	0.15	--
Common Equity Cost Rate After Adjustment for Business Risk	11.05%	11.15%	10.50%
Recommended Common Equity Cost Rate		11.10%	

1   After reviewing the cost rates based upon the four models, I conclude that

2   a common equity cost rate of 10.90% is indicated for the proxy group of five AUS

3   Utility Reports water companies, 11.00% for the proxy group of three Value Line

4   (Standard Edition) water companies and, for information purposes only, 10.50%

5   for Middlesex before a business risk adjustment. After applying business risk

6   adjustments due to Middlesex's small size vis-a-vis the two proxy groups as will

7   be discussed in detail subsequently, the indicated common equity cost rate for

8   each proxy group is 11.05% and 11.15%, respectively. Based upon these cost

9   rates, i.e., 11.05% and 11.15%, I recommend a common equity cost rate of

10   11.10% applicable to the Company's proposed common equity ratio of 49.47%

11   based upon the midpoint of the range of common equity cost rates of 11.05% to

12   11.15% for the two proxy groups as will be discussed subsequently.

13

14   III. GENERAL PRINCIPLES

15   Q.   What general principles have you considered in arriving at your recommended

16   common equity cost rate of 11.10%.

17

18   A.   In unregulated industries, marketplace competition is the principal determinant of

19   the price of a product or service. In the case of regulated public utilities,

20   regulation must act as a substitute for marketplace competition. Consequently,

21   marketplace data must be relied upon to assure that the utility can fulfill its

22   obligations to the public and provide adequate service at all times. This requires

23   a level of earnings sufficient to maintain the integrity of presently invested capital

24   and permit the attraction of needed new capital at a reasonable cost in

25   competition with other comparable-risk firms. These standards for a fair rate of

26   return have been established by the U.S. Supreme Court in the Hope and

27   Bluefield cases cited previously. Consequently, in my determination of a fair rate

1	of return, I have also evaluated data gathered from the marketplace for utilities as
2	similar in risk as possible to Middlesex.
3	
4	IV. BUSINESS RISK
5	Q. Please define business risk and explain why it is important to the determination of
6	a fair rate of return?
7	
8	A. Business risk incorporates all of the risks of a firm other than financial risk, which
9	will be discussed subsequently. Examples of business risk include the quality of
10	management and the regulatory environment which have a direct bearing on
11	earnings.
12	Business risk is important to the determination of a fair rate of return
13	because the greater the level or risk, the greater the rate of return investors
14	demand, consistent with the basic financial precept of risk and return.
15	
16	Q. Please discuss the business risks facing the water industry in general.
17	
18	A. The water utility industry faces significant risks related to replacing aging
19	transmission and distribution systems. Value Line Investment Survey[3] observes:
20	
21	Industry regulations in the water industry continue to be demanding.
22	Although the Safe Drinking Water Act (SDWA) of 1974 remains the
23	authority surrounding the safety and purity of drinking water, an
24	amendment in 1996 authorized the Environmental Protection
25	Agency (EPA) to step up local compliance levels. Now the EPA
26	works with local and state governments to oversee the safety of
27	drinking water. However, these standards will likely only become
28	more stringent in the next few years, as the aging of current facilities
29	and the threat of terrorist activity ought to result in tighter standards.

---

[3]   Value Line Investment Survey, January 28, 2005

The majority of the current water systems are over a century old and require a make over. Costs associated with the updates are likely to grow into the hundreds of billions of dollars over the next decade or two. Strapped local and federal capital reserves will force water companies to meet the higher capital requirement levels alone.

Many smaller water companies lack the capital requirements to keep up with the rising costs associated with staying in compliance with government standards.

In addition, because the water industry is much more capital-intensive than the electric, natural gas or telephone industries with Middlesex among the most capital intensive in the water utility industry, the investment required to produce a dollar of revenue is greater. And, because investor-owned water utilities typically do not receive federal funds for infrastructure replacement, the challenge to investor-owned water utilities is exacerbated and their access to financing is restricted, thus increasing risk.

The water utility industry also experiences lower relative depreciation rates, with Middlesex's own depreciation rate below average for the industry. Lower depreciation rates, as one of the principal sources of internal cash flows for all utilities, mean that water utility depreciation as a source of internally-generated cash is far less than for electric, natural gas or telephone utilities, hence pressuring water utility cash flows which are an integral and significant part of credit rating analyses. Water utilities' assets have longer lives and, hence, longer capital recovery periods. As such, water utilities also face greater risk due to inflation which results in a higher replacement cost per dollar of net plant than for other types of utilities.

In addition, as noted by S&P[4]:

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 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[5] 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

---

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

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

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

In view of the foregoing, it is clear that with a high degree of capital intensity coupled with lower relative internal cash flow generation due to lower depreciation rates, the need for substantial infrastructure capital spending and increased anti-terrorism security spending, the water utility industry, including Middlesex, requires regulatory support in the form of adequate and timely rate relief so water utilities will be able to successfully meet the challenges they face.

Q. Does Middlesex face additional extraordinary business risk?

A. Yes. Exacerbating the pressures from high capital intensity and low internal cash flow generation as a result of below average depreciation rates, Middlesex's smaller size, i.e., total capital of $194.650 million at December 31, 2003 (see page 3 of Schedule PMA-1) vis-à-vis average total capital of $564.304 million in 2003 for the proxy group of five AUS Utility Reports water companies (see page 3 of Schedule PMA-1), $865.128 million for the proxy group of three Value Line (Std. Ed.) water companies indicates greater relative business risk because all else equal, size has a bearing on risk.

1

2   Q.   Please explain why size has a bearing on business risk.

3

4   A.   Smaller companies are less capable of coping with significant events which affect

5   sales, revenues and earnings.

6   The loss of revenues from a few larger customers, for example, would

7 have a greater effect on a small company than on a much larger company with a

8 larger customer base. Because Middlesex is the regulated utility to whose rate

9 base the BPU ultimately allowed overall cost of capital and fair rate of return will

10 be applied, the relevant risk reflected in the cost of capital must be that of

11 Middlesex, including the impact of its small size on common equity cost rate.

12 Size is an important factor which affects common equity cost rate, and Middlesex

13 is significantly smaller than the average company in each proxy group based

14 upon total investor-provided capital as shown below:

15
16 <center>Table 3</center>
17
18

	2003 Total Capital ($ millions)	Times Greater than The Company	Market Capitalization(1) ($ Millions)	Times Greater than the Company
Proxy Group of Five AUS Utility Reports Water Companies	$564.304	2.9x	$707.680	3.2x
Proxy Group of Three Value Line (Std. Ed.) Water Companies	865.130	4.4x	1,101.438	4.9x
Middlesex	194.650		223.277(2) 225.452(3)	

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

(2)   Based upon the average of market-to-book ratio of the proxy group of five AUS Utility Reports water companies.

(3)   Based upon the average market-to-book ratio of the proxy group of three Value Line (Std. Ed.) water companies.

39   As discussed previously, due to recent consolidation in the water industry

<center>11</center>

1   resulting in a fewer number of generally large water companies with sufficient

2   information available, it is increasingly difficult to select a proxy group of a

3   sufficient number of companies identical in risk to Middlesex or even close in

4   size, on average. Therefore, I have also done a study of the market

5   capitalization of Middlesex and the proxy groups of five AUS Utility Reports water

6   companies and three Value Line (Std. Ed.) water companies. The results are

7   shown on page 5 of Schedule PMA-1 which summarizes the market

8   capitalizations as of March 28, 2005.

9   Because, as previously discussed, I believe Middlesex's market data

10   produces counter-intuitive results, I have estimated Middlesex's market

11   capitalization at $223.277 million and $255.452 million at march 28 2005 using

12   the average market-to-book ratios of the two proxy groups, or 236.2% (five water

13   companies) and 238.5% (three water companies) In contrast, the market

14   capitalization of the average AUS Utility Reports water company was $707.680

15   million on March 28, 2005, or 3.2 times larger than Middlesex's estimated market

16   capitalization. In addition, the market capitalization of the average Value Line

17   (Std. Ed.) water company was $1.101 <u>billion</u> on March 28, 2005, or 4.9 times

18   larger than Middlesex. It is conventional wisdom, supported by actual returns

19   over time, and a general premise contained in basic finance textbooks, that

20   smaller companies tend to be more risky causing investors to expect greater

21   returns as compensation for that risk.

22

23   Q.   Does the financial literature affirm a relationship between size and common

24   equity cost rate?

25

26   A.   Yes. Brigham[6] states"

---

[6]   Eugene F. Brigham, <u>Fundamentals of Financial Management, Fifth Edition</u>, The Dryden Press, 1989, p 623

1
2 A number of researchers have observed that portfolios of small-firms
3 have earned consistently higher average returns than those of large-firms
4 stocks; this is called "small-firm effect." On the surface, it would seem to
5 be advantageous to the small firms to provide average returns in a stock
6 market that are higher than those of larger firms. In reality, it is bad news
7 for the small firm; what *the small-firm effect means is that the capital*
8 *market demands higher returns on stocks of small firms than on*
9 *otherwise similar stocks of the large firms.* (italics added)

10

11   V. FINANCIAL RISK

12 Q. Please define financial risk and explain why it is important to the determination of

13   a fair rate of return?

14

15 A. Financial risk is the additional risk created by the introduction of senior capital,

16   i.e., debt and preferred stock, into the capital structure. In other words, the higher

17   the proportion of senior capital in the capital structure, the higher the financial

18   risk.

19   Utilities formerly were considered to have much less business risk vis-a-vis

20   unregulated enterprises, and, as a result, a larger percentage of debt capital was

21   acceptable to investors. In June 2004, S&P revised its utility financial guidelines

22   and assigned new business profile scores to U.S. utility and power companies to

23   better reflect the relative business risk among companies in the sector. S&P's

24   revised financial guidelines to the bond rating process for utilities can be found in

25   Schedule PMA-2, page 14, while pages 1 through 9 describe the utility bond

26   rating process. As shown on page 14, S&P's revised financial guidelines for

27   utilities establishes financial target ratios for ten levels of business position/profile

28   with "1" being considered lowest risk and "10" being highest risk.

29   As shown on Schedule PMA-14, page 2, Middlesex's S&P current bond

30   rating (issue credit rating) and business profile are A+ and "3", while the average

                                    13

1   S&P bond rating and business profile of the five AUS Utility Reports water

2   companies is A+/A and "2.5" (rounded to "3") and A+/A and "2.7" (rounded to "3"),

3   for the three Value Line (Std. Ed.) water companies.

4

5   Q.   How can one measure the combined business and financial risks, i.e., investment

6   risk of an enterprise?

7
8   A.   Similar bond ratings/issue credit ratings reflect similar combined business and

9   financial risks, i.e., total risk. Although the specific business or financial risks may

10   differ between companies, the same bond rating indicates that the combined

11   risks are similar as the bond rating process reflects acknowledgment of all

12   diversifiable business and financial risks. For example, S&P expressly states that

13   the bond rating process encompasses a qualitative analysis of business and

14   financial risks (see pages 3 through 9 of Schedule PMA-2). There is no perfect

15   single proxy, such as bond rating or common stock ranking, by which one can

16   differentiate common equity risk between companies. However, the bond rating

17   provides a useful means to compare/differentiate common equity risk between

18   companies because it is the result of a thorough and comprehensive analysis of

19   all diversifiable business and financial risks, i.e., investment risk.

VI. PROXY GROUPS

20

21   Q.   Please explain how you chose the proxy group of five AUS Utility Reports water

22   companies.

23

24   A.   The basis of selection for the proxy group of five AUS Utility Reports water

25   companies were those companies that meet the following criteria: 1) they are

1   included in the Water Company Group of AUS Utility Reports (March 2005); 2)

2   they have Value Line or Thomson FN/First Call Consensus; and 3) they have

3   more than 70% of their 2003 operating revenues derived from water operations.

4   Five companies met all of these criteria.

5

6   Q.   Please describe Schedule PMA-3.

7

8   A.   Schedule PMA-3 contains comparative capitalization and financial statistics for the

9   five AUS Utility Reports water companies for the years 1999 through 2003. The

10   schedule consists of two pages. Page 1 contains a summary of the comparative

11   data for the years 1999-2003. Page 2 contains notes relevant to page 1, as well as

12   the basis of selection and names of the individual companies in the proxy group.

13   During the five-year period ending 2003, the historically achieved average

14   earnings rate on book common equity for this group ranged between 9.13% in

15   2003, and 10.78% in 1999, averaging 10.36%. The five-year ending 2003 average

16   common equity ratio based upon permanent investor-provided capital was 46.39%,

17   while the five-year average dividend payout ratio was 76.75%.

18   Coverage of interest charges, excluding all AFUDC from funds from

19   operations for the years 1999-2003 ranged between 3.12 and 3.36 times,

20   averaging 3.27 times during the five-year period, while funds from operations

21   relative to total debt ranged from 14.12% to 16.46% and averaged 14.94% for the

22   five-year period.

23

24   Q.   Please explain how you chose the proxy group of three Value Line water

25   companies.

26

27   A.   The basis of selection for the proxy group of three Value Line (Standard Edition)

1   water companies was to include those companies which are part of Value Line's

2   (Standard Edition) Water Utility Industry Group.

3

4   Q.   Please describe Schedule PMA-4.

5

6   A.   Schedule PMA-4 contains comparative capitalization and financial statistics for the

7   three Value Line (Standard Edition) water companies for the years 1999 through

8   2003. The schedule consists of two pages. Page 1 contains a summary of the

9   comparative data for the years 1999-2003. Page 2 contains notes relevant to page

10   1, as well as the basis of selection and names of the individual companies in the

11   proxy group.

12   During the five-year period ending 2003, the historically achieved average

13   earnings rate on book common equity for this group ranged between 8.86% in

14   2003, and 11.37% in 2000, averaging 10.60%. The five-year ending 2003 average

15   common equity ratio based upon permanent investor-provided capital was 46.19%,

16   while the five-year average dividend payout ratio was 75.16%.

17   Coverage of interest charges, excluding all AFUDC from funds from

18   operations for the years 1999-2003 ranged between 3.40 and 3.63 times,

19   averaging 3.54 times during the five-year period, while funds from operations

20   relative to total debt ranged from 14.60% to 18.17% and averaged 15.89% during

21   the five-year period.

22
23   VII. MIDDLESEX WATER COMPANY

24   Q.   Have you reviewed financial data for Middlesex?

25

26   A.   Yes.   Middlesex Water Company provides water services to approximately

27   58,000 retail customers within a 55 square mile area in Central New Jersey,

16

primarily in eastern Middlesex County. Middlesex has three regulated wholly-owned subsidiaries: Tidewater Utilities, Inc. (including its wholly-owned subsidiary, Southern Shores Water Company, LLC), which provides water services to approximately 26,000 retail customers in the state of Delaware; Pinelands Water Company, which supplies water to 2,400 retail customers in Burlington County, New Jersey; and Pinelands Wastewater Company which provides wastewater treatment services to these same 2,400 retail customers in Burlington County. In addition, Middlesex owns Utility Services Affiliates, Inc., a non-regulated company formed in 1995 to supply contract operations and maintenance services to the City of South Amboy, New Jersey. Middlesex also owns Utility Services Affiliates (Perth Amboy) Inc., a non-regulated company which , along with Middlesex Water Company, operates and maintains the City of Perth Amboy's 9,600 customer water and wastewater systems. Middlesex also provides water on a wholesale basis in New Jersey to part of the Township of Edison, the Boroughs of Highland Park and Sayreville and the Old Bridge and Marlboro Township Municipal Utilities Authorities. Also, Middlesex provides water treatment and pumping services under special contract to the Township of East Brunswick.

As shown on page 1 of Schedule PMA-5, during the five-year period ending 2003, the achieved average earnings rate on book common equity for Middlesex on a consolidated basis was 9.17%, ranging between 7.16% in 2000 and 11.05% in 1999. The five-year ending 2003 average common equity ratio based upon permanent investor-provided capital was 44.55%, while the five-year average dividend payout ratio was 97.27%.

Coverage of interest charges, excluding all AFUDC from funds from operations for the years 1999-2003, ranged between 2.99 and 3.44 times, averaging 3.23 times during the five-year period, which funds from operations

17

1   relative to total debt ranged from 10.76% to 12.09%, averaging 11.42% for the five-

2   year period.

3

4   VIII. CAPITAL STRUCTURE RATIOS

5   Q. What capital structure ratios do you recommend be employed in developing an

6   overall fair rate of return appropriate for the Company?

7

8   A. I recommend that the estimated capital structure ratios at June 30, 2005 of

9   Middlesex, pro forma to reflect the Company's proposed second and third quarter

10   common stock discount program and adjusted to reflect the elimination of the

11   cumulative preferred stock issued to acquire Tidewater Utilities, Inc. and Public

12   Water Supply Co., Inc. be adopted for ratemaking purposes in developing an

13   overall rate of return applicable to Middlesex. In short, the capital structure and

14   related ratios I employ represent the capital structure which finances the Middlesex

15   stand-alone New Jersey jurisdictional rate base. As stated previously, these ratios

16   consists of 49.97% long-term debt, 0.56% preferred stock, and 49.47% common

17   equity and are summarized on page 1 of Schedule PMA-6.

18

19 Q. Are the estimated capital structure ratios at June 30, 2005 pro forma and adjusted,

20   appropriate for cost of capital purposes?

21

22 A. Yes, Middlesex's capital structure ratios estimated at June 30, 2005, pro forma and

23   adjusted, are appropriate for cost of capital purposes because they are indicative

24   of the ratios and embedded cost rates of fixed capital which Middlesex will

25   experience in the near-term future, the period of time in which new rates would be

26   in effect. Since a water utility has an obligation to serve all of the time, it is

27   incumbent upon the utility to maintain capital structure ratios which should enable it

1		to attract capital when required assuming a sufficient level of earnings.
2		Middlesex's estimated June 30, 2005 capital structure, pro forma and adjusted,
3		upon which its requested overall rate of return is based, accomplishes the
4		foregoing, namely, it is accepted in the marketplace, is consistent with the capital
5		structures maintained by similar risk enterprises given its small size as will be
6		discussed below and is not unduly costly to consumers.
7		
8	Q.	How does Middlesex's ratemaking common equity ratio of 49.47%, estimated at
9		June 30, 2005, pro forma and adjusted, compare with the common equity ratios
10		maintained by the companies in the two proxy groups?
11		
12	A.	Middlesex's ratemaking common equity ratio of 49.47%, estimated at June 30,
13		2005, pro forma and adjusted, is reasonable to use and consistent with the range
14		of common equity ratios maintained, on average, by the companies in the proxy
15		group of five water companies and proxy group of three water companies upon
16		which I base my common equity cost rate. The common equity ratios of the five
17		AUS Utility Reports water companies ranged from 39.49% to 54.47% in 2003 and
18		averaged 45.78% as shown on page 3 of Schedule PMA-6. Likewise, the common
19		equity ratios of the three Value Line water companies ranged from 40.84% to
20		47.17% in 2003 and averaged 44.98% as shown on page 4 of Schedule PMA-6.
21		As discussed previously, the bond rating process encompasses a qualitative
22		analysis of business and financial risks. Total diversifiable investment risk is the
23		sum of business and financial risks. As also discussed previously, Middlesex is
24		smaller than the average water company in both proxy groups.
25		In view of the foregoing, Middlesex's estimated ratemaking common equity
26		ratio of 49.47% is reasonable, especially in view of Middlesex's smaller size vis-a-
27		vis the companies in the two proxy groups.

1

2   Q.   How do Middlesex's ratemaking capital structure ratios compare with S&P's revised

3   financial target ratios?

4

5   A.   They are reasonable in light of S&P's revised financial target ratio of total debt to

6   total capital for utilities with long-term debt rated in the A category and of similar

7   business position as Middlesex and the proxy groups, i.e., "3" (see page 2 of

8   Schedule PMA-14).

9   As shown on page 14 of Schedule PMA-2, based upon S&P's revised

10   financial target ratios, a utility assigned a business position of "3", like Middlesex

11   and the six water companies in both proxy groups requires a total debt to total

12   capital target ratio in the range of 50.0% to 55.0% in order to maintain an A bond

13   rating.

14   Middlesex's ratemaking long-term/total (since there is no short-term debt

15   expected to be outstanding which finances Middlesex's jurisdictional rate base)

16   debt ratio is 49.97% estimated at June 30, 2005, pro forma and adjusted. A long-

17   term debt ratio of 49.97% falls just below the bottom of the range of S&P's revised

18   total debt to total capital target ratio of 50.0% to 55.0% for an A rated utility with a

19   business position of "3".

20   In view of all the foregoing, it is my opinion that a capital structure based

21   upon Middlesex's estimated capital structure at June 30, 2005, pro forma and

22   adjusted, comprised of 49.97% long-term debt, 0.56% preferred stock and 49.47%

23   common equity is reasonable. It is reasonable given Middlesex's small relative

24   size, the capital structures maintained, on average, by the water companies in the

25   two proxy groups, and S&P's revised financial target ratios for a water company to

26   obtain and maintain an A bond rating.

27

IX. LONG-TERM DEBT COST RATE

Q. What cost rate for long-term debt is most appropriate for use in a cost of capital determination for Middlesex?

A. A long-term debt cost rate of 5.10% estimated at June 30, 2005 is the most appropriate and is derived from Middlesex's estimated long-term debt outstanding at June 30, 2005. I calculate the actual embedded cost rate at December 31, 2004 to be 4.64% for Middlesex for information purposes only. These cost rates are summarized on page 1 of Schedule PMA-7. The long-term debt cost rate is determined by employing a cost rate to maturity method, i.e., yield to maturity, using as inputs the stated coupon rate, net proceeds ratio, which reflects the necessary costs of issuance, early redemption premiums as well as any interest earned on the proceeds of applicable series held in trust and not fully expended, and term in years. If such costs are not permitted to be recovered in the effective long-term debt cost rate, recovery would be at the expense of the common shareholders and the cost rate for common equity capital would be higher than otherwise. Once the cost rate to maturity, i.e., effective cost rate, is determined for each issue, a composite cost rate can be calculated based upon the total annualized long-term debt cost and total long-term debt outstanding. Middlesex's embedded long-term debt cost rate at June 30, 2005 is expected to be 5.10% as shown on page 1 of Schedule PMA-7.

X. PREFERRED STOCK COST RATE

Q. What cost rate for preferred stock is most appropriate for use in a cost of capital determination?

1   A.   A preferred stock cost rate of 5.30% expected at June 30, 2005 on an estimated

2   basis is the most appropriate, for reasons previously explained. I also calculate the

3   actual embedded cost rate at December 31, 2004 to be 5.30% for Middlesex for

4   informational purposes only. These cost rates are summarized on page 1 of

5   Schedule PMA-8. In arriving at the June 30, 2005 and December 31, 2004 cost

6   rate of 5.30%, I have included the annual amortization of the early redemption

7   premiums / discount and redemption expenses and the remaining unamortized

8   issuance expenses at redemption associated with the early redemptions of

9   preferred stock in 1994 which were incurred during the twelve months ending

10   December 31, 2004 and are expected to be incurred during the twelve months

11   ending June 30, 2004. Although the Company also redeemed $123,800 of the

12         $7.00 Series in 1995, no early redemption premium was paid and the associated

13   redemption expenses were de minimis. In addition, as will be discussed

14   subsequently, since the early redemption premiums / discounts and redemption

15   expenses were written off against retained earnings, adjustments to the actual

16   December 31, 2004 and estimated June 30, 2005 balances of common equity are

17   necessary in order that the capital structure ratios remain unchanged as a result of

18   these early redemptions. Also, in developing the embedded cost rates to maturity

19   by issue, I have taken into account the impact of the necessary costs of issuance.

20   As discussed previously, if such costs are not permitted to be recovered in the

21   effective preferred stock cost rate, recovery would be at the expense of the

22   common shareholders and the cost rate for common equity capital would then e

23   higher than otherwise. Notes relevant to page 1 are shown on page 1 of Schedule

24   PMA-8. The details of the cost rates to maturity by issue are shown on page 3.

25

26   Q.   Please describe the methodology you propose which permits recovery of the costs

27   related to Middlesex's redemption of preferred stock in 1994.

22

1

2   A.   On February 1, 1994, the Company redeemed $780,000 of the $6.00 Series

3   preferred stock. The Company paid an early redemption premium of $7,800 and

4   unamortized original issuance expenses at February 1, 1994 were $8,407. Also on

5   February 1, 1994, the company redeemed $444,000 of the $8.25 Series preferred

6   stock. The company paid an early redemption premium of $4,440 and

7   unamortized original issuance expenses at February 1, 1994 were $8,439. In

8   November 1994, the Company redeemed $24,500 of the $7.00 Series at par.

9   Redemption expenses amounted to $12,240 and unamortized original issuance

10   expenses at November 1, 1994 were de minimis. The Company redeemed these

11   issues so that it could reduce the administrative burdens, and hence costs

12   associated with the issues, lower the embedded cost of preferred stock and lower

13   the proportion of preferred stock in the capital structure. The ratemaking benefits

14   of these redemptions will inure to Middlesex's ratepayers. Therefore, they should

15   bear the costs of redemption.

16   Since there were no refinancing issues through whose cost rate these costs

17   could be recovered, the mechanism I recommend to permit the recapture of those

18   costs is as follows:

19   1.   The early redemption premiums and the remaining unamortized

20   issuance expenses at redemption related to the redeemed $6.00 Series

21   on February 1, 1994 are being amortized over the remaining life (309

22   months) of the series which would have been fully retired through

23   sinking fund payments by November 1, 2019.

24   2.   The early redemption premiums and the remaining unamortized

25   issuance expenses at redemption related to the redeemed $8.25 Series

26   on February 1, 1994 are being amortized over the remaining life (137

27   months) of the Series which would have been fully retired through

1   sinking fund payments by July 1, 2005.

2

3   3.   The early redemption expenses related to the redeemed $7.00 Series in

4   November 1994 are being amortized over an assumed remaining life

5   (146 months) based upon the midpoint of the lives of the $6.00 and

6          $8.25 Series, 53 and 34 years, respectively, i.e., 43.5 years, rounded to

7   44 years.

8   Because these early redemption premiums / discounts and expenses were

9   written off against retained earnings and there was no refunding issue through

10   whose cost rate these redemption costs could be recovered, retained earnings are

11   lower than they would have been had the redemption not occurred. Therefore,

12   because no other mechanism exists with which to recover these redemption costs,

13   it is also necessary, in my opinion, to restore the actual December 31, 2004 and

14   estimated June 30, 2005 balances of the early redemption premiums / discounts/

15   and expenses and unamortized issuance expenses at redemption, as applicable, to

16   common equity, when determining the common equity ratio for ratemaking

17   purposes in order to avoid developing a rate of return that would be based upon a

18   common equity ratio lower than would be obtained if there had been no early

19   redemptions. Because customers will benefit fully from the reduction in capital

20   costs due to these redemptions, shareholders should not have to bear these

21   additional costs through an inappropriately lower common equity ratio. The

22   unamortized balances of early redemption premiums / discounts/ and expenses

23   and original issuance expenses at redemption aggregate to $11,909 at December

24   31, 2004 and $10,528 estimated at June 30, 2005 as shown on page 1 of Schedule

25   PMA-6. Although, in the instant proceeding, these adjustments do not appreciably

26   change the proposed capital structure ratios, it is still theoretically appropriate to

27   make such adjustment in order to properly allocate the costs of early redemptions

24

1   which have reduced capital cost rates.

2

3   XI. COMMON EQUITY COST RATE MODELS

4   A. The Efficient Market Hypothesis (EMH)

5   Q.   Are the cost of common equity models you use market-based models, and hence

6   based upon the EMH?

7

8   A.   Yes.   The DCF model is market-based in that market prices are utilized in

9   developing the dividend yield component of the model. The RPM is market-based

10   in that the bond ratings and expected bond yields used in the application of the

11   RPM reflect the market's assessment of risk.   In addition, the use of betas to

12   determine the equity risk premium also reflects the market's assessment of risk as

13   betas are derived from regression analyses of market prices. The CAPM is market-

14   based for many of the same reasons that the RPM is market-based i.e., the use of

15   expected bond (Treasury bond) yields and betas. The CEM is market-based in that

16   the process of selecting the comparable risk non-utility companies is based upon

17   statistics which result from regression analyses of market prices. Therefore, all the

18   cost of common equity models I utilize are market-based models, and hence based

19   upon the EMH.

20

21   Q.   Please describe the conceptual basis of the EMH.

22

23   A.   The Efficient Market Hypothesis (EMH), which is the foundation of modern

24   investment theory, was pioneered by Eugene F. Fama[7] in 1970.   An efficient

25   market is one in which security prices reflect all relevant information all the time.

---

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

This implies that prices adjust instantaneously to new information, thus reflecting the intrinsic fundamental economic value of a security.[8]

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:[9]

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".

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[8] Morin, Roger A., _Regulatory Finance - Utilities' Cost of Capital_, Public Utility Reports, Inc., Arlington, VA, 1994, p. 136.

[9] Brealey, R.A. and Myers, S.C., _Principles of Corporate Finance_, McGraw-Hill Publications, Inc., 1996, pp. 323-324.

1

2   The "semistrong" form of the EMH is generally held to be true because the

3   use of insider information often enables investors to "outperform the market" and

4   earn excessive returns.   The generally-accepted "semistrong" form of the EMH

5   means that all perceived risks are taken into account by investors in the prices they

6   pay for securities.   Investors are aware of all publicly-available information,

7   including bond ratings, discussions about companies by bond rating agencies and

8   investment analysts as well as the various cost of common equity methodologies

9   (models) discussed in the financial literature. In an attempt to emulate investor

10   behavior, this means that no single common equity cost rate model should be

11   relied upon in determining a cost rate of common equity and that the results of

12   multiple cost of common equity models should be taken into account.

13

14   Q.   Is there support in the academic literature for the need to rely upon more than one

15   cost of common equity model in arriving at a recommended common equity cost

16   rate?

17

18   A.   Yes. For example, Phillips[10] states:

19
20   Since regulation establishes a level of authorized earnings which, in
21   turn, implicitly influences dividends per share, *estimation of the growth*
22   *rate from such data is an inherently circular process.   For these*
23   *reasons, the DCF model "suggests a degree of precision which is in*
24   *fact not present" and leaves "wide room for controversy and argument*
25   *about the level of k" [investor's capitalization or discount rate, i.e., the*
26   *cost of capital].* (italics added) (p. 396)
27
28   * * *
29
30   Despite the difficulty of measuring relative risk, the comparable
31   earnings standard is no harder to apply than is the market-determined

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

27

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 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[11] states:

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 does not make it superior to other methods.* (italics added) (Morin, pp. 231-232)

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 failure of the traditional infinite growth DCF model to account for changes in relative market valuation, discussed above, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. It follows that more than one methodology should be employed in arriving at a judgment on the cost of equity and that these methodologies should be applied across a series of comparable risk companies. ...Financial literature supports the use of multiple methods.* (italics added) (Morin, p. 239)

Professor Eugene Brigham, a widely respected scholar and finance academician asserted:

In practical work, it is often best to use all three methods -CAPM, bond yield plus risk premium, and DCF - and then apply judgement when the methods produce different results. People experienced in estimating capital costs recognize that both careful analysis and very fine judgements are required. It would be nice to pretend that these judgements are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. (italics added) (Morin, pp. 239-240)

Another prominent finance scholar, Professor Stewart Myers, in his best-selling corporate finance textbook stated:

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[11] Roger A Morin, <u>Regulatory Finance-Utilities' Cost of Capital</u>, 1994, Public Utilities Reports, Inc , Arlington, VA, pp 231-232, 239-240

1
2   *The constant growth formula and the capital asset pricing model are*
3   *two different ways of getting a handle on the same problem.* (italics
4   added) (Morin, p. 240)
5
6   In an earlier article, Professor Myers explained the point more fully:
7
8   Use more than one model when you can. Because estimating the
9   opportunity cost of capital is difficult, only a fool throws away useful
10   information. That means you should not use any one model or
11   measure mechanically and exclusively. Beta is helpful as one tool in a
12   kit, to be used in parallel with DCF models or other techniques for
13   interpreting capital market data. (Morin, p. 240)
14
15
16   In view of the foregoing, it is clear that investors are aware of all of the models

17   available for use in determining a common equity cost rate. The EMH requires the

18   assumption that, collectively, investors use them all.

19

20   B. Discounted Cash Flow Model (DCF)

21   1. Theoretical Basis

22   Q.   What is the theoretical basis of the DCF model?

23

24   A.   The theory of the DCF model is that the present value of an expected future stream

25   of net cash flows during the investment holding period can be determined by

26   discounting the cash flows at the cost of capital, or the capitalization rate. DCF

27   theory suggests that an investor buys a stock for an expected total return rate

28   which is expected to be derived from cash flows received in the form of dividends

29   plus appreciation in market price (the expected growth rate). Thus, the dividend

30   yield on market price plus a growth rate equals the capitalization rate, i.e., the total

31   return rate expected by investors.

32

33   Q.   Please comment on the applicability of the DCF model in establishing a cost of

1   common equity for Middlesex.

2

3   A.   The extent to which the DCF is relied upon should depend upon the extent to which

4   the cost rate results differ from those resulting from the use of other cost of

5   common equity models because the DCF model has a tendency to mis-specify

6   investors' required return rate when the market value of common stock differs

7   significantly from its book value. Market values and book values of common stocks

8   are seldom at unity. The market-based DCF model will result in a total annual

9   dollar return on book common equity equal to the total annual dollar return

10   expected by investors only when market and book values are exactly equal, a rare

11   and unlikely situation. In recent years, the market values of utilities' common

12   stocks have been well in excess of their book values as shown on page 1 of

13   Schedule PMA-3 ranging between 209.86% and 247.85% for Middlesex, between

14   187.65% and 229.43% for the proxy group of five AUS Utility Reports water

15   companies as shown on page 1 of Schedule PMA-4, and between 206.93% and

16   225.26% for the proxy group of three Value Line (Std. Ed.) water companies as

17   shown on page 1 of Schedule PMA-5.

18   Mathematically, the DCF model understates/overstates investors' required

19   return rate when market value exceeds/is less than book value because, in many

20   instances, market prices reflect investors' assessments of long-range market price

21   growth potentials (consistent with the infinite investment horizon implicit in the

22   standard regulatory version of the DCF model) not fully reflected in analysts' shorter

23   range forecasts of future growth for earnings per share (EPS) and dividends per

24   share (DPS) accounting proxies. This indicates the need to better match market

25   prices with investors' longer range growth expectations embedded in those prices.

26   However, the understatement/overstatement of investors' required return rate

27   associated with the application of the market price-based DCF model to the book

1   value of common equity clearly illustrates why reliance upon a single common

2   equity cost rate model should be avoided.

3
4   2. Applicability of a Market-Based Common Equity
5   Cost Rate to a Book Value Rate Base
6

7   Q.   Is it reasonable to expect the market values of utilities' common stocks to

8   continue to sell well above their book values?

9

10   A.   Yes. I believe that the common stocks of utilities will continue to sell substantially

11   above their book values, because many investors, especially individuals who

12   traditionally committed less capital to the equity markets, will likely continue to

13   commit a greater percentage of their available capital to common stocks in view

14   of lower interest rate alternative investment opportunities and to provide for

15   retirement. The recent past and current capital market environment is in stark

16   contrast to the late 1970's and early 1980's when very high (by historical

17   standards) yields on secured debt instruments in public utilities were available.

18   Despite the fact that the market declined significantly during late 2001 through

19   2003, following the September 11, 2001 tragedy, utility stocks have continued to

20   sell at market prices well above their book values. The significant recent

21   increases in market-to-book ratios have been influenced by factors other than

22   fundamentals such as actual and reported growth in earnings per share (EPS)

23   and dividends per share (DPS).

24   Traditional rate base/rate of return regulation, where a market-based

25   common equity cost rate is applied to a book value rate base, presumes that

26   market-to-book ratios are one. However, there is ample empirical evidence over

27   sustained periods which demonstrate that this is an incorrect presumption.

28   Market-to-book ratios of one are rarely the case as there are many factors

31

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[12] 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[13] 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 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.

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[12]   Id., at p 395

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

1	Q.	Please explain why a DCF-derived common equity cost rate mis-specifies
2		investors' expected common equity cost rate when the market/book ratio is
3		greater or less than unity (100%).
4		
5	A.	Under the DCF model, the rate of return investors require is related to the price
6		paid for a stock i.e., market price is the basis upon which they formulate the
7		required rate of return. A regulated utility is limited to earning on its net book
8		value (depreciated original cost) rate base. As discussed previously, market
9		values differ from book values for many reasons unrelated to earnings. Thus,
10		when market values differ significantly from book values, a market-based DCF
11		cost rate applied to the book value of common equity will not accurately reflect
12		investors' expected common equity cost rate. It will either overstate or understate
13		investors' expected common equity cost rate (without regard to any adjustment
14		for flotation costs which may, at times, be appropriate on an ad hoc basis)
15		depending upon whether market value is less than or greater than book value.

Schedule PMA-9 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 10.50% return on a market price of $24.00. Moreover, as shown in Column 2, when the 10.50% 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 $1.400 on book value. With an annual dividend of $0.840, there is an opportunity for growth of $0.560 which translates to just 2.33% in contrast to the 7.00% growth in market price expected by investors. There is no way to possibly achieve the expected growth of $1.680 or 7.00%

33

1 absent a huge cut in the annual dividend, an unreasonable expectation which

2 would result in an extremely adverse reaction by investors because it would be a

3 sign of extreme financial distress.

4 Conversely, in Column 3, where the market-to-book ratio is 80%, when

5 the 10.50% return rate on market value is applied to a book value which is

6 approximately 25.0% greater than market value, the total annual return

7 opportunity is $3.150 on book value with an annual dividend of $0.840, there is

8 an opportunity for growth of $2.310 which translates to 9.63% in contrast to the

9 7.00% growth in market price expected by investors.

10 In view of the foregoing, it is clear that the DCF model either understates

11 or overstates investors' required cost of common equity capital when market

12 values exceed or are less than their underlying book values and thus multiple

13 cost of common equity models should be relied upon when estimating investors'

14 expectations.

15

16 Q. Have any commissions explicitly stated that the DCF model should not be relied

17 upon exclusively?

18

19 A. Yes. As stated previously, the majority of regulatory commissions rely upon a

20 combination of the various cost of common equity models available.

21 Specifically, the Iowa Utilities Board (IUB) has recognized the tendency of

22 the DCF model to understate investors' expected cost of common equity capital

23 when market values are significantly above their book values. In its June 17,

24 1994 Final Decision and Order in Re U.S. West Communications, Docket No.

25 RPU-93-9 the IUB stated:[14]

26

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

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)

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[15]:

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. (BPU 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)

Also, the Hawaii Public Utilities Commission (HPUC) recognized this phenomenon in a decision dated June 30, 1992[16] in a case regarding Hawaiian Electric Company, Inc., when it stated:

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

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

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> 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)

16 Q. Do other cost of common equity models contain unrealistic assumptions and

17   have shortcomings?

18

19 A. Yes. That is why I am not recommending that any of the models be relied upon

20   exclusively. I have focused on the shortcomings of the DCF model because

21   some regulatory commissions still place excessive or exclusive reliance upon it.

22   Although the DCF model is useful, it is not a superior methodology that supplants

23   financial theory and market evidence based upon other valid cost of common

24   equity models. For these reasons, no model, including the DCF, should be relied

25   upon exclusively.

26
27   3. Application of the Single-Stage DCF Model
28

29   a. Dividend Yield

30 Q. Please describe the dividend yield you used in your application of the DCF

31   model.

32

33 A. The unadjusted dividend yields are based upon an average of a recent spot date

34   (March 28, 2005) as well as an average of the three months ended February 28,

1	2005, respectively, which are shown on Schedule PMA-11. The average
2	unadjusted yield is 3.1% for the five AUS Utility Reports water companies and
3	3.0% for the three Value Line (Std. Ed.) water companies. The 3.7% unadjusted
4	dividend yield of Middlesex is also shown for information purposes only.
5	
6	b. Discrete Adjustment of Dividend Yield
7	Q. Please explain the dividend growth component shown on Schedule PMA-10,
8	pages 1 and 2, Column 2.
9	
10	A. Because dividends are paid quarterly, or periodically, as opposed to continuously
11	(daily), an adjustment to the dividend yield must be made. This is often referred
12	to as the discrete, or the Gordon Periodic, version of the DCF model.
13	Since the various companies in the proxy group increase their quarterly
'4	dividend at various times during the year, a reasonable assumption is to reflect
15	one-half the annual dividend growth rate in the D_1 expression, or $D_{1/2}$. This is a
16	conservative approach which does not overstate the dividend yield which should
17	be representative of the next twelve-month period. Therefore, the actual average
18	dividend yields in Column 1 on Schedule PMA-10 have been adjusted upward to
19	reflect one-half the growth rates shown in Column 4.
20	
21	c. Selection of Growth Rates for Use in the Single-Stage DCF Model
22	Q. Please explain the basis of the growth rates of Middlesex, the proxy group of five
23	AUS Utility Reports water companies and the proxy group of three Value Line
24	(Std. Ed.) water companies which you use in your application of the DCF model.
25	
26	A. Schedule PMA-12 indicates that 78.8% of the common shares of the proxy group
?7	of five AUS Utility Reports water companies, 70.3% of the common shares of the

proxy group of three Value Line (Std. Ed.) water companies and 82.9% of the common shares of Middlesex 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 Thomson FN/First Call, 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, I believe that 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 Middlesex and each company in both proxy groups. 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 Thomson FN/First Call forecasts. Thomson FN/First Call 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

38

1 documented financial theory that future dividend growth is a function of the

2 portion of the overall return to investors which is reinvested in the firm plus the

3 sales of new common stock. Consequently, the growth component as proxied by

4 internal and external growth is defined as follows:

5 $$g = BR + SV$$

6 Where:

7
8   B = the fraction of earnings retained by the firm,
9   i.e., retention ratio

10   R = the return on common equity

11
12   S = the growth in common shares outstanding

13
14   V = the premium/discount of a company's stock price
15   relative to its book value, i.e., one minus the
16   complement of the market/book ratio.

17   Consistent with the use of five-year historical and five-year projected

18 growth rates in EPS and DPS, I have derived five-year historical and five-year

19 projected (BR + SV) growth. Projected EPS growth rate averages are shown in

20 Column 4 on the lower half of Schedule PMA-10, while historical and projected

21 growth in DPS, EPS, and BR + SV is shown in Column 4 on the upper half of

22 Schedule PMA-10. The bases of these growth rates are summarized for the

23 companies in each proxy group on page 1, Schedule PMA-13. Supporting

24 growth rate data are detailed on pages 2 through 9 of Schedule PMA-13, while

25 pages 8 through 12 contain all of the most current Value Line Investment Survey

26 data for Middlesex and the companies in both proxy groups.

27

28   d. Conclusion of Single-Stage Cost Rates

29 Q. Please summarize the single-stage growth DCF model results.

30

31 A. As shown on Schedule PMA-10, the results of the applications of the single-stage

1   DCF model are 10.7% for the proxy group of five AUS Utility Reports water

2   companies, 10.8% for the proxy group of three Value Line (Std. Ed.) water

3   companies and, for information purposes only, 9.8% for Middlesex. In arriving at

4   conclusions of indicated common equity cost rates for the two proxy groups and

5   Middlesex, I included only those single-stage DCF results which are greater than

6   200 basis points above the average prospective yield on Moody's A rated public

7   utility bonds of 6.6%, or 8.6%, based upon Blue Chip Financial Forecasts' April 1,

8   2005 consensus forecast of about 50 economists of the expected yield on Aaa

9   rated corporate bonds as discussed subsequently and derived in Note 3 on page

10   6 of Schedule PMA-14. As will be discussed subsequently, it is necessary to

11   adjust the average Aaa rated corporate bond yield to be equivalent to a Moody's

12   A2 rated public utility bond. As detailed in Note 2 on page 1 of Schedule PMA-

13   14, an adjustment to the average prospective yield on Aaa rated corporate bonds

14   of 0.4% was required. Thus, the average prospective yield on Moody's A rated

15   public utility bonds is 6.6%.

16   Based upon a review of recent authorized returns on common equity

17   (ROE) vis-à-vis concurrent estimates of the forecasted average yield on A rated

18   public utility bonds, I determined that the equity risk premium implicit in recent

19   authorized ROEs throughout the United States is between 216 and 507 basis

20   points and of recent NJ BPU authorized ROEs, between 223 and 304 basis

21   points. In accordance with the EMH, investors are aware of these implicit equity

22   risk premia and, in my opinion, would not consider returns providing an equity risk

23   premium of only 200 basis points either reasonable or credible. Therefore, it is

24   reasonable, if not conservative, to eliminate any single-stage DCF results which

25   are no more than 200 basis points above the current prospective average yield

26   on A rated public utility bonds of 6.6%.

27

1   4. Conclusion of DCF Cost Rates

2   Q.   Please summarize the DCF model results.

3

4   A.   As shown on Schedule PMA-10, the results of the applications of the DCF model

5   are 10.7% for the proxy group of five AUS Utility Reports water companies,

6   10.8% for the proxy group of three Value Line (Std. Ed.) water companies and,

7   for information purposes only, 9.8% for Middlesex.

8

9   C. The Risk Premium Model (RPM)

10   1. Theoretical Basis

11   Q.   Please describe the theoretical basis of the RPM.

12

13   A.   Risk Premium theory indicates that the cost of common equity capital is greater

14   than the prospective company-specific cost rate for long-term debt capital. In

15   other words, the cost of common equity equals the expected cost rate for long-

16   term debt capital plus a risk premium to compensate common shareholders for

17   the added risk of being unsecured and last-in-line for any claim on the

18   corporation's assets and earnings.

19

20   Q.   Some analysts state that the RPM is another form of the CAPM. Do you agree?

21

22   A.   While there are some similarities, there is a very significant distinction between

23   the two models. The RPM and CAPM both add a "risk premium" to an interest

24   rate. However, the beta approach to the determination of an equity risk premium

25   in the RPM should not be confused with the CAPM. Beta is a measure of

26   systematic, or market, risk, a relatively small percentage of total risk (the sum of

27   both non-diversifiable systematic and diversifiable unsystematic risk).

	Unsystematic risk is fully captured in the RPM through the use of the prospective
1	
2	long-term bond yield as can be shown by reference to pages 3 through 9 of
3	Schedule PMA-2, which confirm that the bond rating process involves an
4	assessment of all business and financial risks. In contrast, the use of a risk-free
5	rate of return in the CAPM does not, and by definition cannot, reflect a company's
6	specific i.e., unsystematic risk. Consequently, a much larger portion of the total
7	common equity cost rate is reflected in the company-specific bond yield (a
8	product of the bond rating) than is reflected in the risk-free rate in the CAPM, or
9	indeed even by the dividend yield employed in the DCF model. Moreover, the
10	financial literature recognizes the RPM and CAPM as two separate and distinct
11	cost of common equity models as discussed previously.
12	
13	Q. Have you performed RPM analyses of common equity cost rate for the two proxy
14	groups?
15	
16	A. Yes. The results of my application of the RPM are summarized on page 1 of
17	Schedule PMA-14. On Line No. 3, page 1, Schedule PMA-14, I show the
18	average expected yield on A rated public utility bonds of 6.6%. On Line No. 4, I
19	show the adjustments, if necessary, that need to be made to the average 6.6%
20	expected A rated utility bond yield so that the expected yields of 6.6% in Line No.
21	5 is reflective of the average Moody's bond rating of A2 for both the AUS Utility
22	Reports' proxy group of five water companies and the three Value Line (Std. Ed.)
23	water companies and the assumed bond rating of Middlesex. On Line No. 6 of
24	page 1, my conclusions of an equity risk premium applicable to each proxy group
25	and Middlesex are shown, while the total risk premium common equity cost rates
26	are shown on Line No. 7.
27	

| 1 | | 2. <u>Estimation of Expected Bond Yield</u> |

2   Q. Please explain the basis of the expected bond yield of 6.6% applicable to the

3   average company in both proxy groups and Middlesex.

4

5   A. Because the cost of common equity is prospective, a prospective yield on

6   similarly-rated long-term debt is essential. As shown on Schedule PMA-14, page

7   2, the average Moody's bond rating of both proxy groups is A2. Since

8   Middlesex's S&P bond rating is A+, similar to the average S&P bond rating of

9   A+/A for both proxy groups, I have assumed a Moody's bond rating of A2 for

10   Middlesex. I relied upon a consensus forecast of about 50 economists of the

11   expected yield on Aaa rated corporate bonds for the six calendar quarters ending

12   with the third calendar quarter of 2006 as derived from the April 1, 2005 <u>Blue</u>

13   <u>Chip Financial Forecasts</u> (shown on page 7 of Schedule PMA-14). As shown on

14   Line No. 1 of page 1 of Schedule PMA-14, the average expected yield on

15   Moody's Aaa rated corporate bonds is 6.2%. It is necessary to adjust that

16   average yield to be equivalent to a Moody's A2 rated public utility bond.

17   Consequently, an adjustment to the average prospective yield on Aaa rated

18   corporate bonds of 0.4% was required. It is shown on Line No. 2, page 1 of

19   Schedule PMA-14 and explained in Note 2 at the bottom of the page. After

20   adjustment, the expected bond yield applicable to a Moody's A rated public utility

21   bond is 6.6% as shown on Line No. 3, page 1 of Schedule PMA-14.

22   Because both the proxy group of five AUS Utility Reports water

23   companies' and the proxy group of three Value Line (Std. Ed.) water companies'

24   average Moody's bond rating is A2 and Middlesex's is assumed to be A2, no

25   adjustment is necessary to make the prospective bond yield applicable to an A2

26   public utility bond. Therefore, the expected specific bond yield is 6.6% for both

27   proxy groups of water companies and Middlesex.

1

3. Estimation of the Equity Risk Premium

2

3   Q.   Please explain the method utilized to estimate the equity risk premium.

4

5   A.   I evaluated the results of two different historical equity risk premium studies, as

6   well as Value Line's forecasted total annual market return in excess of the

7   prospective yield on high grade corporate bonds, as detailed on pages 5, 6 and

8   8 of Schedule PMA-14. As shown on Line No. 3, page 5 of Schedule PMA-14,

9   the mean equity risk premium based on both of the studies is 4.1% applicable to

10   the proxy group of five AUS Utility Reports water companies, 4.2% applicable to

11   the proxy group of three Value Line (Std. Ed.) water companies and, for

12   information purposes only, 3.9% applicable to Middlesex. These estimates are

13   the result of an average of a beta-derived historical equity risk premium and a

14   forecasted total market equity risk premium as well as the mean historical equity

15   risk premium applicable to public utilities with bonds rated A based upon holding

16   period returns.

17   The basis of the beta-derived equity risk premia applicable to the proxy

18   group and Middlesex is shown on page 6 of Schedule PMA-14. Beta-determined

19   equity risk premia should receive substantial weight because betas are derived

20   from the market prices of common stocks over a recent five-year period. Beta is

21   a meaningful measure of prospective relative risk to the market as a whole and is

22   a logical means by which to allocate a relative share of the market's total equity

23   risk premium.

24   The total market equity risk premium utilized is 5.6% and is based upon

25   an average of both the long-term historical and forecasted market risk premia of

26   6.3% and 4.8%, respectively, as shown on page 6 of Schedule PMA-14. To

27   derive the historical market equity risk premium, I used the most recent Ibbotson

44

1   Associates' data on holding period returns for the S&P 500 Composite Index and

2   the average historical yield on Moody's Aaa and A rated corporate bonds for the

3   period 1926-2004. The use of holding period returns over a very long period of

4   time is useful in the beta approach. As Ibbotson Associates'[17] Valuation Edition

5   2005 Yearbook states:

> 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 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, and the development of the European Economic Community -- all of these happened in the last 30 years.
>
> 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 79-year period

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[17]   Ibbotson Associates, Stocks, Bonds, Bills and Inflation – Valuation Edition 2005 Yearbook, pp 80-81

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 12.4% and the long-term arithmetic mean yield on corporate bonds of 6.1% were used, as shown at Line Nos. 1 and 2 of page 6 of Schedule PMA-14. As shown on Line No. 3 of page 6, the resultant long-term historical equity risk premium on the market as a whole is 6.3%.

I used arithmetic mean return rates because they are appropriate for cost of capital purposes. As Ibbotson Associates state in their <u>Valuation Edition 2005 Yearbook</u>[18]:

> 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

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[18]   <u>Id</u>., p. 75

46

1   is expected to actually be incurred over the future time periods.
2   Graph 5-3 shows the realized equity risk premium for each year
3   based on the returns of the S&P 500 and the income return on
4   long-term government bonds. (The actual, observed difference
5   between the return on the stock market and the riskless rate is
6   known as the realized equity risk premium.) There is considerable
7   volatility in the year-by-year statistics. At times the realized equity
8   risk premium is even negative.

9   As Ibbotson Associates[19] states in their <u>1999 Yearbook</u>:

10
11   The expected equity risk premium should always be calculated
12   using the arithmetic mean. The arithmetic mean is the rate of
13   return which, when compounded over multiple periods, gives the
14   mean of the probability distribution of ending wealth
15   values....Stated another way, the arithmetic mean is correct
16   because an investment with uncertain returns will have a higher
17   expected ending wealth value than an investment which earns,
18   with certainty, its compound or geometric rate of return every
19   year....*Therefore, in the investment markets, where returns are*
20   *described by a probability distribution, the arithmetic mean is the*
21   *measure that accounts for uncertainty, and is the appropriate one*
22   *for estimating discount rates and the cost of capital.* (italics added)
23

24   <u>Ex-post (historical) total returns and equity risk premium spreads differ in
25   size and direction over time. This is precisely why the arithmetic mean is
26   important as it provides insight into the variance and standard deviation of
27   returns.</u> This prospect for variance, as captured in the arithmetic mean, provides
28   the valuable insight needed by investors to estimate future risk when making a
29   current investment. Absent such valuable insight into the potential variance of
30   returns, investors cannot meaningfully evaluate prospective risk. As discussed
31   previously, all of the cost of common equity models, including the DCF, are
32   premised upon the EMH, that all publicly available information is reflected in the
33   market prices paid. If investors relied upon the geometric mean of ex-post
34   spreads, they would have no insight into the potential variance of future returns
35   because the <u>geometric mean relates the change over many periods to a constant</u>

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19   Ibbotson Associates, <u>Stocks, Bonds, Bills and Inflation - 1999 Yearbook</u>, pp 157-158

rate of change, thereby obviating the year-to-year fluctuations, or variance, *critical to risk analysis.*

The basis of the forecasted market equity risk premium can be found on Line Nos. 4 through 6 on page 6 of Schedule PMA-14. It is derived from an average of the most recent 3-month (using the months of January 2005 through March 2005) and a recent spot (March 25, 2005) median market price appreciation potentials by Value Line as explained in detail in Note 1 on page 3 of Schedule PMA-15. The average expected price appreciation is 43% which translates to 9.35% per annum and, when added to the average (similarly calculated) dividend yield of 1.60% equates to a forecasted annual total return rate on the market as a whole of 10.95%, rounded to 11.0%. 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 4.8% shown on Schedule PMA-14, page 6, Line No. 6, the April 1, 2005 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 2006 of 6.2% from Blue Chip Financial Forecasts was deducted from the Value Line total market return of 11.0%. The calculation resulted in an expected market risk premium of 4.8%.

The average of the historical and projected market equity risk premia of 6.3% and 4.8% is 5.6%.

On page 9 of Schedule PMA-14, the most current Value Line (Standard Edition) betas for the companies in the two proxy groups and Middlesex are shown. Applying the average beta of each proxy group and Middlesex to the average market equity risk premium of 5.6% results in beta adjusted equity risk premia of 3.9% for the proxy group of five AUS Utility Reports water companies, 4.1% for the proxy group of three Value Line (Std. Ed.) water companies and, for

48

1   information purposes only, 3.6% for Middlesex as shown on Schedule PMA-14,

2   page 6, Line No. 9.

3   A mean equity risk premium of 4.2% applicable to companies with A rated

4   public utility bonds was calculated based upon holding period returns from a

5   study using public utilities, as shown on Line No. 2, page 5 of Schedule PMA-14,

6   and detailed on page 8 of the same schedule.

7   The equity risk premia applicable to the proxy group of five AUS Utility

8   Reports water companies, the proxy group of three Value Line (Std. Ed.) water

9   companies and Middlesex are the averages of the beta-derived premia and that

10 based upon the holding period returns of public utilities with A rated bonds, as

11 summarized on Schedule PMA-14, page 5, i.e., 4.1%, 4.2%, and 3.9%,

12 respectively.

13

14 Q. What are the RPM calculated common equity cost rates?

15

16 A. They are 10.7% for the five AUS Utility Reports water companies, 10.8% for the

17   three Value Line (Std. Ed.) water companies, and, for information purposes only,

18   10.5% for Middlesex as shown on Schedule PMA-14, page 1.

19

20 Q. Some critics of the RPM model claim that its weakness is that it presumes a

21   constant equity risk premium. Is such a claim valid?

22

23 A. No. The equity risk premium varies inversely with interest rate changes, although

24   not in tandem with those changes. This presumption of a constant equity risk

25   premium is no different than the presumption of a constant "g", or growth

26   component, in the DCF model. If one calculates a DCF cost rate today, the

27   absolute result "k", as well as the growth component "g", would invariably differ

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1   from a calculation made just one or several months earlier. This implies that the

2   "g" does change, although in the application of the standard DCF model, the "g"

3   is presumed to be constant. Hence, there is no difference between the RPM and

4   DCF models in that both models assume a constant component, but in reality,

5   these components, the "g" and the equity risk premium both change.

6   As Morin[20] states with respect to the DCF model:

7
8   It is not necessary that *g* be constant year after year to make the
9   model valid. *The growth rate may vary randomly around some*
10 *average expected value. Random variations around trend are*
11 *perfectly acceptable, as long as the mean expected growth is*
12 *constant.* The growth rate must be 'expectationally constant' to
13 use formal statistical jargon. (italics added)
14

15 The foregoing confirms that the RPM is similar to the DCF model. Both assume

16 an "expectationally constant" risk premium and growth rate, respectively, but in

'7 reality both vary (change) randomly around an arithmetic mean. Consequently,

18 the use of the arithmetic mean, and not the geometric mean is confirmed as

19 appropriate in the determination of an equity risk premium as discussed

20 previously.

21

22 ### D. The Capital Asset Pricing Model (CAPM)

23 #### 1. Theoretical Basis

24 Q. Please explain the theoretical basis of the CAPM.

25

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

27 market's returns. This covariability is measured by beta ("β"), an index measure

28 of an individual security's variability relative to the market. A beta less than 1.0

29 indicates lower variability while a beta greater than 1.0 indicates greater variability

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[20]   Id., p 111

50

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 is not as steeply sloped as the predicted SML. Morin[21] states:

With few exceptions, the empirical studies agree that ... low-beta

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[21]   Id., at p 321

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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 is between 0.25 and 0.30. If x = 0.25, the equation becomes:

$$K = R_F + 0.25(R_M - R_F) + 0.75\ \beta(R_M - R_F)^{22}$$

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

2. Risk-Free Rate of Return

Q. Please describe your selection of a risk-free rate of return.

A. My applications of the traditional and empirical CAPM are summarized on Schedule PMA-15, page 1. As shown on Line Nos. 1 and 4, the risk-free rate adopted for both applications is 5.5%. It is based upon the average consensus forecast of the reporting economists in the April 1, 2005 Blue Chip Financial Forecasts as shown in Note 2, page 4, of the expected yields on long-term U.S. Treasury bonds for the six quarters ending with the third calendar quarter 2006.

Q. Why is the prospective yield on long-term U.S. Treasury Bonds appropriate for use as the risk-free rate?

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[22]   Id, at pp. 335-336

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. Moreover, Morin[23] states:

> Equity investors generally have an investment horizon far in excess of fifty days. More importantly, the short-term T-bill yields reflect the impact of factors different from those influencing long-term securities, such as common stock. For example, the premium for expected inflation absorbed into 90-day Treasury bills is likely to be far different than the inflationary premium absorbed into long-term securities yields. The yields on long-term Treasury bonds match more closely with common stock returns. *For investors with a long time horizon, a long-term government bond is almost risk-free.* (italics added)

In addition, Ibbotson Associates note in their <u>Valuation Edition 2005 Yearbook</u>[24]

> 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 long-term Treasury Bonds is the appropriate proxy for the risk-free rate in the CAPM because it is less volatile

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[23] Id, at p 308

[24] Id, p. 57

53

1	than yields on Treasury Bills, is almost risk-free as noted by Morin above and is
2	consistent with the long-term investment horizon implicit in common stocks.
3	
4	3. <u>Market Equity Risk Premium</u>
5	Q. Please explain the estimation of the expected equity risk premium for the market.
6	
7	A. First, I estimate investors' expected total return rate for the market. Then I
8	estimate the expected risk-free rate which I subtract from the expected total
9	return rate for the market. The result is an expected equity risk premium for the
10	market, some proportion of which must be allocated to the companies in the
11	proxy group through the use of beta. As a measure of risk relative to the market
12	as a whole, the beta is an appropriate means by which to apportion the market
13	risk premium to a specific company or group.
14	As shown on Schedule PMA-15, page 1, Line No. 2, the proportional
15	market equity risk premium, based on the traditional CAPM, is 4.2% for
16	Middlesex, 4.4% for the proxy group of five AUS Utility Reports water companies
17	and 4.7% for the proxy group of three Value Line (Std. Ed.) water companies.
18	Applying the empirical CAPM results in an equity risk premium of 4.7% for
19	Middlesex, 4.9% for the five AUS Utility Reports water companies and 5.1% for
20	the three Value Line (Std. Ed.) water companies as shown on Line No. 5 on page
21	1 of Schedule PMA-15. The total market equity risk premium utilized was 6.4%
22	and is based upon an average of the long-term historical and projected market
23	risk premia.
24	The basis of the projected median market equity risk premium is
25	explained in detail in Note 1 on page 3 of Schedule PMA-15. As previously
26	discussed, it is derived from an average of the most recent 3-month (using the
27	months of January through March 2005) and a recent spot (March 25, 2005) 3 - 5

1   year median total market price appreciation projections from Value Line, and the

2   long-term historical average from Ibbotson Associates. The appreciation

3   projections by Value Line plus average dividend yield equate to a forecasted

4   annual total return rate on the market of 11.0%. The long-term historical return

5   rate of 12.4% on the market as a whole is from Ibbotson Associates' Stocks,

6   Bonds, Bills and Inflation: Valuation Edition 2005 Yearbook. In each instance,

7   the relevant risk-free rate was deducted from the total market return rate. For

8   example, from the Value Line projected total market return of 11.0%, the

9   forecasted average risk-free rate of 5.5% was deducted indicating a forecasted

10 market risk premium of 5.5%. From the Ibbotson Associates' long-term historical

11 total return rate of 12.4%, the long-term historical income return rate on long-term

12 U.S. Government Securities of 5.2% was deducted indicating an historical equity

13 risk premium of 7.2%. Thus, the average of the projected and historical total

14 market risk premia of 5.5% and 7.2%, respectively, is 6.35%, rounded to 6.4%.

15

16 Q   What are the results of your applications of the traditional and empirical CAPM to

17   the two proxy groups and Middlesex?

18

19 A. As shown on Schedule PMA-15, Line No. 3 of page 1, the traditional CAPM cost

20   rate is 9.9% for the proxy group of five AUS Utility Reports water companies,

21   10.2% for the proxy group of three Value Line (Std. Ed.) water companies and,

22   for information purposes only, 9.7% for Middlesex. And, as shown on Line No. 6

23   of page 1, the empirical CAPM cost rate is 10.4% for the five water companies,

24   10.6% for the three Value Line (Std. Ed.) water companies, and, for information

25   purposes only, 10.2% for Middlesex. The traditional and empirical CAPM cost

26   rates are shown individually by company on pages 2 and 3 of Schedule PMA-15.

27   As shown on Line No. 7, the CAPM cost rates applicable to the proxy group of

55

1   five AUS Utility Reports water companies, the proxy group of three Value Line

2   (Std. Ed.) water companies and, for information purposes only, Middlesex based

3   upon the traditional and empirical CAPM results are: 10.2%, 10.4%, and 10.0%,

4   respectively.

5

6 Q. Some critics of the ECAPM model claim that using adjusted betas in a traditional

7   CAPM amounts to using an ECAPM. Is such a claim valid?

8

9 A. No.   Frank J. Hanley, President, AUS Consultants - Utility Services and a

10   colleague of mine, has been in communication with Dr. Roger A. Morin of

11   Georgia State University and the author of Regulatory Finance – Utilities' Cost of

12   Capital (1994, Public Utility Reports, Inc., Arlington, VA). Via e-mail, Dr. Morin

13   has indicated that the ECAPM compensates for CAPM's inherent bias by

'4   ascribing a higher intercept and flatter slope to CAPM. It is not an attempt to

15   increase beta. In his e-mail of August 31, 2000, Dr. Morin states:

16
17   There are two distinct separate issues involved when implementing
18   the CAPM. First, given the validity of the standard CAPM, what is the
19   best proxy for expected beta? Second, and more fundamentally, does
20   the standard form of the CAPM provide the best explanation of the
21   risk-return relationship observed on capital markets?
22
23   Regarding the standard, or traditional, CAPM, Dr. Morin also states:

24   There have been countless empirical tests of the CAPM to determine
25   to what extent security returns and betas are related in the manner
26   predicted by the CAPM. The results of the tests support the idea that
27   beta is related to security returns, that the risk-return tradeoff is
28   positive, and that the relationship is linear. The contradictory finding is
29   that the risk-return tradeoff is not as steeply sloped as the predicted
30   CAPM. That is, low-beta securities earn returns somewhat higher
31   than the CAPM would predict, and high-beta securities earn less than
32   predicted. This is one of the most well-known results in finance. A
33   CAPM-based estimate of cost of capital underestimates the return
34   required from low-beta securities and overstates the return from high-
35   beta securities, based on the empirical evidence. The empirical form

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of the CAPM refines the standard form of the CAPM to account for this phenomenon.

> Thus, I do not share the view that the ECAPM is equivalent to a beta adjustment. For utility stocks with betas less than one, the CAPM understates the return. The ECAPM allows for the CAPM's inherent bias by ascribing a higher intercept and flatter slope to the CAPM. The ECAPM is a return (Y-axis, vertical axis) adjustment. It is not a beta risk (X-axis, horizontal) adjustment. <u>The ECAPM is not an attempt to increase the beta estimate, which would be a horizontal x-axis adjustment. The ECAPM is a return adjustment rather than a risk adjustment.</u> (emphasis added.)

Dr. Morin also indicates in his correspondence with Mr. Hanley that there "is a huge financial literature which supports both the use of the ECAPM and the use of adjusted betas."

Moreover, 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 notice:

> 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] 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.

Moreover, the slope of the Security Market Line (SML) should not be confused with beta. As Eugene F. Brigham, finance professor emeritus and the

1   author of many financial textbooks states[25] :

2   The slope of the SML reflects the degree of risk aversion in the
3   economy – the greater the average investor's aversion to risk, then (1)
4   the steeper is the slope of the line, (2) the greater is the risk premium
5   for any risky asset, and (3) the higher is the required rate of return on
6   risky assets.[12]

7
8   [12]Students sometimes confuse beta with the slope of the SML. This is
9   a mistake. As we saw earlier in connection with Figure 6-8, and as is
10   developed further in Appendix 6A, beta does represent the slope of a
11   line, but *not* the Security Market Line. This confusion arises partly
12   because the SML equation is generally written, in this book and
13   throughout the finance literature, as $k_i = R_F + b_i(k_M - R_F)$, and in this
14   form b_i looks like the slope coefficient and $(k_M - R_F)$ the variable. It
15   would perhaps be less confusing if the second term were written $(k_M - R_F)b_i$, but this is not generally done.
16
17

18   In view of the foregoing, using adjusted betas in an ECAPM analysis is

19   not incorrect, nor inconsistent with the financial literature. Rather, the use of the

20   traditional CAPM results in an understated estimate of the cost of common equity

21   capital for a utility with an adjusted beta below 1.00. And notwithstanding

22   regulatory support for the use of only the ECAPM, my CAPM analysis, which

23   includes both the traditional CAPM and the ECAPM, is a conservative approach

24   resulting in a reasonable estimate of the cost of common equity

25   E. Comparable Earnings Model (CEM)

26   1. Theoretical Basis

27   Q. Please describe your application of the Comparable Earnings Model and how it is

28   used to determine common equity cost rate.

29

30   A. My application of the CEM is summarized on Schedule PMA-16 which consists of

31   six pages. Pages 1 and 2 show the CEM results for the proxy group of five AUS

---

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

Utility Reports water companies, pages 3 and 4 show the CEM results for the proxy group of three Value Line (Std. Ed.) water companies and, for information purposes only, pages 1 and 2 show the CEM results for Middlesex. Pages 7 and 8 contain notes related to pages 1 through 4.

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

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1　company-specific aberrations. As stated previously, utilities need to be

2　eliminated to avoid circularity since the returns on book common equity of utilities

3　are substantially influenced by regulatory awards and are therefore not

4　representative of the returns that could be earned in a truly competitive market.

5

6　## 2. Application of the CEM

7　Q.　Please describe your application of the CEM.

8

9　A.　My application of the CEM is market-based in that the selection of non-price

10　regulated firms of comparable risk is based upon statistics derived from the

11　market prices paid by investors.

12　I have chosen three proxy groups of domestic, non-price regulated firms

13　to reflect both the systematic and unsystematic risks of the proxy group of five

14　AUS Utility Reports water companies, the proxy group of three Value Line (Std.

15　Ed.) water companies and Middlesex, respectively. The proxy group of one

16　hundred and two non-utility companies similar in risk to the proxy group of five

17　AUS Utility Reports water companies, ninety non-utility companies similar in risk

18　to the proxy group of three Value Line (Std. Ed.) water companies, and fifty-six

19　non-utility companies similar in risk to Middlesex are listed on pages 1 through 6,

20　Schedule PMA-16. The criteria used in the selection of these proxy companies

21　were that they be domestic non-utility companies and have a meaningful rate of

22　return on net worth, common equity or partners' capital reported in Value Line

23　(Standard Edition) for each of the five years ended 2003, or projected for 2007-

24　2009. Value Line betas were used as a measure of systematic risk. The

25　standard error of the regression was used as a measure of each firm's specific,

26　i.e., unsystematic risk. The standard error of the regression reflects the extent to

27　which events specific to a company's operations will affect its stock price and,

60

1   therefore, is a measure of diversifiable, unsystematic, company-specific risk. *In*

2   *essence, companies which have similar betas and standard errors of the*

3   *regressions, have similar investment risk, i.e., the sum of systematic (market) risk*

4   *as reflected by beta and unsystematic (business and financial) risk, as reflected*

5   *by the standard error of the regression, respectively. Those statistics are derived*

6   *from regression analyses using market prices which, under the EMH reflect all*

7   *relevant risks. The application of these criteria results in proxy groups of non-*

8   *price regulated firms similar in risk to Middlesex and the average company in*

9   *each proxy group.*

10   Using a Value Line, Inc. database dated March 15, 2005, the proxy group

11   of one hundred and two non-price regulated companies were chosen based upon

12   ranges of unadjusted beta and standard error of the regression. The ranges

13   were based upon the average standard deviations of the unadjusted beta and the

14   average standard error of the regression for the proxy group of five AUS Utility

15   Reports water companies.

16   The five AUS Utility Reports water companies in the proxy group have an

17   average unadjusted beta of 0.48 whose standard deviation is 0.1017 as of March

18   15, 2004, as shown on page 4, Schedule PMA-16. The average standard error

19   of the regression is 3.7247 as also shown on Schedule PMA-16, page 4 with a

20   standard deviation of 0.1637 as derived in Note 10, page 8 of Schedule PMA-16.

21   Ranges of unadjusted betas from 0.17 to 0.79 and of standard errors of the

22   regression from 3.2336 to 4.2158 were used to select the proxy group of ninety

23   domestic non-utility companies comparable to the profile of the proxy group of

24   five AUS Utility Reports water companies as can be gleaned from pages 3 and 4

25   and explained in Note 9 on pages 7 and 8 of Schedule PMA-16. These ranges

26   are based upon the proxy group's average unadjusted beta of 0.48 and average

27   standard error of the regression of 3.7247 plus or minus three standard

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deviations of beta (0.1017 x 3 = 0.3051) and standard error of the regressions (0.1637 x 3 = 0.4911). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

Using the same Value Line, Inc. database dated March 15, 2005, the proxy group of ninety 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 three Value Line (Std. Ed.) water companies.

The three Value Line (Std. Ed.) water companies in the proxy group have an average unadjusted beta of 0.55 whose standard deviation is 0.0930 as of March 15, 2005, as shown on page 6, Schedule PMA-16. The average standard error of the regression is 3.5004 as also shown on Schedule PMA-16, page 6 with a standard deviation of 0.1538 as derived in Note 12, page 8 of Schedule PMA-16. Ranges of unadjusted betas from 0.27 to 0.83 and of standard errors of the regression from 3.0390 to 3.9618 were used to select the proxy group of ninety domestic non-utility companies comparable to the profile of the proxy group of three Value Line (Std. Ed.) water companies as can be gleaned from pages 3 and 4 and explained in Note 11 on page 8 of Schedule PMA-16. These ranges are based upon the proxy group's average unadjusted beta of 0.55 and average standard error of the regression of 3.5004 plus or minus three standard deviations of beta (0.0930 x 3 = 0.2790) and standard error of the regressions (0.1538 x 3 = 0.4614). The use of three standard deviations assures capturing 99.73% of the distribution of unadjusted betas and standard errors, assuring comparability.

Again, using the same Value Line, Inc. database dated March 15, 2005,

1   the proxy group of fifty-six non-price regulated companies were chosen based

2   upon ranges of unadjusted beta and standard error of the regression. The

3   ranges were based upon the standard deviation of the unadjusted beta and the

4   average standard error of the regression for Middlesex.

5   Middlesex has an unadjusted beta of 0.42 whose standard deviation is

6   0.0861 as of March 15, 2004, as shown on page 2, Schedule PMA-16. The

7   average standard error of the regression is 3.2401 as also shown on Schedule

8   PMA-16, page 2 with a standard deviation of 0.1424 as derived in Note 5, page 7

9   of Schedule PMA-16. Ranges of unadjusted betas from 0.16 to 0.68 and of

10   standard errors of the regression from 2.8129 to 3.6673 were used to select the

11   proxy group of fifty-six domestic non-utility companies comparable to Middlesex

12   as can be gleaned from pages 1 and 2 and explained in Note 1 on page 7 of

13   Schedule PMA-16. These ranges are based upon Middlesex's average

14   unadjusted beta of 0.42 and standard error of the regression of 3.2401 plus or

15   minus three standard deviations of beta (0.0861 x 3 = 0.2583) and standard error

16   of the regressions (0.1424 x 3 = 0.4272). The use of three standard deviations

17   assures capturing 99.73% of the distribution of unadjusted betas and standard

18   errors, assuring comparability.

19   I believe that this methodology for selecting non-price regulated firms of

20   similar total risk (i.e., non-diversifiable systematic and diversifiable non-

21   systematic risk) is meaningful and effectively responds to the criticisms normally

22   associated with the selection of firms presumed to be comparable in total risk.

23   This is because the selection of non-price regulated companies comparable in

24   total risk is based upon regression analyses of market prices which reflect

25   investors' assessment of all risks, diversifiable and non-diversifiable. Thus, the

26   empirical selection process results in companies comparable in both systematic

27   and unsystematic risks, i.e., total risk.

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1   Once proxy groups of non-price regulated companies are selected, it is

2 then necessary to derive returns on book common equity, net worth or partners'

3 capital for the companies in the groups. I have measured these returns using the

4 rate of return on net worth, common equity or partners' capital reported by Value

5 Line (Standard Edition). It is reasonable to measure these returns over both the

6 most recent historical five-year period as well as those projected over the ensuing

7 five-year period.

8

9 Q.   What are your conclusions of CEM cost rate?

10

11 A.   Conclusions of CEM cost rates are 16.9% for the proxy group of five AUS Utility

12   Reports water companies as shown on page 2 of Schedule PMA-16, 16.8% for

13   the proxy group of three Value Line (Std. Ed.) water companies as shown on

14   page 6, and, for information purposes only, 16.8% for Middlesex as shown on

15   page 4. Note that I have applied a test of significance (Student's t-statistic) to

16   determine whether any of the historical or projected returns are significantly

17   different from their respective means at the 95% confidence level. As a result,

18   the historical and the projected means of several companies have been

19   excluded.

20   I have also eliminated from the groups of non-price regulated companies,

21   all those rates of return which are 20.0% or greater or 8.6% or less, i.e., 200

22   basis points above the current prospective yield of 6.6% on Moody's A rated

23   public utility bonds (see page 1 of Schedule PMA-14) for reasons discussed

24   previously. Such an elimination results in an arithmetic mean return rate of

25   14.8% on an historical five-year and 13.9% on a projected five-year basis for the

26   five AUS Utility Reports water companies, 14.7% on an historical five-year basis

27   and 14.0% on a projected five-year basis for the three Value Line (Std. Ed.) water

1   companies and for information purposes only, 14.0% on an historical five-year

2   and 13.6% on a projected five-year basis for Middlesex as shown on pages 2, 4

3   and 6 of Schedule PMA-16, respectively. I rely upon the midpoint of the

4   arithmetic mean historical five-year and projected five-year rates of return of

5   14.4% and 14.4% as my CEM conclusions for each proxy group, respectively,

6   and for information purposes only, 13.8% for Middlesex.

7

8   XII. RECOMMENDED COMMON EQUITY COST RATE

9   .Q.   What is your recommended common equity cost rate?

10

11 A.   It is 11.10%, based upon a range of common equity cost rates of 11.05% to

12 11.15% after business risk adjustment based upon the common equity cost rates

13 resulting from all four cost of common equity models applied to the market data

14 of the two proxy groups. As discussed previously, the EMH logically mandates

15 the use of multiple cost of common equity models.

16 In formulating my recommended common equity cost rate of 11.10%, I

17 reviewed the results of the application of four different cost of common equity

18 models, namely, the DCF, RPM, CAPM, and CEM for the proxy groups and

19 Middlesex. I employ all four cost of common equity models as primary tools in

20 arriving at my recommended common equity cost rate because no single model

21 is so inherently precise that it can be relied upon solely, to the exclusion of other

22 theoretically sound models. As discussed above, all four models are based upon

23 the Efficient Market Hypothesis (EMH), and therefore, have application problems

24 associated with them. The EMH, as also previously discussed, requires the

25 assumption that investors rely upon multiple cost of common equity models.

26 Moreover, as demonstrated in this testimony, the prudence of using multiple cost

27 of common equity models is supported in the financial literature. Therefore, none

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| 1 | should be relied upon exclusively to estimate investors' required rate of return on |
| 2 | common equity. |

In a market environment where market value deviates significantly from book value (lower or higher), sole reliance on the DCF model is problematic for a regulated utility because its application results in an overstatement or understatement, respectively, of investors' required rate of return. Investors expect to achieve their required rate of return based upon dividends received <u>and appreciation in market price</u>. 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 and Hawaii, which have previously relied primarily upon the DCF, have 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 groups of five AUS Utility Reports water companies and three Value Line (Std. Ed.) water companies, as well as Middlesex, are shown on Schedule PMA-1, page 2 and summarized below:

Table 4

	Proxy Group of Five AUS Utility Reports Water Cos.	Proxy Group of Three Value Line (Std. Ed.) Water Cos.	Middlesex Water Company
Discounted Cash Flow Model	10.7%	10.8%	9.8%
Risk Premium Model	10.7	10.8	10.5
Capital Asset Pricing Model	10.2	10.4	10.0
Comparable Earnings Model	14.4	14.4	13.8
Indicated Common Equity Cost Rate Before Business Risk Adjustment	10.90%	11.00%	10.50%
Business Risk Adjustment	0.15	0.15	--
Common Equity Cost Rate After Adjustment for Business Risk	11.05%	11.15%	10.50%
Recommended Common Equity Cost Rate		11.10%	

Based upon these common equity cost rate results, I conclude that a common equity cost rate of 10.90% is indicated for the proxy group of five AUS Utility Reports water companies, 11.00% for the proxy group of three Value Line (Std. Ed.) water companies and 10.50% is indicated for Middlesex based upon the use of multiple common equity cost rate models and before any adjustment for Middlesex's greater relative business risk as shown on Line No. 5, page 2 of Schedule PMA-1.

However, in my opinion, given Middlesex's greater business risk vis-à-vis the water companies in both proxy groups as discussed previously, due to its small size and the significant pressures on its credit metrics as noted by S&P, the indicated common equity cost rate of 10.50% for Middlesex is counterintuitive and defies common sense relative to the indicated common equity cost rates of 10.90% and 11.00% before business risk adjustment for the two proxy groups. Moreover, as discussed by Roger A. Morin[26] on pages 201 and 202 of Regulatory Finance – Utilities' Cost of Capital, which are included as Schedule PMA-17,

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[26]   Id at pp 201 – 202

1 "[t]here are several reasons why the determination of cost of capital should not

2 rest on a sample of one firm." These include:

3
4   1) Consistency with the notion of fair and reasonable return promulgated

5   in the *Hope* and *Bluefield* cases.

6   2) Added reliability

7   3) Abnormal conditions

8   4) Circularity problem.

9   These four reasons / conditions exist for Middlesex at this time.

10 Regarding consistency with the *Hope* and *Bluefield* cases, Morin notes that "[t]he

11 basis premise in determining a fair return is that the allowed return on equity

12 should be commensurate with returns on investments in other firms with

13 comparable risk" necessitates the use of proxy companies.

14   And, regarding added reliability, Morin states that:

15   group comparisons not only act as a useful check on the
16   magnitude of the cost of equity estimate obtained from a single
17   company, but also mitigate any distortion introduced by
18   measurement errors in the two components of equity return,
19   namely dividend yield and growth. Utilizing a portfolio of similar
20   companies along with the company-specific DCF acts to reduce
21   the chance of either overestimating or underestimating the cost of
22   equity for an individual company. By relying solely on a single-
23   company DCF estimate or for that matter on a single methodology,
24   a regulatory commission limits its flexibility and increases the risk
25   of authorizing unreasonable rate of return.

26
27   In addition, regarding abnormal conditions, Morin states:

28   When there is reason to believe that the standard DCF model is
29   inapplicable to a particular utility, or when a utility is experiencing
30   extraordinary circumstances, the use of a benchmark group of
31   companies is the only viable alternative to measure equity costs
32   through the DCF method. Appropriate risk adjustments must, of
33   course, be rendered.

68

Finally, regarding the circularity problem, Morin notes:

Stock price, hence cost of equity capital, depends on investors growth expectations, which in turn depend partially on investors perception of the regulatory process. The net result is that the cost of equity depends in part on anticipated regulatory action, since both component of equity return – yield and growth -- are influenced by the regulatory process. Carried to its extreme, this implies that regulation would in effect deliver whatever equity return investors expect. . . It is thus imperative to examine market data not related to the firm's financial statistics as a check on the standard DCF model. The circularity problem, to the extent that it exists, can be mitigated by referenced data on non-regulated companies as well as on other utilities.

Although Morin's discussion relates specifically to the DCF model, it is equally applicable to the use of the results of the RPM, CAPM and indicated common equity cost rate results of the two proxy groups of water companies, as conservatively adjusted below for Middlesex's greater business risk vis-à-vis the two proxy groups due to its smaller relative size.

As discussed previously, Middlesex has greater business risk than the average proxy group company because of its small size vis-à-vis each proxy group, whether measured by book capitalization or the market capitalization of common equity (estimated market value for Middlesex, whose common stock is not traded). Therefore, it is necessary to upwardly adjust the 10.90% and 11.00% indicated common equity cost rates based upon each proxy group, respectively.

Based upon Middlesex's small relative size, an adjustment to reflect its smaller relative size of 2.65% (265 basis points) relative to the indicated common equity cost rate of the five AUS Utility Reports water companies and 2.96% (296 basis points) relative to the indicated common equity cost rate of the three Value Line (Std. Ed.) water companies are indicated. These adjustments are based upon data contained in Chapter 7 entitled "Firm Size and Return" from Ibbotson

Associates' <u>Stocks, Bonds, Bills and Inflation-Valuation Edition 2005 Yearbook</u>. 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 1926-2004 period and related data shown on pages 3 through 18 of Schedule PMA-1. The average size premia for the deciles in which the proxy groups fall have been compared to the average size premia for the 9th and 10th deciles between which Middlesex falls on the March 28, 2005. As shown on page 3 of Schedule PMA-1, the size premium spread between Middlesex and the five water companies is 2.65% and 2.96% between Middlesex and the three Value Line (Std. Ed.) water companies. Page 4 contains notes relative to page 3. Page 5 contains data in support of page 3 while pages 6 through 18 of PMA-1 contain relevant information from the Ibbotson Associates' <u>Valuation Edition 2005 Yearbook</u> discussed previously.

Consequently, business risk adjustments of 2.65% and 2.96% are indicated for the five water companies and the three Value Line (Std. Ed.) water companies, respectively. However, I will make a very conservative business risk adjustment of 0.15% (15 basis points) to the indicated common equity cost rates of 10.90% and 11.00% for the five AUS Utility Reports water companies and the three Value Line (Std. Ed.) water companies, respectively.

Therefore, as shown on page 2 of Schedule PMA-1 at Line No. 7 and Table 4 above, the indicated common equity cost rates based on each proxy group, including the business adjustment based upon Middlesex's small size are 11.05% and 11.15%. My recommended common equity cost rate of 11.10% is based upon the average of these cost rates, 11.10%. In my opinion, such a cost rate is both reasonable and conservative.

1

2   Q.   Does that conclude your direct testimony?

3

4   A.   Yes.

APPENDIX A

PROFESSIONAL QUALIFICATIONS

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT

AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL QUALIFICATIONS
OF
PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

PROFESSIONAL EXPERIENCE

1996-Present

As a Vice President, I continue to prepare fair rate of return and cost of capital exhibits, as well as submitting testimony on same before state public utility commissions. I continue to provide assistance and support throughout the entire ratemaking litigation process.

As the Publisher of AUS Utility Reports (formerly C. A. Turner Utility Reports), I am responsible for the production, publishing, and distribution of the reports. AUS Utility Reports provides financial data and related ratios for about 200 public utilities, i.e., electric, combination gas and electric, natural gas distribution, natural gas transmission, telephone, and water utilities, on a monthly, quarterly and annual basis. Among the subscribers of AUS Utility Reports are utilities, many state regulatory commissions, federal agencies, individuals, brokerage firms, attorneys, as well as public and academic libraries. The publication has continuously provided financial statistics on the utility industry since 1930.

As the Publisher of AUS Utility Reports, I supervise the production, publishing, and distribution of the AGA Rate Service publications under license from the American Gas Association. I am also responsible for maintaining and calculating the performance of the AGA Index, a market capitalization weighted index of the common stocks of the approximately 70 corporate members of the AGA. In addition, I supervise the production of a quarterly survey of investor-owned water company rate case activity on behalf of the National Association of Water Companies.

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
Delaware
Florida
Hawaii
Idaho
Illinois
Indiana
Maine
Maryland

Michigan
Missouri
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.
Audubon Water Company
Carolina Pines Utilities, Inc.
Carolina Water Service, Inc.
Consumers Illinois Water Company
Consumers Maine Water Company
Consumers New Jersey Water Company
Elizabethtown Water Company
Emporium Water Company
GTE Hawaiian Telephone Inc.
Greenridge Utilities, Inc.
Long Neck Water Company
Middlesex Water Company
Missouri-American Water Company
Mt. Holly Water Company
Nero Utility Services, Inc.
New Jersey-American Water Company
Ohio-American Water Company
Pinelands Waste Water Company

Pittsburgh Thermal
Sussex Shores Water Company
Thames Water Americas
Tidewater Utilities, Inc.
Transylvania Utilities, Inc.
Twin Lakes Utilities, Inc.
United Utility Companies
United Water Arkansas, Inc.
United Water Delaware, Inc.
United Water Idaho, Inc.
United Water Indiana, Inc.
United Water New Rochelle, Inc.
United Water Virginia, Inc.
United Water West Lafayette, Inc.
Utilities, Inc. of Florida
Valley Energy, Inc.
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

Rate of Return Study Clients, Continued

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.
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.
Newco Waste Systems of NJ, Inc.
New Jersey-American Water Company
New Jersey Natural Gas 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:

Society of Utility and Regulatory Financial Analysts (serve as Secretary/Treasurer from 2004-2006)
Energy Association of Pennsylvania
National Association of Water Companies – Member of the Finance Committee

MIDDLESEX WATER COMPANY

DOCKET NO. _____

EXHIBIT

TO ACCOMPANY THE

DIRECT TESTIMONY

OF

PAULINE M. AHERN, CRRA
VICE PRESIDENT
AUS CONSULTANTS - UTILITY SERVICES

CONCERNING

FAIR RATE OF RETURN

MAY 2005

Middlesex Water Company
Table of Contents
to the Financial Supporting Exhibit
of Pauline M. Ahern

<u>Middlesex Water Company</u>
Summary of Cost of Capital and Fair Rate of Return
<u>Estimated, Pro Forma and Adjusted at June 30, 2005</u>

Type of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate (1)
Long-Term Debt	49.97 %	5 10 % (3)	2 55 %
Preferred Stock	0.56	5.30 (4)	0 03
Common Equity	49.47	11.10 (5)	5.49
Total	100.00 %		8.07 %

Notes:

(1) From page 1 of Schedule PMA-6 of this Exhibit

(2) From page 1 of Schedule PMA-7 of this Exhibit

(3) From page 1 of Schedule PMA-8 of this Exhibit

(4) Based upon informed judgment from the entire study, the principal results of which are summarized on page 2 of this Schedule

<u>Middlesex Water Company</u>
<u>Brief Summary of Common Equity Cost Rate</u>

No.	Principal Methods	Proxy Group of Five AUS Utility Reports Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Middlesex Water Company
1	Discounted Cash Flow Model (DCF) (1)	10 7 %	10 8 %	9.6 %
2	Risk Premium Model (RPM) (2)	10 7	10.8	10 5
3	Capital Asset Pricing Model (CAPM) (3)	10 2	10 4	10 0
4	Comparable Earnings Model (CEM) (4)	14.4	14 4	13.8
5.	Indicated Common Equity Cost Rate before Adjustment for Business Risk	10 90 %	11 00 %	10 50
6	Business Risk Adjustment (5)	0.15	0.15	--
7	Indicated Common Equity Cost Rate after Adjustment for Business Risk	11.05 %	11.15 %	10.50 %
8	Recommendation	11.10%		

Notes: (1) From Schedule PMA-10
      (2) From page 1 of Schedule PMA-14.
      (3) From page 1 Schedule PMA-15.
      (4) From pages 2 4 and 6 of Schedule PMA-16
      (5) Business risk adjustment to reflect Middlesex Water Company's greater business risk due to its small size vis-à-vis
          each proxy group as detailed in Ms Ahern's direct testimony

Middlesex 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 2003 (millions)	(times larger)	2 Market Capitalization on March 28, 2005 (1) (millions)	(times larger)	3 Applicable Decile of the NYSE/AMEX/NASDAQ	4 Applicable Size Premium	5 Spread from Applicable Size Premium (2)
1.	Middlesex Water Company	$ 194,650 (3)						
A.	Proxy Group of Five AUS Utility Reports Water Companies			$ 223,277		9 - 10 (4)	4.64% (5)	
B.	Proxy Group of Three Value Line (Standard Edition) Water Companies			$ 225,452		9 - 10 (4)	4.64% (5)	
2.	Proxy Group of Five AUS Utility Reports Water Companies	$ 564,304 (6)	2.9 x	$ 707,680	3.2 x	7 - 8 (7)	1.99% (8)	2.65%
3.	Proxy Group of Three Value Line (Standard Edition) Water Companies	$ 865,128 (9)	4.4	$ 1,101,438	4.9	6 - 7 (10)	1.68% (11)	2.96%

Decile	Number of Companies	Recent Total Market Capitalization (millions)	Recent Average Market (millions)
1 - Largest	172	$9,214,688.366	$47,769.816
2	177	1,722,153.325	9,729.680
3	199	894,917.914	4,497.075
4	209	548,389.454	2,623.873
5	219	400,361.543	1,828.226
6	257	325,662.936	1,267.171
7	300	264,131.617	880.439
8	372	219,976.996	591.336
9	589	230,476.080	391.301
10 - Smallest	1782	185,820.318	104.276

See page 4 for notes.

<u>Middlesex Water Company</u>
Derivation of Investment Risk Adjustment Based upon
<u>Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE</u>

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 2.65% in Column 5, Line No. 2 is derived as follows 2.65% = 4.64% - 1.99%

(3)   From page 1 of Schedule PMA-5

(4)   With an estimated market capitalization of $223.277 million (based upon the proxy group of five AUS Utility Reports water companies) and $225.452 (based upon the proxy group of three Value Line (Standard Edition) water companies), Middlesex Water Company falls between the 9th and 10th deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $247.789 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule

(5)   Average size premium applicable to the 9th and 10th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

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

(7)   With an estimated market capitalization of $707.680 million, the proxy group of five AUS Utility Reports water companies falls between the 7th and 8th deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $735.888 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(8)   Average size premium applicable to the 7th and 8th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

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

(10)   With an estimated market capitalization of $1,101.438 million, the proxy group of three Value Line (Standard Edition) water companies falls between the 6th and 7th deciles of the NYSE/AMEX/NASDAQ which have an average market capitalization of $1,073.805 million as can be gleaned from the information shown in the table on the bottom half of page 3 of this Schedule.

(11)   Average size premium applicable to the 6th and 7th deciles of the NYSE/AMEX/NASDAQ as shown on page 15 of this Schedule.

Source of Information: Ibbotson Associates, <u>Stocks, Bonds, Bills and Inflation – Valuation Edition – 2005 Yearbook</u>, Chicago, IL, 2005

Middlesex Water Company
Market Capitalization of Middlesex Water Company,
the Proxy Group of Five AUS Utility Reports Water Companies and the
the Proxy Group of Three Value Line (Standard Edition) Water Companies

Company	1 Common Stock Shares Outstanding at September 30, 2004 (millions)	2 Book Value per Share at September 30, 2004 (1)	3 Total Common Equity at September 30, 2004 (millions)	4 Closing Stock Market Price on March 28, 2005	5 Market-to-Book Ratio at March 28, 2005 (2)	6 Market Capitalization on March 28, 2005 (3) (millions)
Middlesex Water Company	11.327	$ 8.345	$ 94.529		236.2 (4)	$ 223.277 (5)
Proxy Group of Five AUS Utility Reports Water Companies					236.5 (6)	$ 225.452 (7)
Proxy Group of Three Value Line (Standard Edition) Water Companies						
Proxy Group of Five AUS Utility Reports Water Companies						
American States Water Co.	16.669	$ 15.238	$ 254.303	$ 25.500	167.3 %	$ 425.570
Aqua America, Inc.	93.243	7.294	680.119	24.200	331.8	2,256.481
Artesian Resources Corp.	3.946	13.747	54.245	26.050	189.5	102.793
California Water Service Group	18.345	15.678	287.605	33.920	216.4	622.262
York Water Company	6.874	6.925	47.601	19.100	275.8	131.293
Average	27.819	$ 11.776	$ 264.775	$ 25.754	236.2 %	$ 707.680
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.	16.669	$ 15.238	$ 254.303	$ 25.500	167.3 %	$ 425.570
Aqua America, Inc.	93.243	7.294	680.119	24.200	331.8	2,256.481
California Water Service Group	18.345	15.678	287.605	33.920	216.4	622.262
	42.759	$ 12.737	$ 407.342	$ 27.873	238.5 %	$ 1,101.438

NA = Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 5 * Column 3.
(4) The market-to-book ratio of Middlesex Water Company at March 28, 2005 is assumed to be equal to the average market-to-book ratio at March 28, 2005 of the proxy group of five AUS Utility Reports Water Companies.
(5) Middlesex Water Company's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at March 28, 2005 of the proxy group of five AUS Utility Reports water companies, 232.8%, and Middlesex Water Company's market capitalization at March 28, 2005 would therefore have been $223.277million. ($223.277 = $94.529 * 236.2%).
(6) The market-to-book ratio of Middlesex Water Company at March 28, 2005 is assumed to be equal to the average market-to-book ratio at March 28, 2005 of the proxy group of three Value Line (Standard Edition) water companies.
(7) Middlesex Water Company's common stock, if traded, would trade at a market-to-book ratio equal to the average market-to-book ratio at March 28, 2005 of the proxy group of three Value Line (Standard Edition) water companies, 238.5%, and Middlesex Water Company's market capitalization at March 28, 2005 would therefore have been $225.452 million. ($225.452 = $94,529 * 238.5%).

Stocks, Bonds, Bills
and Inflation

SBBI

Valuation Edition
2005 Yearbook

IbbotsonAssociates

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. Approximately two-thirds of the market value is represented by the first decile, which currently consists of 172 stocks, while the smallest decile accounts for just over one percent of the market value. The data in the second column of Table 7-1 are averages across all

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[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.

79 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 2004.

Table 7-1
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Size and Composition
1926-2004

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 31%	172	5B 214,688,366	63 16%
2	13 97%	177	1 722,153 325	13 24%
3	7 58%	199	894.917,914	6 88%
4	4 74%	209	548.389 454	4 22%
5	3 24%	219	400,381 543	3 08%
6	2 37%	257	325 662 936	2 50%
7	1 73%	300	264 131,617	2 03%
8	1 28%	372	219 976,996	1 69%
9	0 98%	589	230,476 080	1 77%
10-Smallest	0 80%	1 782	185,820.318	1 43%
Mid-Cap 3-5	15 56%	627	1.843.688.910	14 18%
Low Cap 6-8	5 38%	929	809.771,549	6 23%
Micro-Cap 9-10	1 79%	2.371	416 296 398	3 20%

Source: © 2D0503 CRSP* Center for Research in Security Prices Graduate School of Business The University of Chicago Used with permission All rights reserved www crsp uchicago edu

Historical average percentage of total capitalization shows the average, over the last 79 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, 2004

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 $6,241,953,000 but greater than $1,607,854,000. Low-cap stocks include deciles 6-8 and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below $1,607,854,000 but greater than $505,437,000. Micro-cap stocks include deciles 9-10 and include companies with market capitalizations at or below $505,437,000 The market capitalization of the smallest company included in the micro-capitalization group is currently $1,393,000.

Table 7-2

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Largest Company
and Its Market Capitalization by Decile
September 30. 2004

Decile	Market Capitalization of Largest Company (In thousands)	Company Name
1-Largest	S342,087 219	General Electric Co
2	14.096,886	Agilent Technologies Inc
3	6.241.953	Tenet Healthcare Corp
4	3 464 104	Wellchoice Inc
5	2 231.707	OGE Energy Corp
6	1 607 854	Entercom Communications Corp
7	1,097.603	Vintage Petroleum Inc
8	746,219	Wabash National Corp
9	505 437	World Fuel Services Corp
10-Smallest	262.725	Mastec Inc

Source: Center for Research In Security Prices University of Chicago

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles over 1926–2004 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 two 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 mar-
ket 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 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. This diver-
gence 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 to 1965

Date (Sept 30)	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
	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	$61 490	$14 040	$4 305	$14,100	$4 325	$43
1927	$65 281	$14 746	$4 450	$15 311	$4 496	$72
1928	$81 998	$18,975	$5,074	$19,050	$5 119	$135
1929	$107 085	$24,328	$5.875	$24,480	$5 915	$126
1930	$67 808	$13 050	$3 219	$13 068	$3 264	$30
1931	$42 607	$8,142	$1 905	$8,222	$1 927	$15
1932	$12 431	$2 170	$473	$2,196	$477	$19
1933	$40 298	$7,210	$1,830	$7 280	$1 875	$100
1934	$38 129	$6 669	$1 669	$6,734	$1 673	$68
1935	$37.631	$6 519	$1.350	$6 549	$1.383	$38
1936	$46 920	$11,505	$2 660	$11 526	$2,668	$98
1937	$51 750	$13,601	$3 500	$13 635	$3 539	$68
1938	$36 102	$8 325	$2 125	$8 372	$2 145	$60
1939	$35.784	$7 367	$1.697	$7 389	$1.800	$75
1940	$31 050	$7,990	$1,861	$8 007	$1.872	$51
1941	$31 744	$8 316	$2 086	$8,336	$2 087	$72
1942	$26 135	$6 870	$1.779	$6 875	$1 788	$82
1943	$43,218	$11 475	$3,847	$11 480	$3 903	$395
1944	$46.621	$13,066	$4,800	$13 068	$4.812	$309
1945	$55 268	$17,325	$6 413	$17 575	$6,428	$225
1946	$79 158	$24,192	$10.013	$24,199	$10 051	$829
1947	$57,830	$17 735	$6 373	$17,872	$6 380	$747
1948	$67,238	$19.575	$7.313	$19,651	$7 329	$784
1949	$55 506	$14,549	$5 037	$14 577	$5,108	$379
1950	$65 881	$18 675	$6 176	$18.750	$6 201	$303
1951	$82,517	$22 750	$7 567	$22,860	$7,598	$668
1952	$97 936	$25 452	$8 428	$25 532	$8 480	$480
1953	$98 595	$25,374	$8,156	$25 395	$8,168	$459
1954	$125 834	$29,645	$8,484	$29 707	$8,488	$463
1955	$170 829	$41 445	$12 353	$41.681	$12,366	$553
1956	$183.434	$46,805	$13 481	$46,886	$13 524	$1 122
1957	$192 861	$47 658	$13 844	$48,509	$13,848	$925
1958	$195.083	$46,774	$13,789	$46 871	$13 816	$550
1959	$253 644	$64,221	$19,500	$64 372	$19,548	$1,804
1960	$246 202	$61 485	$19 344	$61 529	$19,385	$831
1961	$296,261	$79 058	$23.562	$79 422	$23,613	$2,455
1962	$250 433	$58 866	$18 952	$59,143	$18,958	$1.018
1963	$308,438	$71.846	$23 819	$71,971	$23,822	$296
1964	$344 033	$79 343	$25,594	$79,508	$25,595	$223
1965	$363.759	$84,479	$28.365	$84 600	$28 375	$250

Source: Center for Research in Security Prices University of Chicago

Firm Size and Return

Table 7-3 (continued)

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

from 1966 to 2004

Date (Sept 30)	Capitalization of Largest Company (in thousands)			Capitalization of Smallest Company (in thousands)		
	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	$399,455	$99,578	$34 884	$99 935	$34 966	$381
1967	$459,170	$117,985	$42,267	$118,329	$42,313	$381
1968	$528,326	$149,261	$60 351	$150 128	$60,397	$592
1969	$517,452	$144,770	$54,273	$145,684	$54,280	$2,119
1970	$380 246	$94,025	$29,910	$94,047	$29,916	$822
1971	$542,517	$145,340	$45,571	$145,673	$45 589	$865
1972	$545 211	$139,647	$46,728	$139,710	$46,757	$1,031
1973	$424 584	$94,809	$29,601	$95 378	$29,606	$561
1974	$344 013	$75 272	$22,475	$75.853	$22,481	$444
1975	$465,763	$96,954	$28,140	$97,266	$28,144	$540
1976	$551,071	$116,184	$31 987	$116,212	$32,002	$564
1977	$573,084	$135,804	$39.192	$137,323	$39 254	$513
1978	$572,967	$159 778	$46,621	$160,524	$46 629	$830
1979	$861,336	$174,480	$49,088	$174,517	$49,172	$948
1980	$754.562	$194,012	$48,671	$194,241	$48,953	$549
1981	$954.665	$259,028	$71,276	$261,059	$71,289	$1,446
1982	$762,028	$205 590	$54,675	$206,536	$54,883	$1,060
1983	$1,200,680	$352,698	$103,443	$352,944	$103,530	$2,025
1984	$1 068,972	$314.650	$90,419	$315,214	$90,659	$2,093
1985	$1 432,342	$367,413	$93,810	$368,249	$94,000	$760
1986	$1,857 621	$444,827	$109.956	$445,648	$109.975	$706
1987	$2,059,143	$467,430	$112,035	$468,948	$112,125	$1,277
1988	$1,957.926	$420.257	$94,268	$421,340	$94,302	$696
1989	$2 147,608	$480,975	$100,285	$483 623	$100,384	$96
1990	$2,164 185	$472,003	$93.627	$474 065	$93,750	$132
1991	$2,129,863	$457,958	$87,586	$458,853	$87,733	$278
1992	$2,428,671	$500,346	$103.352	$501,050	$103.500	$510
1993	$2 711,068	$608,520	$137,945	$608,825	$137,987	$602
1994	$2.497 073	$601,552	$149.435	$602,552	$149,532	$598
1995	$2,793 761	$653,178	$158,011	$654,019	$158,063	$89
1996	$3,150,685	$763,377	$195,188	$763,812	$195,326	$1,043
1997	$3,511,132	$818 299	$230,472	$821,028	$230,554	$480
1998	$4,216,707	$934,264	$253,329	$936,727	$253,336	$1,671
1999	$4,251,741	$875,309	$218,336	$875,582	$218,368	$1,502
2000	$4 143,902	$840,000	$192,598	$840,730	$192,721	$1,462
2001	$5.252,063	$1,114,792	$269,275	$1 115 200	$270,391	$443
2002	$5 012,705	$1 143,845	$314.042	$1,144 452	$314,174	$501
2003	$4 794,027	$1,166,799	$330,608	$1,167,040	$330,797	$332
2004	$6 241,953	$1,607,854	$505,437	$1.607,931	$506,410	$1.393

Source: Center for Research in Security Prices University of Chicago

Table 7-4
Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, Summary Statistics of Annual Returns
1926-2004

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9 6%	11 4%	19 27%	0 09
2	10 9	13 2	22 00	0 03
3	11 3	13 8	23 81	-0 02
4	11 3	14 4	26 10	-0 02
5	11 7	15 0	26 94	-0 02
6	11 8	15 5	27 97	0 04
7	11 6	15 7	30 17	0 01
8	11 9	16 7	33 65	0 04
9	12 2	17 7	36 77	0 05
10-Smallest	14 0	21 8	45 67	0 15
Mid-Cap, 3-5	11 4	14 2	24 90	-0 02
Low-Cap, 6-8	11 6	15 8	29 68	0 03
Micro-Cap, 9-10	12 8	19 0	39 38	0 08
NYSE/AMEX/NASDAQ Total Value-Weighted Index	10 1	12 1	20 32	0 03

Source: Center for Research in Security Prices University of Chicago

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 sur- prising 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.

Firm Size and Return

Graph 7-1

Size-Decile Portfolios of the NYSE/AMEX/NASDAQ: Wealth Indices of Investments in Mid-, Low-, Micro- and Total Capitalization Stocks
1925–2004
Year-end 1925 = $1 00

Source: Center for Research in Security Prices, University of Chicago

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 79 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 explainable 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.

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2 The equity risk premium is estimated by the 79-year arithmetic mean return on large company stocks, 12 39 percent, less the 79-year arithmetic mean income-return component of 20-year government bonds as the historical riskless rate, in this case 5 22 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 2004 See Chapter 6 for more detail on beta estimation

Table 7-5

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2004

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 39%	6 16%	6 53%	−0 37%
2	1 04	13 24%	8 02%	7 42%	0 60%
3	1 10	13 84%	8 62%	7 86%	0 75%
4	1 13	14 38%	9 15%	8 08%	1 07%
5	1.16	14.96%	9.74%	8.30%	1.44%
6	1 18	15 46%	10 23%	8 48%	1 75%
7	1 23	15 67%	10 45%	8 83%	1 61%
8	1 28	16 74%	11 51%	9 15%	2 36%
9	1 34	17 71%	12 48%	9 62%	2 86%
10-Smallest	1 41	21 77%	16 54%	10 14%	6 41%
Mid-Cap 3-5	1 12	14 19%	8 96%	8 01%	0 95%
Low-Cap, 6-8	1 22	15 76%	10 54%	8 73%	1 81%
Micro-Cap 9-10	1 36	18 97%	13 74%	9 72%	4 02%

*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 2004

**Historical riskless rate is measured by the 79-year arithmetic mean income return component of 20-year government bonds (5 22 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 39 percent) minus the arithmetic mean income return component of 20-year government bonds (5 22 percent) from 1926–2004

Graph 7-2

Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
1926–2004

Source: Center for Research in Security Prices University of Chicago (decile data)

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, 2004

Decile	Recent Number of Companies	Recent Decile Market Capitalization (in thousands)	Market Capitalization of Largest Company (in thousands)	Company Name
10a	532	$98 581,341	$262 725	Mastec Inc
10b	1 261	$83 633 980	$143 916	Rex Stores Corp

Note: These numbers may not aggregate to equal decile 10 figures
Source: Center for Research in Security Prices, University of Chicago

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Table 7-7

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the
NYSE/AMEX/NASDAQ, with 10th Decile Split
1926-2004

	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 39%	6 16%	6 53%	-0 37%
2	1 04	13 24%	8 02%	7 42%	0 60%
3	1 10	13 84%	8 62%	7 86%	0 75%
4	1 13	14 38%	9 15%	8 08%	1 07%
5	1 16	14 96%	9 74%	8 30%	1 44%
6	1 18	15 46%	10 23%	8 48%	1 75%
7	1 23	15 67%	10 45%	8 83%	1 61%
8	1 28	16 74%	11 51%	9 15%	2 36%
9	1 34	17 71%	12 48%	9 62%	2 86%
10a	1 42	19 95%	14 73%	10 19%	4 54%
10b - Smallest	1 39	25 13%	19 90%	10 00%	9 90%
Mid-Cap. 3-5	1 12	14 19%	8 96%	8 01%	0 95%
Low-Cap, 6-8	1 22	15 76%	10 54%	8 73%	1 81%
Micro-Cap, 9-10	1 36	18 97%	13 74%	9 72%	4 02%

*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 2004

**Historical riskless rate is measured by the 79-year arithmetic mean income return component of 20-year government bonds (5 22 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 39 percent) minus the arithmetic mean income return component of 20-year government bonds (5 22 percent) from 1926-2004

Graph 7-3
Security Market Line versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ, with 10th Decile Split
1926-2004
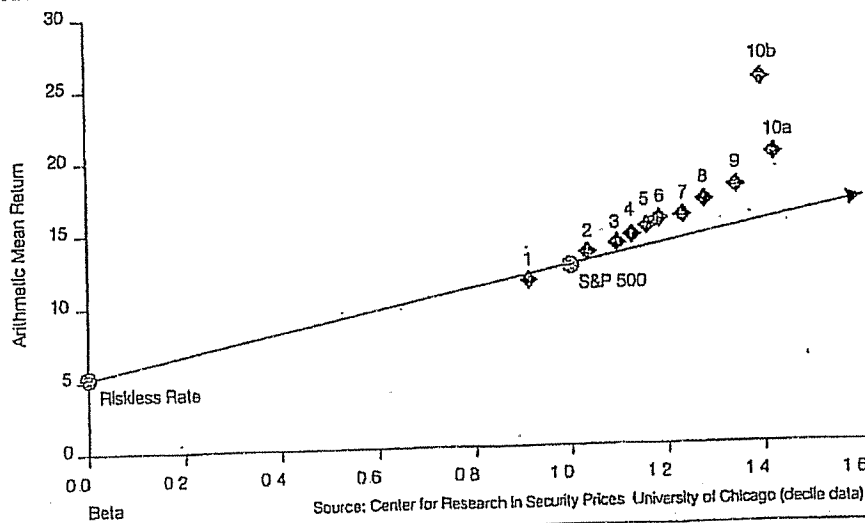
Source: Center for Research in Security Prices University of Chicago (decile data)

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	109
1970	865
1980	685
1990	1,814
2000	1,927
2004	1,782

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

Source: Center for Research in Security Prices University of Chicago

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, 1926–2004, 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 6.40, as opposed to 7.17 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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Dear Reader,

This volume updates the 1994 edition of *Corporate Finance Criteria*. There are several new chapters, covering our recently introduced Bank Loan Ratings, criteria for "notching" junior obligations, and the role of cyclicality in ratings. Naturally, the ratio medians have been brought up to date.

Standard & Poor's criteria publications represent our endeavor to convey the thought processes and methodologies employed in determining Standard & Poor's ratings. They describe both the quantitative and qualitative aspects of the analysis. We believe that our rating product has the most value if users appreciate all that has gone into producing the letter symbols.

Bear in mind, though, that a rating is, in the end, an opinion. The rating experience is as much an art as it is a science.

Solomon B. Samson
Chairman, Corporate Ratings Criteria Committee

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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.

Utilities credit analysis factors

Business risk
- Markets and service area economy
- Competitive position
- Operations
- Regulation
- Management
- Fuel, power, and water supply
- Asset concentration

Financial risk
- Earnings protection
- Capital structure
- Cash flow adequacy
- Financial flexibility/capital attraction

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 unemploy-

ment—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-

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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 bal-

ance 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 auger 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-

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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 experi-

ence. 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 effect 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

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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 rate-payers, 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.

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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

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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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Feature Article

New Business Profile Scores Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised

Standard & Poor's Ratings Services has assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. Standard & Poor's also has revised its published risk-adjusted financial guidelines. The new business scores and financial guidelines do not represent a change to Standard & Poor's ratings criteria or methodology. and no ratings changes are anticipated from the new business profile scores or revised financial guidelines

New Business Profile Scores and Revised Financial Guidelines
Standard & Poor's has always monitored changes in the industry and altered its business risk assessments accordingly. This is the first time since the 10-point business pro-

file scale for U.S. investor-owned utilities was implemented that a comprehensive assessment of the benefits and the application of the methodology has been made. The principal purpose was to determine if the methodology continues to provide meaningful differentiation of business risk. The review indicated that while business profile scoring continues to provide analytical benefits, the complete range of the 10-point scale was not being utilized to the fullest extent

Standard & Poor's has also revised the key financial guidelines that it uses as an integral part of evaluating the credit quality of U.S. utility and power companies. These guidelines were last updated in June 1999. The financial guidelines for three principal ratios (funds from operations (FFO) interest coverage, FFO to total debt, and total debt to total capital) have been broadened so as to be more flexible. Pretax interest cov-

Chart 1
Distribution of Business Profile Scores

Chart 2
Transmission and Distribution—Water, Gas, and Electric

Feature Article

erage as a key credit ratio was eliminated

Finally, Standard & Poor's has segmented the utility and power industry into sub-sectors based on the dominant corporate strategy that a company is pursuing Standard & Poor's has published a new U S utility and power company ranking list that reflects these sub-sectors

There are numerous benefits to the reassessment Fuller utilization of the entire 10-point scale provides a superior relative ranking of qualitative business risk A revision of the financial guidelines supports the goal of not causing rating changes from the recalibration of the business profiles Classification of companies by sub-sectors will ensure greater comparability and consistency in ratings The use of industry segmentation will also allow more in-depth statistical analysis of ratings distributions and rating changes.

The reassessment does not represent a change to Standard & Poor's criteria or methodology for determining ratings for utility and power companies. Each business profile score should be considered as the assignment of a new score; these scores do not represent improvement or deteri-

oration in our assessment of an individual company's business risk relative to the previously assigned score The financial guidelines continue to be risk-adjusted based on historical utility and industrial medians Segmentation into industry sub-sectors does not imply that specific company characteristics will not weigh heavily into the assignment of a company's business profile score

Results

Previously. 83% of U S utility and power business profile scores fell between `3` and `6`, which clearly does not reflect the risk differentiation that exists in the utility and power industry today. Since the 10-point scale was introduced the industry has transformed into a much less homogenous industry. where the divergence of business risk—particularly regarding management strategy, and degree of competitive market exposure—has created a much wider spectrum of risk profiles Yet over the same period business profile scores actually converged more tightly around a median score of `4` The new business pro-

Chart 3
Transmission Only—Electric, Gas, and Other

% of companies

Business Profile Score

Chart 4
Integrated Electric, Gas, and Combination Utilities

% of companies

Business Profile Score

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file scores as of June 2 are shown in Chart 1 The overall median business profile score is now 5

Table 1 contains the revised financial guidelines. It is important to emphasize that these metrics are only guidelines associated with expectations for various rating levels Although credit ratio analysis is an important part of the ratings process these three statistics are by no means the only critical financial measures that Standard & Poor's uses in its analytical process We also analyze a wide array of financial ratios that do not have published guidelines for each rating category.

Again ratings analysis is not driven solely by these financial ratios, nor has it ever been In fact the new financial guidelines that Standard & Poor's is incorporating for the specified rating categories reinforce the analytical framework whereby other factors can outweigh the achievement of otherwise acceptable financial ratios These factors include:

- Effectiveness of liability and liquidity management;
- Analysis of internal funding sources;
- Return on invested capital;
- The execution record of stated business strategies;
- Accuracy of projected performance versus actual results. as well as the trend;
- Assessment of management's financial policies and attitude toward credit; and
- Corporate governance practices

Charts 2 through 6 show business profile scores broken out by industry sub-sector. The five industry sub-sectors are:

- Transmission and distribution—Water, gas, and electric;
- Transmission only—Electric gas and other;
- Integrated electric gas and combination utilities;
- Diversified energy and diversified nonenergy; and
- Energy merchant/power developer/trading and marketing companies

The average business profile scores for transmission and distribution companies and transmission-only companies are lower on the scale than the previous averages. while the average business profile scores for integrated utilities. diversified energy. and energy merchants and developers are higher.

Chart 5
Diversified Energy and Diversified Non-Energy

Chart 6
Energy Merchant/Developers/Trading and Marketing

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See pages 16 to 19 for the company ranking list of business profile scores segmented by industry sub-sector and ranked in order of credit rating outlook business profile score. and relative strength

Business Profile Score Methodology

Standard & Poor's methodology of determining corporate utility business risk is anchored in the assessment of certain specific characteristics that define the sector We assign business profile scores to each of the rated companies in the utility and power sector on a 10-point scale where '1' represents the lowest risk and '10' the highest risk. Business profile scores are assigned to all rated utility and power companies. whether they are holding companies subsidiaries or stand-alone corporations For operating subsidiaries and stand-alone companies the score is a bottom up assessment Scores for families of companies are a composite of the operating subsidiaries' scores The actual credit rating of a company is analyzed in part by comparing the business profile score with the risk-adjusted financial guidelines

For most companies business profile scores are assessed using five categories; specifically regulation markets, operations competitiveness and management The emphasis placed on each category may be influenced by the

Table 1

Revised Financial Guidelines

Funds from operations/interest coverage (x)

Business Profile	AA		A		BBB		BB	
1	3	25	25	1.5	15	1		
2	4	3	3	2	2	1		
3	4.5	35	35	25	25	15	15	1
4	5	42	42	35	35	25	25	1.5
5	55	45	45	38	38	28	28	18
6	6	52	52	42	42	3	3	2
7	8	65	65	45	45	32	32	22
8	10	75	75	55	55	35	35	25
9			10	7	7	4	4	28
10			11	8	8	5	5	3

Funds from operation/total debt (%)

Business Profile	AA		A		BBB		BB	
1	20	15	15	10	10	5		
2	25	20	20	12	12	8		
3	30	25	25	15	15	10	10	5
4	35	28	28	20	20	12	12	8
5	40	30	30	22	22	15	15	10
6	45	35	35	28	28	18	18	12
7	55	45	45	30	30	20	20	15
8	70	55	55	40	40	25	25	15
9			65	45	45	30	30	20
10			70	55	55	40	40	25

Total debt/total capital (%)

Business Profile	AA		A		BBB		BB	
1	48	55	55	60	60	70		
2	45	52	52	58	58	68		
3	42	50	50	55	55	65	65	70
4	38	45	45	52	52	62	62	68
5	35	42	42	50	50	60	60	65
6	32	40	40	48	48	58	58	62
7	30	38	38	45	45	55	55	60
8	25	35	35	42	42	52	52	58
9			32	40	40	50	50	55
10			25	35	35	48	48	52

Feature Article

dominant strategy of the company or other factors. For example, for a regulated transmission and distribution company, regulation may account for 30% to 40% of the business profile score because regulation can be the single-most important credit driver for this type of company. Conversely competition, which may not exist for a transmission and distribution company, would provide a much lower proportion (e.g. 5% to 15%) of the business profile score.

For certain types of companies such as power generators, power developers, oil and gas exploration and production companies, or nonenergy-related holdings where these five components may not be appropriate, Standard & Poor's will use other, more appropriate methodologies. Some of these companies are assigned business profile scores that are useful only for relative ranking purposes.

As noted above the business profile score for a parent or holding company is a composite of the business profile scores of its individual subsidiary companies. Again Standard & Poor's does not apply rigid guidelines for deter-

mining the proportion or weighting that each subsidiary represents in the overall business profile score. Instead, it is determined based on a number of factors. Standard & Poor's will analyze each subsidiary's contribution to FFO, forecast capital expenditures, liquidity requirements and other parameters, including the extent to which one subsidiary has higher growth. The weighting is determined case-by-case ■

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PROXY GROUP OF FIVE AUS UTILITY REPORTS WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003 INCLUSIVE

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$528.323	$455.611	$417.035	$366.281	$319.069	
SHORT-TERM DEBT	$35.980	$38.620	$34.154	$30.893	$29.459	
TOTAL CAPITAL EMPLOYED	$564.304	$494.232	$451.189	$397.174	$348.529	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.25 %	6.53 %	7.15 %	7.75 %	8.02 %	
PREFERRED STOCK	2.83	5.60	5.07	4.94	5.09	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.07 %	54.58 %	54.38 %	52.03 %	51.02 %	53.22 %
PREFERRED STOCK	0.15	0.20	0.41	0.54	0.66	0.39
COMMON EQUITY	45.78	45.22	45.21	47.43	48.32	46.39
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.33 %	57.27 %	57.74 %	55.03 %	54.32 %	56.34 %
PREFERRED STOCK	0.14	0.19	0.38	0.51	0.61	0.36
COMMON EQUITY	42.53	42.54	41.88	44.46	45.08	43.30
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.01 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.95 %	5.02 %	5.11 %	5.71 %	5.29 %	5.02 %
MARKET / AVERAGE BOOK RATIO	229.43	219.11	210.88	187.65	201.65	209.74
DIVIDEND YIELD	3.27	3.60	3.83	4.28	4.04	3.80
DIVIDEND PAYOUT RATIO	84.06	72.47	76.46	75.58	75.18	76.75
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	9.13 %	10.67 %	10.55 %	10.67 %	10.78 %	10.36 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.40 x	3.36 x	3.24 x	3.12 x	3.24 x	3.27 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	14.12 %	14.46 %	14.46 %	15.22 %	16.46 %	14.94 %
TOTAL DEBT / TOTAL CAPITAL	57.33 %	57.27 %	57.74 %	55.03 %	54.32 %	56.34 %

See Page 2 for notes.

Proxy Group of Five AUS Utility Reports Water Companies
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term 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 C. A. Turner Public Utility Reports (March 2005); 2) which have Value Line (Standard Edition) five-year EPS growth rate projections or Thomson FN / First Call consensus five-year EPS growth rate projections; and 3) which have more than 70% of their 2003 operating revenues derived from water operations.

The following six water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
Artesian Resources, Inc.
California Water Service Group
York Water Co

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

PROXY GROUP OF THREE VALUE LINE (STANDARD EDITION) WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$812.157	$697.461	$643.704	$560.379	$467.732	
SHORT-TERM DEBT	$52.971	$62.164	$50.556	$49.531	$45.889	
TOTAL CAPITAL EMPLOYED	$865.128	$759.625	$694.260	$609.910	$533.621	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	6.04 %	6.66 %	7.44 %	8.00 %	
PREFERRED STOCK	2.83	3.84	4.03	3.76	3.90	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.78 %	56.84 %	54.95 %	49.65 %	50.50 %	53.34 %
PREFERRED STOCK	0.24	0.28	0.47	0.63	0.72	0.47
COMMON EQUITY	44.98	42.88	44.58	49.72	48.78	46.19
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %
PREFERRED STOCK	0.24	0.25	0.44	0.59	0.68	0.44
COMMON EQUITY	42.45	39.57	41.75	45.88	45.39	43.01
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.89 %	5.17 %	4.70 %	5.47 %	5.00 %	4.85 %
MARKET / AVERAGE BOOK RATIO	225.26	217.33	225.22	206.93	221.95	219.34
DIVIDEND YIELD	3.32	3.63	3.61	3.77	3.65	3.60
DIVIDEND PAYOUT RATIO	86.86	69.87	78.54	69.17	71.36	75.16
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.86 %	11.10 %	10.40 %	11.37 %	11.28 %	10.60 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.53 x	3.63 x	3.57 x	3.40 x	3.57 x	3.54 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	14.60 %	14.73 %	15.23 %	16.70 %	16.17 %	15.89 %
TOTAL DEBT / TOTAL CAPITAL	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %

See Page 2 for notes.

Proxy Group of Three Value Line (Standard Edition) Water Companies
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term 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 Value Line (Standard Edition).

The following three water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
California Water Service Group

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

MIDDLESEX WATER COMPANY
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

(MILLIONS OF DOLLARS)

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$182.150	$168.687	$164.852	$157.024	$157.084	
SHORT-TERM DEBT	$12.500	$17.650	$13.225	$6.050	$2.000	
TOTAL CAPITAL EMPLOYED	$194.650	$186.337	$178.077	$163.074	$159.084	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	4.82 %	4.96 %	5.30 %	5.78 %	5.74 %	
PREFERRED STOCK	6.28	6.25	6.28	6.28	6.65	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.05 %	52.24 %	53.68 %	52.43 %	52.54 %	52.99 %
PREFERRED STOCK	2.23	2.41	2.47	2.59	2.59	2.46
COMMON EQUITY	43.72	45.35	43.85	44.98	44.87	44.55
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	56.99 %	56.76 %	57.13 %	54.19 %	53.14 %	55.64 %
PREFERRED STOCK	2.09	2.18	2.28	2.49	2.55	2.32
COMMON EQUITY	40.92	41.06	40.59	43.32	44.31	42.04
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.30 %	4.31 %	3.95 %	3.43 %	5.09 %	4.02 %
MARKET / AVERAGE BOOK RATIO	247.85	232.92	236.90	209.86	218.24	229.15
DIVIDEND YIELD	3.29	3.76	3.73	4.16	3.93	3.77
DIVIDEND PAYOUT RATIO	106.51	86.67	94.12	121.76	77.27	97.27
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	9.17 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.28 x	3.40 x	3.44 x	3.04 x	2.99 x	3.23 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	10.76 %	11.66 %	12.09 %	11.52 %	11.07 %	11.42 %
TOTAL DEBT / TOTAL CAPITAL	56.99 %	56.76 %	57.13 %	54.19 %	53.14 %	55.64 %

See page 2 for notes.

Middlesex Water Company
Capitalization and Financial Statistics
1999-2003, Inclusive

Notes:

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

(2) Computed by relating actual long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term 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.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Data Base
Company Annual Form 10K (if necessary)

Middlesex Water Company
Capitalization and Capital Structure Ratios
Based Upon Investor-Provided Capital
Actual at December 31, 2004 and Estimated and Pro Forma at June 30, 2005
Adjusted to Reflect the Elimination of Cumulative Convertible Preferred
Stock Issued to Acquire Tidewater Utilities, Inc. and Public Water Supply Co., Inc.

Capitalization	December 31, 2004 (Actual) Amount Outstanding	Ratios (%)	December 31, 2004 - Adjusted (Actual) Adjustments	Amount Outstanding	Ratios (%)	December 31, 2004 (Actual) Amount Outstanding	Ratios (%)	December 31, 2004 - Adjusted (Actual) Adjustments	Amount Outstanding	Ratios (%)
Long-Term Debt										
First Mortgage Bonds	$98,898,990		--	$98,898,990		$98,823,474		--	$98,023,474	
Total Long-Term Debt	98,898,990	49.92 %	--	98,898,990	50.68 %	98,823,474	49.24 %	0	98,823,474	49.97 %
Preferred Stock										
Middlesex Water Company	1,101,700		--	1,101,700		1,101,700		--	1,101,700	
$7.00 Series Issued to Acquire Tidewater Utilities, Inc.	1,562,505		(1,562,505) (1)	0		1,562,505		(1,562,505) (3)	0	
$8.00 Series Issued to Acquire Public Water Supply Co., Inc.	1,398,857		(1,398,857) (2)	0		1,398,857		(1,398,857) (4)	0	
Total Preferred Stock	4,063,062	2.05	(2,961,362)	1,101,700	0.56	4,063,062	2.02	(2,961,362)	1,101,700	0.56
Common Equity										
Common Equity	95,128,651			95,128,651		97,821,707 (3)			97,821,707	
Unamortized Balance of Early Redemption Premiums and Expenses and Original Issuance Expenses on Early Redemptions of Preferred Stock	11,999 (4)		--	11,999		10,528 (4)		--	10,528	
Total Common Equity	95,140,650	48.03	--	95,140,650	48.76	97,832,235	48.74	0	97,832,235	49.47
Total Capital Employed	$199,402,612	100.00 %	($2,961,362)	$195,141,250	100.00 %	$200,718,771	100.00 %	($2,961,362)	$197,757,409	100.00 %

See pages 2 and 3 for notes.

<u>Middlesex Water Company</u>
Capitalization and Capital Structure Ratios
Based Upon Investor-Provided Capital
Actual at December 31, 2004 and Estimated and Pro Forma at June 30, 2005,
Adjusted to Reflect the Cumulative Convertible Preferred Stock Issued
<u>to Acquire Tidewater Utilities, Inc. and Public Water Supply Co., Inc.</u>

Notes.

(1)   Reflects the elimination of $1,562,605 of the $7.00 Series cumulative convertible preferred stock issued to acquire Tidewater Utilities, Inc. actual at December 31, 2004 and estimated at June 30, 2005.

(2)   Reflects the elimination of $1,398,857 of the $8.00 Series cumulative convertible preferred stock issued to acquire Public Water Supply Co., Inc. actual at December 31, 2004 and estimated at June 30, 2005, respectively.

(3)   Reflects an increase to retained earnings and common equity of $2.693,055 attributable to DRIP, net income and the 5% common stock discount program.

(4)   Reflects the unamortized balance of $11,909, actual at December 31, 2004, and $10,528, estimated at June 30, 2005, of the aggregate early redemption premiums, expenses and unamortized original issuance expenses at redemption related to the early redemption of the $6.00 and $8.25 Series preferred stock redeemed on February 1, 1994 and the $7.00 Series preferred stock redeemed in November 1994.

As discussed fully in Ms. Ahern's direct testimony, the redemption of the preferred stock benefited Middlesex's ratepayers through a reduction in administrative burdens and costs, lowering the embedded cost of preferred stock and lowering the proportion of preferred stock in the capital structure. Because there was no refunding issue through whose cost rate these redemption costs could be recovered, the early redemption premiums, expenses were charged to retained earnings. In addition, no mechanism exists to recover the unamortized original issuance expenses at redemption. Also, retained earnings are lower than they would have been had the redemptions not occurred. Therefore, because no other mechanism exists with which to recover these redemption costs, it is necessary to restore the unamortized balances, actual at December 31, 2004 and June 30, 2005 of the early redemption premiums, expenses and unamortized original issuance expenses to retained earnings in order that the ratemaking capital structure ratios remain unchanged as a result of the early redemption of the cumulative preferred stock as explained in Ms. Ahern's accompanying direct testimony.

Capital Structure Based upon Total Permanent Capital for
the Proxy Group of Five AUS Utility Reports Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	59 16 %	59 60 %	61 01 %	47 65 %	51 04 %	55 69 %
Preferred Stock	0 00	0 00	0 36	0 52	0 60	0 30
Common Equity	40.84	40.40	38.63	51.84	48.36	44.01
Total Capital	100.00 %	100.00 %	100.00 %	100.01 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	52 76 %	55 58 %	52 87 %	52 85 %	53 59 %	53 53 %
Preferred Stock	0.07	0 06	0.19	0 50	0 55	0 27
Common Equity	47.17	44.36	46.94	46.65	45.86	46.20
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Artesian Resources Corp.						
Long-Term Debt	60 51 %	55 62 %	59 34 %	60 94 %	52 05 %	57 69 %
Preferred Stock	0 00	0 17	0.67	0 79	1 13	0 55
Common Equity	39.49	44.21	39.99	38.27	46.82	41.76
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	52 41 %	55 36 %	50 97 %	48 43 %	46 85 %	50 80 %
Preferred Stock	0.67	0.77	0 85	0 88	1 02	0 84
Common Equity	46.92	43.87	48.18	50.69	52.13	48.36
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	45 53 %	46 76 %	47 69 %	50 25 %	51 55 %	48.36 %
Preferred Stock	0.00	0 00	0 00	0 00	0 00	0 00
Common Equity	54.47	53.24	52.31	49.75	48.45	51.64
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Five AUS Utility Reports Water Companies						
Long-Term Debt	54 07	54 58 %	54 37 %	52 02 %	51 01 %	53 21 %
Preferred Stock	0 15	0 20	0.42	0 54	0 66	0 39
Common Equity	45.78	45.22	45.21	47.44	48.33	46.40
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
Company Annual Forms 10K (Sinking Fund Requirements)

Capital Structure Based upon Total Permanent Capital for
the Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	59 16 %	59 60 %	61 01 %	47 65 %	51 04 %	55.69 %
Preferred Stock	0 00	0 00	0 36	0 51	0 60	0 29
Common Equity	40.84	40.40	38.63	51.84	48.36	44.01
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	52 76 %	55 58 %	52 87 %	52 85 %	53 59 %	53 53 %
Preferred Stock	0 07	0 06	0 19	0 50	0 55	0 27
Common Equity	47.17	44.36	46.94	46.65	45.86	46.20
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	52 41 %	55.36 %	50 97 %	48.43 %	46 85 %	50.80 %
Preferred Stock	0 67	0 77	0 85	0 89	1 02	0 84
Common Equity	46.92	43.87	48.18	50.68	52.13	48.36
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
Long-Term Debt	54 78 %	56 85 %	54 95 %	49 64 %	50 49 %	53.34 %
Preferred Stock	0 24	0 27	0 47	0 64	0 72	0 47
Common Equity	44.98	42.88	44.58	49.72	48.79	46.19
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Middlesex Water Company
Calculation of the Composite Cost Rate of Long-Term Debt Outstanding
Actual for the Year Ended December 31. 2004 and
Estimated for the Year Ended June 30, 2005

Actual for the Year Ended December 31, 2004

Series	Amount Outstanding	Effective Cost Rate (1)	Annualized Cost	Composite Interest Rate
First Mortgage Bonds				
5 200% Series S * due 2002	$12.000.000	5 74 %	$688.800	
5 250% Series T * due 2023	6.500,000	5 55	360.750	
6 400% Series U due 2009	15.000.000	6 79	1.018.500	
5 250% Series V * due 2029	10.000.000	6 15	615.000	
5 350% Series W* due 2038	23.000,000	5 48	1,260,400	
0 00% Series X due 2018	755.007	0 00	0	
4 53% Series Y due 2018	920,000	5 13	47.196	
0 00% Series Z due 2019	1.679.980	0 00	0	
5 25% Series AA due 2019	2.085,000	6 04	125.934	
0 00% Series BB due 2021	2.048.094	0 00	0	
4 00%Series CC due 2021	2.275,000	5 24	119.210	
5 10% Series DD due 2032	6,000.000	5 86	351.600	
0.00%Series EE due 2024	7.715,909	0 00	0	
3 00% Series FF due 2024	8,920,000	5 02	447,784	
Total Long-Term Debt	$98,898,990		$5,035,174	5.09 %

Estimated for the Year Ended June 30, 2005

Series	Amount Outstanding	Effective Cost Rate (1)	Annualized Cost	Composite Interest Rate
First Mortgage Bonds				
5.200% Series S * due 2002	$12,000.000	5 74 %	$688.800	
5 250% Series T * due 2023	6.500.000	5 55	360,750	
6 400% Series U due 2009	15.000.000	6 79	1.018.500	
5 250% Series V * due 2029	10.000,000	6 15	615,000	
5 350% Series W* due 2038	23.000.000	5 48	1.260.400	
0.00% Series X due 2018	742.578	0 00	0	
4 53% Series Y due 2018	920.000	5 13	47.196	
0 00% Series Z due 2019	1.650.588	0 00	0	
5 25% Series AA due 2019	2.085,000	6 04	125,934	
0 00% Series BB due 2021	2.014.399	0 00	0	
4 00%Series CC due 2021	2.275.000	5 24	119.210	
5 10% Series DD due 2032	6.000,000	5 86	351.600	
0 00%Series EE due 2024	7.715.909	0 00	0	
3 00% Series FF due 2024	8,920,000	5 02	447,784	
Total Long-Term Debt	$98,823,474		$5,035,174	5.10 %

Notes: (1) As developed on page 2 of this Schedule

* EDA financing

Source of Information: Company-provided data

Middlesex Water Company
Calculation of the Effective Cost Rate of Long-Term Debt by Series

Series	Nominal Date of Issue	Date of Maturity	Average Term In Years (1)	Principal Amount Issued	Total (Expense) Premium / (Discount) at Issuance	Net Proceeds	Net Proceeds Ratio	Effective Cost Ratio to Maturity (2)
First Mortgage Bonds								
5.200% Series S *	28-Sep-93	1-Oct-22	29.0	12,000,000	(903,838) (3)	11,096,162	92.47	5.74%
5.250% Series T *	28-Sep-93	1-Oct-23	30.0	6,500,000	(287,451)	6,212,549	95.58	5.55%
6.400% Series U	2-Feb-94	2-Feb-09	15.0	15,000,000	(547,406) (4)	14,452,594	96.35	6.79%
5.250% Series V *	1-Feb-94	1-Feb-29	35.0	10,000,000	(1,282,588) (5)	8,717,412	87.17	6.15%
5.350% Series W*	1-Mar-98	1-Feb-38	40.0	23,000,000	(490,096)	22,509,904	97.87	5.48%
0.00% Series X	1-Nov-98	1-Aug-18	-- (6)	1,025,000	(37,827)	987,173	96.31	0.00%
4.53% Series Y	1-Nov-98	1-Aug-18	-- (7)	1,135,000	(15,794)	1,119,206	98.61	5.13% (9)
0.00% Series Z	5-Nov-99	1-Sep-19	-- (6)	2,150,000	(10,033)	2,139,967	99.53	0.00%
5.25% Series AA	5-Nov-99	1-Sep-19	-- (7)	2,350,000	(47,968)	2,302,032	97.96	6.04% (9)
0.00% Series BB	8-Nov-01	1-Sep-21	-- (6)	2,350,000	(12,255)	2,337,745	99.48	0.00%
4.00% Series CC	8-Nov-01	1-Sep-21	-- (7)	2,440,000	(11,236)	2,428,764	99.54	5.24% (9)
5.10% Series DD	15-Jan-02	1-Jan-32	30.0	6,000,000	(647,906) (8)	5,352,094	89.20	5.86%
0.00% Series EE	1-Nov-04	1-Aug-24	20.0 (6)	7,715,909	(18,718)	7,697,191	99.76	0.00%
3.00% Series FF	1-Nov-04	1-Aug-24	20.0 (7)	8,920,000	(21,639)	8,898,361	99.76	5.02% (9)

* EDA financing

See pages 3 and 4 for notes.

Source of Information: Company-provided data

Middlesex Water Company
Calculation of the Effective Cost Rate of Long-Term Debt by Series

Notes:

(1) Determined by taking into account the effect of annual sinking fund requirements, if any, which are met by the retirement of bonds which reduce the average term of each series

(2) The effective cost rate for each issue is the cost rate to maturity using as inputs the average term of issue, coupon rate and net proceeds ratio.

(3) The Company redeemed $4.8 million of the 7.000% Series O EDA bonds on September 29, 1993, $2.5 million of the 10.500% Series P bonds on March 1, 1993 and $2.5 million of the 2.875% Series P-1 bonds on September 29, 1993. The Company paid redemption premiums of $95,000 relative to the Series O bonds and $75,000 relative to the Series P bonds. The unamortized balance of discount and expense and redemption expense of the 7.000% Series O EDA bonds on September 29, 1993 was $135,133, $51,421 for the 10.500% Series P bonds on March 1, 1993 and $69,954 for the 2.875% Series P-1 bonds on September 19, 1993. Based upon the total premium and issuance expenses of $477,330 directly associated with the 5.20% Series S bonds (the replacement issue), the redemption premium, total unamortized expenses, premium or (discount) related to the redemption of the 7.000% Series O EDA bonds, 10.500% Series P bonds and 2.875% Series P-1 bonds amounted to $903,838. ($903,838 = $95,000 + $75,000 + $135,133 + $51,421 + $69,954 + $477,330).

(4) The Company redeemed $4.8 million of the 4.750% Series I bonds on December 31, 1993, $2.5 million of the 4.750% Series J bonds on December 1, 1993, $2.5 million of the 6.750% Series K bonds on February 1, 1994, $2.0 million of the 6.875% Series L bonds on December 1, 1993 and $1.5 million of the 8.125% Series N bonds on December 1, 1993. The Company paid redemption premiums of $4,250 relative to the Series J bonds, $6,250 relative to the Series K bonds, $19,000 relative to the Series L bonds and $33,750 relative to the Series N bonds. The unamortized balance of discount and expense of the 4.750% Series I bonds on December 31, 1993 was $767, for the 4.750% Series J bonds, $1,351 on December 1, 1993, $2,295 for the 6.750% Series K bonds on February 1, 1994, $5,083 for the 6.875% Series L bonds on December 1, 1993 and $8,480 for the 8.125% Series N bonds on December 1, 1993. Based upon the total premium and issuance expenses of $466,180 directly associated with the 6.400% Series U bonds (the replacement issue), the total expenses, premium or

Middlesex Water Company
Calculation of the Effective Cost Rate of Long-Term Debt by Series

(discount) related to the redemption of the 4.750% Series I bonds, 4.750% Series J bonds, 6.750% Series K bonds, 6.875% Series L bonds and 8.125% Series N bonds amounted to $547,406 ($547,406 = $4,250 + $ 6,250 + $19,000 + $33,750 + $767 + $1,351 + $2,295 + $5,083 + $8,480 + $466,180).

(5) The Company redeemed $10.0 million of the 8.000% Series Q EDA bonds on February 1, 1994. The Company a paid redemption premium of $300,000 relative to the Series Q EDA bonds. The unamortized balance of discount and expense and redemption expense of the 8.000% Series Q EDA bonds on February 1, 1994 was $604,808. Based upon the total premium and issuance expenses of $377,780 directly associated with the 5.250% Series V bonds (the replacement issue), the total expenses, premium or (discount) related to the redemption of the 8.000% Series Q EDA amounted to $1,282,588. ($1,282,588 = $300,000 + $604,808 + $377,780)

(6) Average term not calculated since the sinking fund payments are made semi-annually.

(7) Average term not calculated since the effective cost rate to maturity is calculated based upon cash flows throughout the life of the series.

(8) The Company redeemed $6.0 million of the 7.25% Series R EDA bonds on November 8, 2001. The Company paid a redemption premium of $120,000 relative to the Series R EDA bonds. The unamortized balance of discount and expense of the 7.25% Series R EDA bonds was $137,598 on November 8, 2001 Based upon the total premium and issuance expenses of $390,308 directly associated with the 5.10% Series DD bonds (the replacement issue), the total expenses, premium or (discount) related to the redemption of the 7.25% Series R EDA bonds amounted to $647,906 ($647,906 = $120,000 + $137,598 + $390,308)

(9) Calculated based upon cash flows throughout the life of the series

Middlesex Water Company
Calculation of the Composite Cost Rate of Preferred Stock Outstanding
Actual for the Year Ended December 31, 2003 and
Estimated for the Year Ended December 31, 2004

Actual for the Year Ended December 31, 2003

Series	Amount Outstanding	Effective Cost Rate (1)	Annualized Cost	Composite Interest Rate
Cumulative Preferred Stock				
$7.00 Series	$101,700	7 00 %	$7,119	
$4 75 Series	1,000,000	4 85	48,500	
Total Preferred Stock	1,101,700		55,619	5 05 %
Annual Amortization of Early Redemption Premium and Redemption Expenses				
$6 00 Series	--		624 (2)	
$8.25 Series	--		1128 (3)	
$7.00 Series	--		1008 (4)	
Total Annual Amortization of Early Redemption Premium and Redemption Expenses	--		2,760	
Total Preferred Stock	$1,101,700		$58,379	5.30 %

Estimated for the Year Ended December 31, 2004

Series	Amount Outstanding	Effective Cost Rate (1)	Annualized Cost	Composite Interest Rate
Cumulative Preferred Stock				
$7 00 Series	$101,700	7 00 %	$7,119	
$4 75 Series	1,000,000	4 85	48,500	
Total Preferred Stock	1,101,700		55,619	5 05 %
Annual Amortization of Early Redemption Premium and Redemption Expenses				
$6 00 Series	--		624 (2)	
$8 25 Series	--		1128 (3)	
$7 00 Series	--		1008 (4)	
Total Annual Amortization of Early Redemption Premium and Redemption Expenses	--		2,760	
Total Preferred Stock	$1,101,700		$58,379	5.30 %

See page 2 for notes

Source of Information: Company-provided data

Middlesex Water Company
Calculation of the Composite Cost Rate of
Cumulative Preferred Stock

Notes:

(1)   As developed on page 3 of this Schedule.

(2)   The Company redeemed 7,800 shares, at $101, of the $6.00 Series preferred stock on February 1, 1994 and paid an early redemption premium of $7,800. Unamortized original issuance expenses at February 1, 1994 were $8,407. Both the early redemption premium and the unamortized original issuance expenses are being amortized over the remaining life (309 months) of the Series which would have been fully retired through sinking fund payments by November 1, 2019. The monthly amortizations are $25 ($7,800 / 309) and $27 ($8,407 / 309). The aggregate annual amortization incurred during the twelve months ended December 31, 2003 and expected to be incurred during the twelve months ended December 31, 2004 is $624. ($624 = ($25 * 12) + ($27 * 12)

(3)   The Company redeemed 4,440 shares, at $101, of the $8.25 Series preferred stock on February 1, 1994 and paid an early redemption premium of $4,440. Unamortized original issuance expenses at February 1, 1994 were $8,439. Both the early redemption premium and the unamortized original issuance expenses are being amortized over the remaining life (137 months) of the Series which would have been fully retired through sinking fund payments by July 1, 2005. The monthly amortizations are $32 ($4,440 / 137) and $62 ($8,439 / 137). The aggregate annual amortization incurred during the twelve months ended December 31, 2003 and expected to be incurred during the twelve months ended December 31, 2004 is $1,128. ($1,128 = ($32 * 12) + ($62 * 12).

(4)   The Company redeemed 245 shares, at par, of the $7.00 Series preferred stock in November, 1994 and paid redemption expenses of $12,240. Unamortized original issuance expenses at November 1, 1994 were de minimus. The early redemption expenses are being amortized over an assumed remaining life (146 months) of the Series based upon the midpoint 43.5 years, rounded to 44 years, of the lives of the $6.00 and $8.25 Series, 53 and 34 years, respectively. The monthly amortization is $84 ($12,240 / 146). The annual amortization incurred during the twelve months ended December 31, 2003 and expected to be incurred during the twelve months ended December 31, 2004 is $1,008. ($1,008 = ($84 * 12).

Middlesex Water Company
Calculation of the Effective Cost Rate of Preferred Stock by Series

Non-Redeemable Preferred Stock	Nominal Date of Issue	Date of Maturity	Average Term in Years (1)	Principal Amount Issued	Total (Expense) Premium / (Discount) at Issuance	Net Proceeds	Net Proceeds Ratio	Effective Cost Rate to Maturity (2)
$7.00 Series	1963	Permanent	- -	$250,000	($25)	$249,975	99.99 %	7.00 % (3)
$4.75 Series	1962	Permanent	- -	1,000,000	(19,882)	980,118	98.01	4.85 (3)

Notes:

(1) Determined by taking into account the effect of annual purchase requirements of shares, if any, through redemption of each series.

(2) The effective cost rate for each issue is the cost rate to maturity using as inputs the average term of issue, coupon rate and net proceeds ratio.

(3) Effective cost rate calculated by dividing the nominal dividend rate by the net proceeds ratio.

Source of Information: Company-provided data

Middlesex 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	$	24 000	$	13 33	$	30 00
2	DCF Cost Rate (1)		10.50%		10 50%		10 50%
3.	Return in Dollars	$	2 520	$	1 400	$	3 150
4.	Dividends (2)	$	0 840	$	0 840	$	0.840
5	Growth in Dollars	$	1 680	$	0 560	$	2 310
6	Return on Market Value		10 50%		5 83% (3)		13 13% (4)
7	Rate of Growth on Market Value		7 00% (5)		2.33% (6)		9 63% (7)

Notes: (1) Comprised of 3 5% dividend yield and 7.0% growth.

(2) $24.00 * 3 5% yield = $0.840

(3) $1 400 / $24.00 market value = 5.83%.

(4) $3 150 / $24.00 market value = 13 13%

(5) Expected rate of growth per market based DCF model

(6) Actual rate of growth when DCF cost rate is applied to book value ($1 400 possible earnings – $0 840 dividends = $0 560 for growth / $24 00 market value = 2 33%)

(7) Actual rate of growth when DCF cost rate is applied to book value ($3 150 possible earnings – $0 840 dividends = $2 310 for growth / $24 00 market value = 9.63%)

Middlesex Water Company
Indicated Common Equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Five AUS Utility Reports Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies
Middlesex Water Company

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 Five AUS Utility Reports Water Companies					
American States Water Co	3.5 %	0.1 %	3.6 %	4.7 %	8.3 %
Aqua America, Inc	2.1	0.1	2.2	10.0	12.2
Artesian Resources Corp	3.2	0.1	3.3	0.4	0.7
California Water Services Group	3.4	0.1	3.6	5.3	8.8
York Water Company	3.3	0.1	3.4	4.7	8.1
Average	3.1 %	0.1 %	3.2 %	8.2 %	10.2 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co	3.5 %	0.1 %	3.6 %	4.7 %	8.3 %
Aqua America, Inc.	2.1	0.1	2.2	10.0	12.2
California Water Services Group	3.4	0.1	3.5	5.3	8.8
Average	3.0 %	0.1 %	3.1 %	6.7 %	10.5 % (6)
Middlesex Water Company	3.7 %	0.1 %	3.8 %	3.1 %	0.0 %

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 Five AUS Utility Reports Water Companies					
American States Water Co	3.5 %	0.1 %	3.6 %	6.3 %	9.9 %
Aqua America, Inc.	2.1	0.1	2.2	9.4	11.6
Artesian Resources Corp.	3.2	0.1	3.3	9.0	12.3
California Water Services Group	3.4	0.1	3.6	9.3	11.9
York Water Company	3.3	0.1	3.4	7.0	10.4
Average	3.1 %	0.1 %	3.2 %	9.0 %	11.2 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co	3.5 %	0.1 %	3.6 %	6.3 %	9.9 %
Aqua America, Inc.	2.1	0.1	2.2	9.4	11.6
California Water Services Group	3.4	0.1	3.6	8.0	11.1 (6)
Average	3.0 %	0.1 %	3.1 %	8.0 %	11.1 % (6)
Middlesex Water Company	3.7 %	0.1 %	3.8 %	8.0 %	0.0 %

Conclusion					
Proxy Group of Five AUS Utility Reports Water Companies					10.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					10.8 %
Middlesex Water Company					0.0 % (6)

Notes: (1) From Schedule PMA-11

(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Schedule PMA-13) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus for American States Water Co 3.5% x (1/2 x 4.7%) = 0.1%

(3) Column 1 + Column 2

(4) From page 1 Schedule PMA-12

(5) Column 3 + Column 4

(6) Includes only those indicated common equity cost rates which are greater than 0.0%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 0.0% (from page 1 of Schedule PMA-14)

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

	Dividend Yield		
	Spot (3/28/05) (1)	Average of Last 3 Months (2)	Average Dividend Yield (3)
Proxy Group of Five AUS Utility Reports Water Companies			
American States Water Co	3 5 %	3 4 %	3 5 %
Aqua America, Inc	2 1	2 1	2 1
Artesian Resources Corp	3 3	3 0	3.2
California Water Services Group	3.4	3.3	3.4
York Water Company	3.3	3.3	3.3
Average	3.1 %	3.0 %	3.1 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co	3.5	3.4 %	3 5 %
Aqua America, Inc	2 1	2 1	2 1
California Water Services Group	3.4	3.3	3.4
Average	3.0 %	2.9 %	3.0 %
Middlesex Water Company	3.7 %	3.6 %	3.7 %

Notes: (1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 3/28/05

(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 February 28, 2005

(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: Standard & Poor's Compustat Services, Inc , PC Plus Research Insight Database finance yahoo.com

Middlesex Water Company
Current Institutional Holdings (1) and Individual Holdings (2) for
the Proxy Group of Five AUS Utility Reports Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and
Middlesex Water Company

	1	2
	March 2005 Percentage of Institutional Holdings (1)	March 2005 Percentage of Individual Holdings (2)
Proxy Group of Five AUS Utility Reports Water Companies		
American States Water Co	35 9 %	64 1 %
Aqua America	29 0	71 0
Artesian Resources Corp	10 4	89 6
California Water Service Group	24 3	75 7
York Water Company	6.3	93.7
Average	21.2 %	78.8 %
Proxy Group of Three Value Line (Standard Edition) Water Companies		
American States Water Co.	35 9 %	64 1 %
Aqua America	29 0	71 0
California Water Service Group	24.3	75.7
Average	29.7 %	70.3 %
Middlesex Water Company	17.1 %	82.9 %

Notes:　(1)　The percentage of institutional holdings is calculated by dividing the number of shares held by institutions by the number of shares outstanding

(2)　(1 - column 1)

Source of Information:　yahoo investor reuters com, Updated March 29, 2005

Midwest 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 2001-03 to 2007-09 Growth Rate (1)		Thomson FN / First Call 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			Average of all Growth Rates	Average of Adjusted and Average of all Growth Rates (5)
	DPS	EPS		DPS	EPS	EPS	No. of Est.			Low	High	Midpoint		

Proxy Group of Five AUS Utility Reports Water Companies

	DPS	EPS	BR+SV	DPS	EPS	EPS	Est.	Proj	BR+SV	Low	High	Mid	Avg	Avg
American States Water Co.	1.0 %	1.5 %	4.4 %	1.5 %	0.5 %	3.0 %	(1)	6.3 %	7.1 %	1.0 %	9.5 %	5.3 %	4.0 %	4.7 %
Aqua America, Inc.	0.0	0.5	15.8	7.0	9.0	9.0	(4)	9.4	7.1	0.0	15.0	10.0	9.1	10.0
Artesian Resources Corp.	4.4 (6)	5.7 (5)	5.4	NA	NA	9.0	(3)	9.0	NA	4.4 (6)	0.0	0.7	0.1	0.4
California Water Service Group	1.0	(0.5)	4.0	1.0	10.0	0.5	(3)	0.3	7.2	1.0 (6)	10.0	5.5	5.1 (6)	5.3
York Water Company	2.9 (5)	4.2 (5)	2.2	NA	NA	7.0	(1)	7.0	NA	2.0	7.0	5.0	4.3	4.7
Average	**2.1 %**	**3.0 % (6)**	**6.7 %**	**3.2 %**	**9.5 %**	**7.1 %**		**6.0 %**	**7.1 %**	**3.1 %**	**10.2 %**	**6.7 %**	**5.7 %**	**6.2 %**

Proxy Group of Three Value Line (Standard Edition) Water Companies

	DPS	EPS	BR+SV	DPS	EPS	EPS	Est.	Proj	BR+SV	Low	High	Mid	Avg	Avg
American States Water Co.	1.0 %	1.5 %	4.4 %	1.5 %	0.5 %	3.0 %	(1)	6.3 %	7.1 %	1.0 %	9.5 %	5.3 %	4.0 %	4.7 %
Aqua America, Inc.	0.0	0.5	15.8	7.0	9.0	9.0	(4)	9.4	7.1	0.0	15.0	10.0	9.1	10.0
California Water Service Group	1.0	(0.5)	4.0	1.0	10.0	0.5		8.2	7.2	1.0 (6)	10.0 (6)	5.5	5.1 (6)	5.3
Average	**2.7 %**	**5.5 % (6)**	**0.3 %**	**3.2 %**	**9.5 %**	**0.4 %**		**6.0 %**	**7.1 %**	**2.7 %**	**11.7 %**	**7.2 %**	**6.1 %**	**6.7 %**

	DPS	EPS	BR+SV	DPS	EPS	EPS	Est.	Proj	BR+SV	Low	High	Mid	Avg	Avg
Midwest Water Company	2.5 %	0.5 %	2.1 %	NA	NA	6.0 %	(1)	0.0 %	NA	0.5 %	0.0 %	1.1 %	2.0 %	2.1 %

Notes:

(1) As shown on pages 0 through 12 of this Schedule. Historical growth rates are five-year compound growth rates.
(2) From page 2 of this Schedule.
(3) Average of Column 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 2003.
(6) Average of Column 1, 2, 3, 4, 5, 6, and 8.
(7) From Column 7.
(8) Excludes negatives.
(9) Average of Column 11 and Column 12.

Source of Information: Value Line Investment Survey, January 28, 2005
Thomson FN/ First Call Earnings, ee.thomsonfn.com, updated March 28, 2005

AMER. STATES WATER NYSE-AWR

| RECENT PRICE | 25.58 | P/E RATIO | 18.9 (Trailing: 27.5 / Median: 16.0) | RELATIVE P/E RATIO | 1.01 | DIV'D YLD | 3.5% | VALUE LINE |

TIMELINESS 4 Raised 11/7/03
SAFETY 3 New 2/1/00
TECHNICAL 2 Raised 12/24/04
BETA .70 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+15%)	7%
Low	20	(-20%)	-2%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	0	0	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

	1Q2004	2Q2004	3Q2004
to Buy	47	45	52
to Sell	33	35	25
Hld's(000)	6623	5504	5930

% TOT. RETURN 12/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	7.9	17.2
3 yr.	23.2	43.9
5 yr.	28.7	76.6

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	©VALUE LINE PUB., INC.	07-09
8.58	9.12	9.50	9.15	10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.75	14.80	Revenues per sh	15.80
1.13	1.44	1.49	1.78	1.01	1.67	1.68	1.75	1.75	1.05	2.04	2.25	2.20	2.53	2.54	2.08	2.50	2.98	"Cash Flow" per sh	3.40
.65	.92	.94	1.19	1.15	1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.72	1.16	1.45	Earnings per sh A	2.00
.67	.69	.72	.73	.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.07	.88	.09	.90	Div'd Decl'd per sh B■	.96
2.39	2.46	2.53	2.77	2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	4.05	4.15	Cap'l Spending per sh	3.60
7.07	7.31	7.54	8.39	8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.62	12.74	13.22	14.05	13.97	14.65	15.35	Book Value per sh	17.50
9.35	9.39	9.43	9.91	9.96	11.71	11.77	11.77	13.53	13.44	13.44	13.44	15.12	15.12	15.16	15.21	16.75	17.25	Common Shs Outst'g C	19.00
9.35	9.39	9.43	8.8	10.6	13.4	12.6	11.6	12.6	14.5	15.5	17.1	15.9	16.7	10.3	31.9	21.0		Avg Ann'l P/E Ratio	17.0
14.2	9.7	10.2	.66	.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.85	1.09		Relative P/E Ratio	.85
1.18	.73	.76	7.0%	6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%	3.7%		Avg Ann'l Div'd Yield	3.8%
7.4%	7.7%	7.5%				122.7	129.8	151.5	153.0	148.1	173.4	184.0	197.6	209.2	212.7	230	255	Revenues ($mill)	300
						11.3	12.2	13.5	14.1	14.6	16.1	18.0	20.4	20.3	11.9	19.5	25.0	Net Profit ($mill)	38.0
						43.9%	41.9%	43.3%	41.1%	40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	40.0%	40.0%	Income Tax Rate	40.0%
						--	--	--	--	--	--	--	--	--	--	NIl	NIl	AFUDC % to Net Profit	NIl
						43.5%	46.6%	41.9%	43.0%	43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	51.0%	51.0%	Long-Term Debt Ratio	52.0%
						55.5%	52.5%	57.3%	56.3%	55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	49.0%	49.0%	Common Equity Ratio	48.0%
						213.5	230.6	259.0	269.4	277.1	328.2	371.1	447.5	444.4	442.3	490	545	Total Capital ($mill)	700
						314.9	335.0	357.8	383.6	414.8	449.6	509.1	539.8	563.3	602.3	650	710	Net Plant ($mill)	850
						7.1%	7.2%	6.9%	6.9%	7.0%	6.6%	6.4%	6.1%	6.5%	4.6%	6.0%	6.5%	Return on Total Cap'l	7.0%
						0.4%	9.5%	9.0%	9.2%	9.4%	10.0%	9.2%	10.1%	9.5%	5.5%	9.0%	9.5%	Return on Shr. Equity	10.5%
						9.5%	10.0%	9.0%	9.2%	9.4%	10.1%	9.3%	10.1%	9.5%	5.5%	0.0%	9.5%	Return on Com Equity	10.5%
						1.6%	2.1%	2.4%	1.0%	2.1%	2.9%	3.0%	3.6%	3.3%	NUF	3.0%	2.5%	Retained to Com Eq	5.5%
						84%	79%	73%	60%	76%	72%	68%	65%	65%	113%	76%	58%	All Div'ds to Net Prof	48%

CAPITAL STRUCTURE as of 9/30/04

Total Debt $250.1 mill. Due in 5 Yrs $60.0 mill
LT Debt $229.3 mill. LT Interest $16.0 mill
(Total interest coverage: 2.0x)

Leases, Uncapitalized: None
Pension Assets-12/03 $46.7 mill.
Oblig. $58.9 mill.
Pfd Stock None. Pfd Div'd None

Common Stock 16,689,402 shs
as of 11/5/04
MARKET CAP: $425 million (Small Cap)

CURRENT POSITION

(\$MIL.)	2002	2003	9/30/04
Cash Assets	10.4	12.0	6.6
Receivables	10.0	11.8	14.5
Inventory (Avg Cst)	.9	1.4	1.5
Other	21.7	32.4	24.9
Current Assets	51.0	50.4	47.5
Accts Payable	11.6	18.8	19.0
Debt Due	40.3	66.8	28.0
Other	19.6	20.3	20.0
Current Liab.	78.5	85.90	74.5
Fix. Chg. Cov.	205%	255%	200%

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.5%	4.0%	2.5%
"Cash Flow"	3.0%	5.0%	6.0%
Earnings	--	1.6%	8.6%
Dividends	1.5%	1.0%	1.5%
Book Value	4.5%	4.0%	4.0%

QUARTERLY REVENUES ($ mill)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	40.3	49.9	59.4	47.9	197.5
2002	44.5	52.8	61.6	50.3	209.2
2003	46.7	51.8	63.7	50.5	212.7
2004	46.7	59.3	69.0	55.0	230
2005	53.0	66.0	76.0	60.0	255

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.21	.33	.63	.18	1.35
2002	.25	.36	.50	.23	1.34
2003	.20	.13	.51	d.12	.72
2004	.08	.30	.52	.26	1.16
2005	.24	.33	.60	.28	1.45

QUARTERLY DIVIDENDS PAID B■

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	217	217	217	217	.07
2002	217	217	217	221	.87
2003	221	221	221	221	.88
2004	221	221	221	225	.89
2005					

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Southern California Water Company, it supplies water to 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 approximately 22,000 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00); 11,400 customers. Has about 520 employees. Off. & dir. own less than 1% of common stock (4/04 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Incorporated: CA. Add.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel.: 909-394-3600. Web: www.aswater.com.

American States Water will have to contend with increasing infrastructure costs going forward. The company was forced to purchase water from wholesalers in the second half of 2004, as wells were taken out of service for water quality and maintenance reasons. We remain concerned about these circumstances, as industry standards will likely only intensify moving forward due to the threat of bioterrorism and the age of some of current systems. Prolonged well closures can substantially impact margins, given that purchased water can cost more than five times water pumped from company wells.

Still, regulatory relief likely helped the company close out 2004 in strong form. The California Public Utilities Commission (CPUC) has been handing down some favorable decisions in a more timely manner of late, helping boost the company's top line considerably. Specifically, the board granted rate relief in Regions II and III in the amounts of $0.4 million and $15.8 million, respectively in late August. These orders followed an $8.1 million increase in Region III in March.

We look for American to grow earnings by 25% in 2005. Earlier this year, the CPUC approved additional rate increases for Region II and III customer service areas of its SWC unit effective this month. The rate increases there will provide additional annual revenues totaling in excess of $5 million.

These untimely shares hold minimal capital gains appeal ... Although the recent rash of favorable CPUC decisions augurs well for the company's top line, we suspect that AWR will have to tap equity and debt markets in order to keep up with growing government regulations, as it is strapped for cash at this time. Such moves would not only dilute earnings, but could also limit AWR's ability to participate in the growing acquisition market ... but ought to pique the interest of income-oriented investors. The company recently raised its quarterly dividend by 2%, marking the 50th consecutive year that management has increased its annual dividend to shareholders. We expect that the company will continue to increase payouts moving forward.

Andre J. Costanza *January 28, 2005*

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

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	80
Earnings Predictability	70

AQUA AMERICA NYSE-WTR

| RECENT PRICE | 24.25 | P/E RATIO | 26.6 | (Trailing: 29.9) (Median: 20.0) | RELATIVE P/E RATIO | 1.41 | DIV'D YLD | 2.1% | VALUE LINE |

	2007-09 PROJECTIONS		
TIMELINESS	4	Lowered 6/4/04	
SAFETY	3	Lowered 6/1/03	
TECHNICAL	2	Raised 1/7/05	
BETA	.75	(1.00 = Market)	

	Price	Gain	Ann'l Total Return
High	35	(+45%)	11%
Low	20	(-20%)	-2%

CAPITAL STRUCTURE as of 9/30/04
Total Debt $901.5 mill. Due in 5 Yrs $211.9 mill.
LT Debt $772.5 mill. LT Interest $45.0 mill.
(Total interest coverage: 3.5x)

Pension Assets-12/03 $108.7 mill. Oblig $150.1 mill.

Pfd Stock None

Common Stock 83,254,277 shares as of 10/25/04

MARKET CAP: $2.3 billion (Mid Cap)

CURRENT POSITION (MILL)	2002	2003	9/30/04
Cash Assets	48.7	39.2	18.6
Receivables	57.7	62.3	71.0
Inventory (AvgCst)	4.6	5.8	7.6
Other	2.7	5.1	6.1
Current Assets	114.7	112.4	103.3
Accts Payable	31.1	32.3	15.2
Debt Due	149.4	135.8	189.0
Other	46.0	63.9	81.6
Current Liab.	226.5	232.0	285.8
Fix. Chg. Cov.	347%	344%	331%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	7.5%	8.0%
"Cash Flow"	8.5%	10.5%	7.0%
Earnings	8.5%	9.5%	8.0%
Dividends	5.0%	6.0%	7.0%
Book Value	8.0%	9.5%	6.0%

Cal- endar	QUARTERLY REVENUES ($ mill)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	70.2	77.3	84.7	75.1	307.3
2002	71.7	75.6	91.9	81.8	322.0
2003	80.5	83.4	102.1	101.2	367.2
2004	99.8	106.5	120.3	113.4	440
2005	110	120	130	130	490

Cal- endar	EARNINGS PER SHARE A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.14	.18	.22	.14	.68
2002	.14	.16	.25	.17	.72
2003	.15	.18	.24	.19	.76
2004	.17	.19	.26	.23	.85
2005	.19	.23	.27	.26	.95

Cal- endar	QUARTERLY DIVIDENDS PAID B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.099	.099	.099	.106	.40
2002	.106	.106	.106	.112	.43
2003	.112	.112	.112	.12	.46
2004	.12	.12	.12	.13	.49
2005	.13				

BUSINESS: Aqua America, Inc is the holding company for water and wastewater utilities that serve approximately 2.5 million residents in Pennsylvania, Ohio, New Jersey, Illinois, Maine, North Carolina, Texas, Florida, Kentucky, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired Consumers Water, 4/99; AquaSource, 7/03; and others. Water supply revenues '03: residential, 59%; commercial, 17%; industrial & other, 24%. Officers and directors own 1.4% of the common stock (4/04 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 an earnings gain of 12% in 2005, following last year's likely advance of almost 12%. The revenue increase was primarily a result of acquisitions. Heavier-than-usual rainfall in 2004's final quarter likely dampened earnings by as much as $0.03.

Aqua America completed 29 acquisitions in 2004. These purchases were primarily funded with long- and short-term debt. Unsecured notes were the company's preferred way of securing capital, and the year-end close of the ratio of long-term debt to total capital was probably 54%. The interest rate on most of the company's current long-term debt is in the range of 5% to 6.5%. The first addition of 2005 was a water system in Texas at a cost of about $325,000. Aqua sees its southern markets as an appealing expansion avenue.

The company has been relatively successful in achieving rate increases, within this heavily regulated industry. Most recently, Aqua won a 5% rate hike in Pennsylvania. This is equivalent to $13.8 million in annual revenues. The company is also on the verge of a rate hike in Texas, which should be finalized in May. If so, this would raise revenues by about $12 million per annum. Utility commissions are more apt to award increases due to rising capital costs rather than operating expenses. In Aqua's case, rate increases have also been influenced by the it's ability to lower the ratio of expenses to revenues.

This untimely stock's price-to-earnings ratio is somewhat above its traditional norm. Consequently, despite decent earnings growth prospects, this equity's appreciation potential to 2007-2009 is unattractive. The percentage of dividends to net profit has been generally trending down since 1994, and we don't expect this to be reversed in the coming years. The increase in retained earnings, combined with the likeliness of a rising debt level, accounts for our projection that earnings growth in the coming 3 to 5 years will exceed the 8.5% average increase (per Annual Rate box) over the past 10 years. The company's top rank for Earnings Predictability, along with high marks for the Stock's Price Stability and Growth Persistence, may well appeal to conservative investors.

Marc Denton *January 28, 2005*

(A) Primary shares outstanding through '06; diluted thereafter. Excl. nonrec. gains (losses): '90, (38¢); '91, (34¢); '92, (38¢); '00, (11¢); '00, 2¢; '01 2¢; '02, 5¢; '03, 4¢. Excl. gain from disc. operations: '06, 2¢. Next earnings report due early February. (B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	95
Earnings Predictability	100

CALIFORNIA WATER NYSE-CWT

RECENT PRICE	35.12	
P/E RATIO	22.7	(Trailing: 21.0 / Median: 17.0)
RELATIVE P/E RATIO	1.21	
DIV'D YLD	3.2%	

VALUE LINE

TIMELINESS	3	Raised 8/6/04	
SAFETY	2	Lowered 8/11/95	
TECHNICAL	2	Raised 1/2/05	
BETA	.75	(1.00 = Market)	

Target Price Range 2007 2008 2009

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(Nil)	3%
Low	25	(-30%)	-4%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	1	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	1
to Sell	0	0	0	0	0	0	0	0	1

Institutional Decisions

	1Q'04	2Q'04	3Q'04
to Buy	42	40	30
to Sell	19	39	20
Hld's(000)	3785	4047	3504

Percent shares traded: 4.5 / 3.0 / 1.5

% TOT. RETURN 12/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	42.9	17.2
3 yr.	66.0	43.9
5 yr.	57.2	70.6

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	©VALUE LINE PUB., INC. 07-09	
10.03	10.33	10.93	11.18	12.29	13.34	12.59	13.17	14.48	15.40	14.76	15.95	16.16	16.26	17.33	16.371	17.45	18.45	Revenues per sh	20.65
1.07	1.09	1.97	1.98	1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.62	2.20	2.65	2.51	2.95	3.10	"Cash Flow" per sh	3.60
1.23	1.20	1.25	1.21	1.09	1.35	1.22	1.17	1.51	1.03	1.45	1.53	1.31	.94	1.25	1.21	1.58	1.70	Earnings per sh A	2.00
.80	.04	.87	.90	.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	Div'd Decl'd per sh B■	1.18
2.12	2.40	2.36	3.03	3.09	2.53	2.26	2.17	2.63	2.61	2.74	3.41	2.45	4.09	5.82	4.39	3.40	3.65	Cap'l Spending per sh	3.90
9.30	9.66	10.04	10.35	10.51	10.90	11.56	11.72	12.22	13.00	13.38	13.43	12.90	12.95	13.12	14.44	15.55	15.00	Book Value per sh C	18.25
						12.49	12.54	12.62	12.62	12.62	12.94	15.15	15.18	15.16	16.03	18.35	18.70	Common Shs Outst'g D	23.00
11.34	11.38	11.38	11.38	11.38	11.38					17.8	17.8	19.6	27.1	19.8	22.1	18.5		Avg Ann'l P/E Ratio	16.0
11.5	10.5	10.4	11.2	14.1	13.6	14.1	13.7	11.9	12.6	.93	1.01	1.27	1.39	1.06	1.26	.87		Relative P/E Ratio	1.05
.95	.86	.77	.72	.86	.80	.92	.92	.75	.73									Avg Ann'l Div'd Yield	4.0%
5.7%	6.6%	6.7%	6.6%	6.1%	5.2%	5.6%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%	3.9%			

						157.3	165.1	182.8	195.3	185.3	206.4	244.8	246.0	263.2	277.1	320	345	Revenues ($mill)	475
						14.4	14.7	19.1	23.3	18.4	19.9	20.0	14.4	10.1	19.4	29.0	32.0	Net Profit ($mill)	45.0
						40.0%	40.1%	38.9%	37.4%	36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	NIl	NIl	Income Tax Rate	40.0%
						--	--	--	--	--	--	--	--	--	--	NIl	NIl	AFUDC % to Net Profit	NIl
						46.6%	49.2%	47.4%	45.4%	44.2%	46.9%	48.9%	50.3%	55.3%	52.3%	48.5%	49.5%	Long-Term Debt Ratio	49.0%
						52.2%	49.7%	51.4%	53.5%	54.7%	52.0%	50.2%	48.8%	44.0%	47.0%	50.5%	49.5%	Common Equity Ratio	50.0%
						276.9	295.0	299.9	306.7	308.6	333.8	380.8	402.7	451.1	520.3	570	600	Total Capital ($mill)	840
						407.9	422.2	443.6	460.4	478.3	515.4	502.0	524.3	697.0	769.5	800	850	Net Plant ($mill)	995
						7.1%	6.8%	8.3%	9.4%	7.0%	7.0%	6.6%	5.3%	5.9%	5.6%	6.5%	7.0%	Return on Total Cap'l	7.0%
						9.7%	9.8%	12.1%	13.9%	10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	10.0%	10.5%	Return on Shr. Equity	11.0%
						9.5%	9.9%	12.3%	14.1%	10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	10.0%	10.5%	Return on Com Equity	11.0%
						1.9%	1.2%	3.0%	6.0%	2.8%	3.5%	1.8%	NMF	1.0%	.7%	3.0%	3.5%	Retained to Com Eq	4.5%
						81%	89%	69%	66%	74%	70%	82%	119%	90%	91%	72%	67%	All Div'ds to Net Prof	60%

CAPITAL STRUCTURE as of 9/30/04
Total Debt $272.8 mill. Due in 5 Yrs $11.0 mill.
LT Debt $271.9 mill. LT Interest $17.5 mill.

(LT Interest earned: 4.2x; total int. cov.: 3.8x)

Pension Assets-12/03 $88.4 mill.
Oblig. $63.2 mill.

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

Common Stock 18,345,406 shs.
as of 11/4/04

MARKET CAP: $650 million (Small Cap)

CURRENT POSITION	2002	2003	9/30/04
Cash Assets	1.1	2.0	33.1
Other	41.9	40.6	48.7
Current Assets	43.0	43.5	81.8
Accts Payable	23.7	23.8	20.8
Debt Due	24.8	7.3	8
Other	43.0	32.5	37.3
Current Liab.	91.5	63.6	65.0
Fix. Chg. Cov.	250%	218%	201%

ANNUAL RATES	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
of change (per sh)			
Revenues	3.0%	2.0%	3.5%
"Cash Flow"	2.0%	-1.5%	6.5%
Earnings	-.5%	-6.5%	10.0%
Dividends	2.0%	1.0%	1.0%
Book Value	2.5%	1.0%	5.0%

Cal- endar	QUARTERLY REVENUES ($ mill)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	47.0	67.0	76.3	56.5	246.8
2002	51.7	69.2	81.4	60.9	263.2
2003	51.3	68.0	88.2	69.6	277.1
2004	60.2	80.9	97.1	73.8	320
2005	65.0	90.0	105	85.0	345

Cal- endar	EARNINGS PER SHARE A E				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.01	.34	.39	.20	.94
2002	.12	.43	.50	.20	1.25
2003	d.05	.30	.53	.41	1.21
2004	.00	.59	.59	.32	1.58
2005	.09	.55	.70	.36	1.70

Cal- endar	QUARTERLY DIVIDENDS PAID B■				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.279	.279	.279	.279	1.12
2002	.28	.28	.28	.28	1.12
2003	.281	.281	.281	.281	1.12
2004	.283	.283	.283	.283	1.13
2005					

BUSINESS: California Water Service Group provides regulated and nonregulated water service to over 2 million people (461,200 customers) in 98 communities in California, Washington, and New Mexico. 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, '03: residential, 70%; business, 18%; public authorities, 5%; industrial, 4%; other, 3%. '03 reported depreciation rate: 2.2%. Has about 815 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson. Inc: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwater.com.

An improving regulatory environment augurs well for California Water Service Group. Despite sluggish and unfavorable rate case rulings in recent years, it appears as though the California Public Utilities Commission (CPUC) has turned over a new leaf. Recent decisions signal that the regulatory climate is improving and that the current regulatory bodies' policies are becoming more-business friendly. CWT has filed its 2004 general rate case for eight districts, including Salinas. The filing, which covers roughly 40% of its total customer base, requests a $26.5 million in rates in 2005, with increases of $6.3 million in 2006 and 2007. Meanwhile, the company also has other cases still pending with the commission. Favorable decisions would prove our estimates fairly modest. However,

We look for earnings growth to moderate in 2005. We are especially concerned about first-half comparisons, as heavy rainfall has put many of the company's wells out of commission in the past few months. As a result, Cal has been forced to purchase water to meet demand, pushing operating costs considerably higher. Purchased water can cost five times more than internally produced supplies. We look for growth to pick up as the year progresses and as wells are restored. Infrastructure costs ought to limit profits out to late decade. The costs of well and pipeline upkeep has risen and, with the threat of bioterrorism looming, should increase over the next few years. Such costs will force Cal to issue more debt and stock in order to pay the bill.

These shares are not for everyone ... They are ranked 3 (Average) for Timeliness. Moreover, they offer little 3- to 5-year gains appeal, as the 20% surge in share price since our October review discounts any gains we envision at this time. Cal shares are already trading slightly above our 2007-2009 Target Price Range.

... but should interest those looking for some income. CWT offers an above-average dividend yield. Investors should also find solace in the fact that the board of directors has increased the company's annual payout in each of the last 37 years. The stock also carries a 2 (Above Average) rank for Safety.
Andre J. Costanza   *January 28, 2005*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; Q2 '02. 8¢ Next earnings report due late April.
(B) Dividends historically paid in mid-Feb., May, Aug. Nov ■ Div'd reinvestment plan available.
(C) Incl. deferred charges. In '03: $38.0 mill. $2.25/sh.
(D) In millions, adjusted for split.
(E) May not total due to change in shares.

Company's Financial Strength	B++
Stock's Price Stability	65
Price Growth Persistence	90
Earnings Predictability	65

YORK WATER CO NDQ-YORW

| RECENT PRICE | 19.66 | TRAILING P/E RATIO | 25.5 | RELATIVE P/E RATIO | 1.27 | DIV'D YLD | 3.2% | VALUE LINE | 4712 |

RANKS

PERFORMANCE	4 Below Average
Technical	3 Average
SAFETY	3 Average
BETA	55 (1.00 = Market)

Financial Strength	B+
Price Stability	75
Price Growth Persistence	NMF
Earnings Predictability	NMF

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

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
REVENUES PER SH					6.07	3.08	3.07	3.25		1.65
"CASH FLOW" PER SH					1.79	.88	.86	.97	.75 A-B	.79 C/NA
EARNINGS PER SH					1.24	.65	.60	.70		
DIV'D DECL'D PER SH					.88	.51	.53	.65		
CAP'L SPENDING PER SH					2.11	1.12	.99	1.61		
BOOK VALUE PER SH					10.66	5.69	5.85	6.08		
COMMON SHS OUTST'G (MILL)					3.04	6.31	6.36	6.42		
AVG ANN'L P/E RATIO						17.9	26.9	24.5	26.2	24.9/NA
RELATIVE P/E RATIO						.92	1.47	1.40		
AVG ANN'L DIV'D YIELD						4.3%	3.3%	3.2%		Bold figures pro consensus earnings estimates and, using the recent prices P/E ratios
REVENUES (SMILL)					18.5	19.4	18.6	20.9		
NET PROFIT (SMILL)					9.8	4.0	3.8	4.4		
INCOME TAX RATE					35.7%	35.0%	34.9%	34.8%		
AFUDC % TO NET PROFIT						2.2%	3.7%			
LONG-TERM DEBT RATIO					50.2%	47.7%	46.7%	43.4%		
COMMON EQUITY RATIO					49.8%	52.3%	53.3%	56.6%		
TOTAL CAPITAL (SMILL)					65.2	68.5	69.9	69.0		
NET PLANT (SMILL)					97.0	102.3	106.7	116.5		
RETURN ON TOTAL CAP'L					7.0%	7.9%	7.4%	8.5%		
RETURN ON SHR. EQUITY					11.6%	11.2%	10.2%	11.4%		
RETURN ON COM EQUITY					11.6%	11.2%	10.2%	11.4%		
RETAINED TO COM EQ					2.5%	2.5%	1.3%	2.6%		
ALL DIV'DS TO NET PROF					78%	78%	88%	77%		

A No. of analysts changing earn. est in last 15 days: 0 up, 0 down, consensus 5-year earnings growth 7.0% per year. B Based upon 2 analysts' estimates. C Based upon 2 analysts' estimates.

INDUSTRY: Water Utility

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Revenues		6.0%
"Cash Flow"		13.0%
Earnings		10.5%
Dividends		5.0%
Book Value		4.0%

ASSETS ($mill.)	2002	2003	9/30/04
Cash Assets	0	0	.0
Receivables	2.8	3.2	3.2
Inventory	.5	.6	.0
Other	.4	.4	.7
Current Assets	3.7	4.1	4.7
Property, Plant & Equip, at cost	127.7	139.1	
Accum Depreciation	21.0	22.6	
Net Property	106.7	116.5	136.4
Other	8.0	6.9	7.7
Total Assets	118.4	127.5	140.8
LIABILITIES ($mill.)			
Accts Payable	.7	1.7	3.2
Debt Due	2.8	8.9	11.8
Other	2.0	2.4	2.0
Current Liab	5.5	14.0	17.0

Fiscal Year	QUARTERLY SALES ($mill.)				Full Year
	1Q	2Q	3Q	4Q	
12/31/02	4.7	4.9	5.3	4.7	18.6
12/31/03	4.8	5.0	5.8	6.3	20.9
12/31/04	5.4	5.5	6.8		
12/31/05					

Fiscal Year	EARNINGS PER SHARE				Full Year
	1Q	2Q	3Q	4Q	
12/31/01	.13	.14	.23	.15	.65
12/31/02	.14	.15	.16	.13	.50
12/31/03	.12	.16	.24	.18	.70
12/31/04	.25	.16	.18	.15	
12/31/05	.26	.14			

Cal-endar	QUARTERLY DIVIDENDS PAID				Full Year
	1Q	2Q	3Q	4Q	
2002	.13	.13	.13	.13	.52
2003	.135	.135	.135	.135	.54
2004	.145	.145	.145	.145	.58
2005	.155				

LONG-TERM DEBT AND EQUITY as of 9/30/04

Total Debt $47.4 mill.   Due in 5 Yrs NA
LT Debt $35.6 mill.
Including Cap. Leases NA   (43% of Cap'l)
Leases, Uncapitalized Annual rentals NA
Pension Liability None in '03 vs $1.7 mill. in '02
Pfd Stock None   Pfd Div'd Paid None
Common Stock 6,873,023 shares   (57% of Cap'l)

BUSINESS: York Water Company engages in the impounding, purification, and distribution of water in York County, Pennsylvania. The company has two reservoirs, Lake Williams and Lake Redman, which together hold up to 2.75 billion gallons of water. It supplies water for domestic, commercial, industrial, and fire protection purposes. The company serves approximately 149,000 people in 31 municipalities in York County, Pennsylvania. It supplies through the company's own distribution system to the city of York; the boroughs of North York; West York; Manchester; Mount Wolf; New Salem; Hallam; Jacobus; Loganville; Yorkana; Seven Valleys; East Prospect; Jefferson; Glen Rock; New Freedom; Railroad; and portions of the townships of Manchester; East Manchester; West Manchester; North Codorus; Shrewsbury; North Hopewell; Hopewell; Springettsbury; Spring Garden; Conewago; Springfield; York; Hellam; Windsor; Lower Windsor; Dover; and Jackson. Has 92 employees. C.E.O. & President: William Morris. Inc: PA. Address: 130 East Market Street; York; PA 17401. Tel: (717) 845-3601. Internet: http://www.yorkwater.com.   A.Z.

January 28, 2005

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 12/31/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
12.76%	6.91%	9.90%	45.84%	

INSTITUTIONAL DECISIONS

	1Q'04	2Q'04	3Q'04
to Buy	2	1	5
to Sell	4	6	4
Hld's(000)	661	541	430

MIDDLESEX WATER NDQ–MSEX | RECENT PRICE **17.82** | TRAILING P/E RATIO **17.5** | RELATIVE P/E RATIO **0.87** | DIV'D YLD **3.8%** | VALUE LINE **4709**

| | 9.63 / 7.75 | 11.25 / 8.10 | 12.80 / 9.63 | 19.75 / 10.50 | 16.97 / 12.60 | 18.73 / 14.69 | 20.04 / 13.73 | 21.23 / 15.77 | 21.81 / 16.65 | | High / Low |

RANKS

PERFORMANCE 3 Average
Technical 3 Average
SAFETY 2 Above Average
BETA .65 (1.00 = Market)

Financial Strength B++
Price Stability 05
Price Growth Persistence 75
Earnings Predictability 70

LEGENDS
— 12 Mos Mov Avg
··· Rel Price Strength
3-for-2 split 7/02
4-for-3 split 11/03
Shaded area indicates recession

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	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
SALES PER SH		4.52	4.72	4.39	5.35	5.39	5.87	5.98	6.12	—	
"CASH FLOW" PER SH		.94	1.02	1.02	1.19	.99	1.19	1.20	1.15	.69	.00/NA
EARNINGS PER SH		.60	.67	.71	.76	.51	.66	.73	.61		
DIV'DS DECL'D PER SH		.55	.57	.58	.60	.61	.62	.63	.65		
CAP'L SPENDING PER SH		.73	1.20	2.68	2.33	1.32	1.25	1.59	1.67	—	
BOOK VALUE PER SH		5.85	6.00	6.80	6.95	6.95	7.11	7.39	7.60		
COMMON SHS OUTST'G (MILL)		8.41	8.54	8.82	10.00	10.11	10.17	10.36	10.48	25.8	22.3/NA
AVG ANN'L P/E RATIO		14.4	13.4	15.2	17.6	28.7	24.6	23.5	30.0	—	
RELATIVE P/E RATIO		.90	.77	1.00	1.00	1.87	1.26	1.28	1.71	—	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios
AVG ANN'L DIV'D YIELD		6.4%	6.3%	5.4%	4.4%	4.2%	3.8%	3.7%	3.5%	—	
SALES ($MILL)		38.0	40.3	43.1	53.5	54.5	59.6	61.9	64.1	—	
OPERATING MARGIN		36.0%	37.2%	37.0%	33.9%	32.2%	47.2%	47.1%	44.0%	—	
DEPRECIATION ($MILL)		2.9	3.1	3.8	4.3	4.9	5.3	5.0	5.6	—	
NET PROFIT ($MILL)		5.2	5.9	6.5	7.8	5.3	7.0	7.8	6.6	—	
INCOME TAX RATE		32.8%	34.9%	31.5%	28.8%	33.1%	34.8%	33.3%	32.8%	—	
NET PROFIT MARGIN		13.6%	14.5%	15.1%	14.7%	.0.7%	11.7%	12.6%	10.3%	—	
WORKING CAP'L ($MILL)		2.0	d2.9	14.6	6.8	d2.7	d1.9	d9.3	d13.3	—	
LONG-TERM DEBT ($MILL)		53.0	52.0	78.0	82.3	81.1	88.1	87.5	97.4	—	
SHR. EQUITY ($MILL)		51.9	56.2	71.7	74.6	74.7	76.4	80.8	83.7	—	
RETURN ON TOTAL CAP'L		6.4%	6.8%	5.7%	6.4%	4.9%	5.6%	6.0%	5.0%	—	
RETURN ON SHR. EQUITY		10.0%	10.4%	9.1%	10.6%	7.1%	9.1%	9.6%	7.9%	—	
RETAINED TO COM EQ		8%	1.7%	1.8%	2.5%	NMF	.5%	1.3%	NMF	—	
ALL DIV'DS TO NET PROF		92%	85%	81%	78%	121%	94%	87%	106%	—	

Ann. of analysts changing earn. est. in last 15 days: 0 up, 0 down, consensus 5-year earnings growth 6.0% per year. A Based upon one analyst's estimate. B Based upon one analyst's estimate.

ANNUAL RATES of change (per share)

	5 Yrs.	1 Yr.
Sales	5.5%	2.5%
"Cash Flow"	3.5%	-5.0%
Earnings	0.5%	-16.0%
Dividends	2.5%	2.5%
Book Value	3.5%	3.0%

QUARTERLY SALES ($mill.)

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/02	14.3	15.5	17.0	15.4	61.9
12/31/03	16.0	16.0	17.6	15.5	64.1
12/31/04	15.9	17.9	69.0		
12/31/05					

EARNINGS PER SHARE

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/01	.06	.18	.23	.17	.66
12/31/02	.12	.18	.24	.19	.73
12/31/03	.11	.17	.22	.11	.61
12/31/04	.09	.16	.55	.14	
12/31/05	.10				

QUARTERLY DIVIDENDS PAID

Cal-endar	1Q	2Q	3Q	4Q	Full Year
2002	158	158	158	161	.64
2003	161	161	161	165	.65
2004	165	165	165	166	.66
2005					

INSTITUTIONAL DECISIONS

	1Q'04	2Q'04	3Q'04
to Buy	17	19	12
to Sell	15	13	17
Hld's(000)	1749	1911	1082

ASSETS ($mill.)

	2002	2003	9/30/04
Cash Assets	2.9	3.0	2.6
Receivables	9.2	5.7	11.3
Inventory (Avg cost)	1.2	1.4	1.6
Other	7.0	4.3	1.0
Current Assets	20.3	14.4	16.5

Property, Plant, & Equip, at cost	259.3	278.4	
Accum Depreciation	47.9	47.5	
Net Property	211.4	230.9	248.0
Other	12.9	17.9	15.4
Total Assets	244.6	263.2	279.9

LIABILITIES ($mill.)

Accts Payable	2.1	4.0	7.4
Debt Due	18.3	13.6	7.1
Other	9.2	9.3	10.1
Current Liab	29.6	27.7	24.6

LONG-TERM DEBT AND EQUITY as of 9/30/04

Total Debt $107.4 mill. Due in 5 Yrs. NA
LT Debt $100.3 mill.
Including Cap. Leases NA
(50% of Cap'l)

Leases, Uncapitalized Annual rentals NA

Pension Liability $5.1 mill. in '03 vs. $5.3 mill. in '02

Pfd Stock $4.1 mill. Pfd Div'd Paid $.3 mill.
(2% of Cap'l)

Common Stock 11,327,237 shares
(48% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Middlesex Water Company, through its subsidiaries, engages in the ownership and operation of regulated water utility systems in central and southern New Jersey, and in Delaware, as well as a regulated wastewater utility in southern New Jersey. Its New Jersey water utility system (the Middlesex System) provides water services to retail customers in central New Jersey. The Middlesex System also provides water service under contract to municipalities in central New Jersey. The company operates the water supply system and wastewater system for the city of Perth Amboy in New Jersey in partnership with its subsidiary, Utility Service Affiliates (Perth Amboy), Inc. Its other New Jersey subsidiaries provide water and wastewater services to residents in Southampton Township. The company's Delaware subsidiaries, comprising Tidewater Utilities, Inc. and Southern Shores Water Company, LLC, offer water services to retail customers in New Castle, Kent, and Sussex Counties. Has 209 employees. C.E.O. & President: J. Richard Tompkins. Inc.: NJ. Address: 1500 Ronson Road, Iselin, NJ 08830. Tel.: (732) 634-1500. Internet: http://www.middlesexwater.com. A.O.

January 28, 2005

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 12/31/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
6.61%	-0.62%	-3.39%	23.60%	41.99%

<u>Middlesex Water Company</u>
<u>Calculation of Historical BR + SV</u>

	1	2	3	4	5
	BR (1)	S Factor (2)	V Factor (3)	SV (4)	BR + SV (5)
Proxy Group of Five AUS Utility Reports Water Companies					
American States Water Co	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
Artesian Resources Corp	2.2	8.0	40.6	3.2	5.4
California Water Services Group	1.8	6.3	48.8	3.1	4.9
York Water Company	2.0	2.1	55.0	1.2	3.2
Average	2.9 %	7.0 %	50.6 %	3.8 %	6.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Average	3.5 %	8.3 %	52.4 %	4.8 %	8.3 %
Middlesex Water Company	1.5 %	1.5 %	56.4 %	0.8 %	2.3 %

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

<u>Middlesex Water Company</u>
Historical Internal Growth Rate (1), i.e. BR, for
the Proxy Group of Five AUS Utility Reports Water Companies,
Proxy Group of Three Value Line (Standard Edition) Water Companies and
Middlesex Water Company
for the Years 1999 -2003

	1	2	3	4	5	6
						Five-Year Average 1999-2003 Internal Growth Rate. I.e., BR
	2003	2002	2001	2000	1999	
Proxy Group of Five AUS Utility Reports Water Companies						
American States Water Co.						
Common Equity Return Rate	5 59 %	9 83 %	10 37 %	10 24 %	10 23 %	
Retention Ratio	(12 98)	35 04	35 65	32 06	28 40	
Internal Growth Rate (1)	(0.73)	3 44	3 70	3 28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12 30 %	13 02 %	13 34 %	13 32 %	12.17 %	
Retention Ratio	43 61	45 22	42 95	42 40	27 15	
Internal Growth Rate (1)	5 36	6 29	5 73	5 65	3 30	5 3
Artesian Resources Corp.						
Common Equity Return Rate	7 41 %	9 67 %	9 80 %	7 39 %	8 74 %	
Retention Ratio	19 24	34 98	31 35	8 12	27 74	
Internal Growth Rate (1)	1 43	3 38	3.07	0 60	2 70	2 2
California Water Services Group						
Common Equity Return Rate	8.68 %	9 50 %	7 49 %	10 54 %	11 43 %	
Retention Ratio	8 79	10 13	(14 22)	18 03	30 37	
Internal Growth Rate (1)	0 76	0 97	(1 07)	1 90	3 47	1 8 (2)
York Water Company						
Common Equity Return Rate	11 60 %	10 37 %	11 73 %	11 86 %	10.31 %	
Retention Ratio	21 04	12.32	21 07	21 50	10 46	
Internal Growth Rate (1)	2 45	1 20	2 50	2 55	1 08	2.0
Average						2.8 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.						
Common Equity Return Rate	5 59 %	9 83 %	10 37 %	10.24 %	10.23 %	
Retention Ratio	(12 98)	35 04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0 73)	3 44	3.70	3 28	2.91	3 3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12 30 %	13 92 %	13 34 %	13 32 %	12 17 %	
Retention Ratio	43 61	45 22	42 95	42 40	27 15	
Internal Growth Rate (1)	5 38	6 29	5 73	5 65	3 30	5 3
California Water Services Group						
Common Equity Return Rate	8 68 %	9 58 %	7 49 %	10 54 %	11.43 %	
Retention Ratio	8 79	10 13	(14 22)	18 03	30 37	
Internal Growth Rate (1)	0 78	0 97	(1 07)	1 90	3 47	1.8 (2)
Average						3.5 %
Middlesex Water Company						
Common Equity Return Rate	8 17 %	10 10 %	9 37 %	7 18 %	11.05 %	
Retention Ratio	(6 51)	13 33	5 88	(21 76)	22 73	
Internal Growth Rate (1)	(0.53)	1 35	0 55	(1 56)	2 51	1.5 % (2)

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

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

	1	2	3	4	5	6	7	8	9	10	11	12
	1998 Common Shares Outstanding (1)	97-98 Growth	1999 Common Shares Outstanding (1)	98-99 Growth	2000 Common Shares Outstanding (1)	99-00 Growth	2001 Common Shares Outstanding (1)	00-01 Growth	2002 Common Shares Outstanding (1)	01-02 Growth	2003 Common Shares Outstanding (1)	Five Year Average Common Share Growth
Proxy Group of Five AUS Utility Reports Water Companies												
American States Water Co.	13,437	0.0 %	13,437	12.5 %	15,120	0.0 %	15,120	0.4 %	15,181	0.2 %	15,212	2.6 %
Aqua America, Inc.	54,154	47.9	80,104	4.7	83,869	1.9	85,483	(0.7)	84,896	9.1	92,589	15.9 (2)
Artesian Resources Corp.	2,704	10.8	2,997	0.8	3,020	1.3	3,050	26.2	3,853	1.0	3,901	8.0
California Water Services Group	12,619	2.5	12,936	17.1	15,146	0.2	15,182	0.0	15,182	11.5	16,932	6.3
York Water Company	5,960	(1.0)	5,902	1.8	6,010	5.0	6,308	0.9	6,365	0.8	6,419	2.1 (2)
Average												7.0 %
Proxy Group of Three Value Line (Standard Edition) Water Companies												
American States Water Co.	13,437	0.0 %	13,437	12.5 %	15,120	0.0 %	15,120	0.4 %	15,181	0.2 %	15,212	2.6 %
Aqua America, Inc.	54,154	47.9	80,104	4.7	83,869	1.9	85,483	(0.7)	84,896	9.1	92,589	15.9 (2)
California Water Services Group	12,619	2.5	12,936	17.1	15,146	0.2	15,182	0.0	15,182	11.5	16,932	6.3
Average												8.3 %
Middlesex Water Company	9,794	2.1 %	10,002	1.0 %	10,098	0.7 %	10,168	1.8 %	10,356	2.0 %	10,557	1.5 %

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

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Middlesex 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
	1999	2000	2001	2002	2003	Five Year	
	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Average Market to Book Ratio	V Factor (2)
Proxy Group of Five AUS Utility Reports Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
Artesian Resources Corp.	168.0	163.3	163.8	162.1	184.5	168.3	40.60
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
York Water Company	174.4	154.2	214.9	281.5	266.9	222.4	55.00
Average						209.7 %	50.60 %
Proxy Group of Three Value Line (Standard Edition) Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Average						219.3 %	52.40 %
Middlesex Water Company	218.3 %	209.9 %	236.9 %	232.9 %	247.9 %	229.2 %	56.40 %

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

Middlesex 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 2007 - 2009 (1)							
	Actual 2003	Projected 2007-2009	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)
Proxy Group of Five AUS Utility Reports Water Companies											
American States Water Co.	15.21	19.00	4.6 %	30.00	20.00	17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	35.00	20.00	8.80	27.50	68.0	1.1	6.0	7.1
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
York Water Company	6.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			4.2 %					45.7 %	1.7 %	5.5 %	7.1 %
Proxy Group of Three Value Line (Standard Edition) Water											
American States Water Co.	15.21	19.00	4.6 %	$30.00	$20.00	$17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	35.00	20.00	8.80	27.50	68.0	1.1	6.0	7.1
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Average			4.2 %					45.7 %	1.7 %	5.5 %	7.1 %
Middlesex Water Company	10.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Available

Notes:
(1) From pages 8 through 12 of this Schedule.
(2) The S Factor is the six or five year compound growth rate between the 2003 and 2008 (mid-point of 2007-2009 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 9, column 14 of this Schedule.
(7) Column 9 + column 10.

Source of Information: Value Line Investment Survey, January 28, 2005

Middlesex Water Company
Retained (Internal) Growth Data

	1	2	3	4	5	6	7	8	9	10	11	12	12	13
		2001			2007-2009						2007-2009			
	Common Equity (%)(1)	Total Capital ($ mil)(1)	Common Equity ($ mil)(1)	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)
Proxy Group of Five AUS Utility Recent Water Companies														
American State Water Co.	48.00 %	$442.30	$212.30	48.00 %	$700.00	$330.00	0.02 %	1.05 %	10.50 %	11.03 %	$2.00	$0.08	62.0 %	5.7 %
Aqua America, Inc.	40.00	1,355.70	650.07	48.00	1,300.00	634.50	-0.74	1.00	13.10	13.00	1.20	0.55	45.8	0.0
Aqua Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Service Group	47.00	520.30	244.54	50.00	640.00	420.00	11.42	1.05	11.00	11.55	2.00	1.18	41.0	4.7
York Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average														5.5 %
Proxy Group of Three Value Line (Standard Edition) Water Companies														
American State Water Co.	40.00 %	$442.30	$212.30	48.00 %	$700.00	$330.00	0.02 %	1.05 %	10.50 %	11.03 %	$2.00	$0.08	62.0 %	5.7 %
Aqua America, Inc.	48.50	1,355.70	650.07	40.50	1,300.00	470.50	0.16	1.00	13.00	13.00	1.20	0.55	45.8	0.0
California Water Service Group	47.00	520.30	244.54	47.00	640.00	344.50	10.06	1.05	11.00	11.55	2.00	1.10	41.0	4.7
Average														5.5 %
Middlesex Water Company	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Available

Notes:
(1) From pages 8 through 12 of this Schedule.
(2) Column 1 * column 2.
(3) Column 4 * column 5.
(4) The year compound growth rate in common equity from 2001 to 2007-2009 or ((((column 6 / 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, January 21, 2005

Middlesex 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 Five AUS Utility Reports Water	Proxy Group of Three Value Line (Standard Edition) Water Companies	Middlesex Water Company
1	Prospective Yield on Aaa Rated Corporate Bonds (1)	6 2 %	6 2 %	6 2 %
2	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.4 (2)	0.4 (2)	0.4 (2)
3	Adjusted Prospective Yield on A Rated Public Utility Bonds	6 6 % (3)	6 6 %	6 6 %
4	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.0 (4)	0.0 (4)	0.0 (4)
5.	Adjusted Prospective Bond Yield	6 6	6 6	6 6
6	Equity Risk Premium (5)	4.1	4.2	3.9
7	Risk Premium Derived Common Equity Cost Rate	10.7 %	10.8 %	10.5 %

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 bonds of 0 43%, rounded to 0 4% from page 4 of this Schedule

(3) Assumed

(4) No adjustment necessary as the average Moody's bond rating of the proxy group is A2 and Middlesex Water Company's Moody's bond rating is assumed to be A2

(5) From page 5 of this Schedule

Middlesex Water Company
Comparison of Bond Ratings and Business Profile for the Proxy Group of Five AUS
Utility Reports Water Companies and the Proxy Group of Three Value Line
(Standard Edition) Water Companies and Middlesex Water Company

	March 2005 Moody's Bond Rating		March 2005 Standard & Poor's Bond Rating					Standard & Poor's Business Position / Profile (2)
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	Outlook	
Proxy Group of Five AUS Utility Reports Water Companies								
American States Water Co. (3)	A2	6	A-	7	A-	7	Negative	3
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	Stable	2
Artesian Resources, Inc.	NR	--	NR	--	NR	--	--	--
California Water Service Group (5)	A2	6	NR	--	A+	5	Stable	3
York Water Company	NR	--	NR	--	A-	5	Stable	2
Average	A2	6.0	A+ / A	5.5	A+ / A	5.5		2.5
Proxy Group of Three Value Line (Standard Edition) Water								
American States Water Co. (3)	A2	6	A-	7	A-	7	Negative	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	Stable	2.0
California Water Service Group (5)	A2	6	NR	--	A+	5	Stable	3.0
Average	A2	6.0	A+ / A	5.5	A	5.7		2.7
Middlesex Water Company	NR	--	A+	5	A	6	Negative	3

Notes: (1) From page 3 of this Schedule.
(2) From Standard & Poor's U.S. Utilities and Power Ranking List, March 31, 2005.
(3) Ratings and business profile are those of Southern California Water Company
(4) Ratings and business profile are those of Aqua Pennsylvania, Inc.
(5) Ratings and business profile are those of California Water Service Company.

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

Middlesex Water Company
Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

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-

Moody's
Comparison of Interest Rate Trends
for the Three Months Ending February 2005 (1)

| Years | Corporate Bonds Aaa Rated | Public Utility Bonds | | | Spread - Corporate v. Public Utility Bonds | | | Spread - Public Utility Bonds | |
		Aa Rated	A Rated	Baa Rated	Aa (Pub. Util.) over Aaa (Corp.)	A (Pub. Util.) over Aaa (Corp.)	Baa (Pub. Util.) over Aaa (Corp.)	A over Aa	Baa over A
December-04	5.47 %	5.78 %	5.92 %	6.10 %					
January-05	5.36	5.68	5.78	5.95					
February-05	5.20	5.55	5.61	5.76					
Average of Last 3 Months	5.34 %	5.67 %	5.77 %	5.94 %	0.33 %	0.43 %	0.60 %	0.10 %	0.17 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record , March 2005, Vol. 72, No. 3

Middlesex Water Company
Judgment of Equity Risk Premium for the Proxy Group of Five AUS
Utility Reports Water Companies and the Proxy Group of Three Value Line
(Standard Edition) Water Companies and Middlesex Water Company

Line No.		Proxy Group of Five AUS Utility Reports Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Middlesex Water Company
1	Calculated equity risk premium based on the total market using the beta approach (1)	3.9 %	4.1 %	3.6 %
2	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.2	4.2	4.2
3	Average equity risk premium	4.1 %	4.2 %	3.9 %

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

Middlesex Water Company
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for Middlesex Water Company,
the Proxy Group of Five AUS Utility Reports Water Companies and
(Standard Edition) Water Companies and Middlesex Water Company

Line No.		Proxy Group of Five AUS Utility Reports Water	Proxy Group of Three Value Line (Standard Edition) Water Companies	Middlesex Water Company
1	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index - 1926-2004 (1)	12.4 %	12.4 %	12.4 %
2	Arithmetic mean yield on Aaa and Aa Corporate Bonds 1926-2004 (2)	(6.1)	(6.1)	(6.1)
3	Historical Equity Risk Premium	6.3 %	6.3 %	6.3 %
4	Forecasted 3-5 year Total Annual Market Return (3)	11.0 %	11.0 %	11.0 %
5	Prospective Yield on Aaa Rated Corporate Bonds (4)	(6.2)	(6.2)	(6.2)
6	Forecasted Equity Risk Premium	4.8 %	4.8 %	4.8 %
7	Average of Historical and Forecasted Equity Risk Premium (5)	5.6 %	5.6 %	5.6 %
8	Adjusted Value Line Beta (6)	0.69	0.73	0.65
9.	Beta Adjusted Equity Risk Premium	3.8 %	4.1 %	3.6 %

Notes: (1) From Stocks, Bonds, Bills and Inflation - 2005 Yearbook Valuation Edition. Ibbotson Associates. Inc. Chicago, IL 2005

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

(3) From page 3 of Schedule PMA-15

(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 April 1, 2005 (see page 7 of this Schedule). The estimates are detailed below

Second Quarter 2005	5.7 %
Third Quarter 2005	6.0
Fourth Quarter 2005	6.2
First Quarter 2006	6.3
Second Quarter 2006	6.4
Third Quarter 2006	6.6
Average	6.2 %

(5) Average of the Historical Equity Risk Premium of 6.3% from Line No. 3 and the Forecasted Equity Risk Premium of 4.8% from Line No. 6 ((6.3% + 4.8%) / 2 = 5.55% rounded to 5.6%)

(6) From page 8 of this Schedule.

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

										Consensus Forecasts-Quarterly Avg.					
		---History---							Latest Q*	2Q	3Q	4Q	1Q	2Q	3Q
		--Average For Week Ending--				--Average For Month--			1Q 2005	2005	2005	2005	2006	2006	2006
Interest Rates	Mar.18	Mar.11	Mar.4	Feb.25	Feb.	Jan.	Dec.								
Federal Funds Rate	2.55	2.50	2.51	2.52	2.50	2.28	2.16	2.43	3.0	3.4	3.7	3.9	4.1	4.2
Prime Rate	5.50	5.50	5.50	5.50	5.49	5.25	5.14	5.41	6.0	6.4	6.7	6.9	7.1	7.2
LIBOR, 3-mo	3.03	2.98	2.94	2.88	2.82	2.67	2.50	2.82	3.2	3.6	4.0	4.2	4.3	4.4
Commercial Paper, 1-mo	2.68	2.61	2.58	2.50	2.49	2.33	2.22	2.48	3.0	3.5	3.8	4.0	4.2	4.3
Treasury bill, 3-mo	2.80	2.76	2.75	2.69	2.58	2.37	2.22	2.57	3.0	3.4	3.7	3.9	4.1	4.2
Treasury bill, 6-mo	3.10	3.04	3.00	2.94	2.85	2.68	2.50	2.86	3.3	3.6	3.9	4.1	4.3	4.4
Treasury bill, 1 yr	3.31	3.24	3.20	3.13	3.03	2.86	2.67	3.05	3.5	3.8	4.1	4.3	4.4	4.5
Treasury note, 2 yr	3.73	3.66	3.58	3.50	3.38	3.22	3.01	3.42	3.8	4.1	4.4	4.5	4.7	4.8
Treasury note, 5 yr	4.18	4.11	4.00	3.89	3.77	3.71	3.60	3.86	4.3	4.5	4.7	4.9	5.0	5.1
Treasury note, 10 yr	4.51	4.45	4.37	4.28	4.17	4.22	4.23	4.28	4.6	4.9	5.0	5.2	5.3	5.3
Treasury note, 20 yr	4.91	4.84	4.79	4.74	4.61	4.77	4.88	4.74	5.1	5.3	5.5	5.6	5.7	5.7
Corporate Aaa bond	5.40	5.35	5.34	5.30	5.20	5.36	5.47	5.31	5.7	6.0	6.2	6.3	6.4	6.5
Corporate Baa bond	6.05	5.97	5.95	5.91	5.82	6.02	6.15	5.94	6.4	6.7	6.9	7.0	7.2	7.2
State & Local bonds	4.56	4.57	4.50	4.42	4.35	4.41	4.48	4.43	4.7	4.9	5.0	5.2	5.3	5.3
Home mortgage rate	5.95	5.85	5.79	5.69	5.63	5.71	5.75	5.73	6.1	6.3	6.5	6.7	6.8	6.8

				---History---					Consensus Forecasts-Quarterly Avg.					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q*	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2003	2003	2003	2004	2004	2004	2004	2005	2005	2005	2005	2006	2006	2006
Major Currency Index	90.8	90.7	87.8	85.3	88.0	86.5	81.9	81.1	80.0	79.4	79.0	79.1	79.1	79.3
Real GDP	4.1	7.4	4.2	4.5	3.3	4.0	3.8	3.9	3.7	3.6	3.5	3.4	3.4	3.5
GDP Price Index	1.1	1.4	1.6	2.8	3.2	1.4	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.2
Consumer Price Index	0.7	2.4	0.7	3.5	4.8	1.9	3.4	2.4	2.6	2.4	2.5	2.5	2.5	2.5

[1] 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). *Interest rate data for 1Q 2005 based on historical data through the week ended March 18. Data for 1Q 2005 Major Currency Index also is based on data through week ended March 18. Figures shown for 1Q 2005 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question survey this month of the panel members.*

U.S. Treasury Yield Curve
Week ended March 18, 2005 and Year Ago vs 1Q 2005 and 2Q 2006 Consensus forecasts

U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield
(Quarterly Average) History   Forecast

Corporate Bond Spreads
As of week ended March 18, 2005

U.S. Treasury Yield Curve
As of week ended March 18, 2005

Middlesex 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)
		1
Time Period 1	Arithmetic Mean Holding Period Returns (2):	1928-2003
	Standard & Poor's Public Utility Index	10 8 %
2.	Arithmetic Mean Yield on: A Rated Public Utility Bonds	(6.6)
3	Equity Risk Premium	4.2 %

Notes: (1) S&P Public Utility Index and Moody's Public Utility Bond Average Annual Yields 1928-2003, (US Consultants - Utility Services, 2004)

(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

Middlesex Water Company
Value Line Adjusted Betas for the Proxy Group of Five AUS
Utility Reports Water Companies and the Proxy Group of Three Value Line
(Standard Edition) Water Companies and Middlesex Water Company

	Value Line Adjusted Beta
Proxy Group of Five AUS Utility Reports Water Companies	
American States Water Co.	0 70
Aqua America, Inc.	0.75
Artesian Resources Corp.	NA
California Water Service Group	0.75
York Water Company	0.55
Average	0.69
Proxy Group of Three Value Line (Standard Edition) Water	
American States Water Co.	0.70
Aqua America, Inc.	0 75
California Water Service Group	0.75
Average	0.73
Middlesex Water Company	0.65

NA = Not Available

Source of Information: Value Line Investment Survey, January 28, 2005
Standard Edition and Small and Mid-Cap Edition

<u>Middlesex Water Company</u>
of the Capital Asset Pricing Model for the Proxy Group of Five AUS
Utility Reports Water Companies, the Proxy Group of Three Value Line
(Standard Edition) Water Companies and Middlesex Water Company

Line No.		Proxy Group of Five AUS Utility Reports Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Middlesex Water Company
		Traditional Capital Asset Pricing Model		
1	Risk-Free Rate (1)	5.5 %	5 5 %	5.5 %
2	Average Company-Specific Market Premium (2)	4.4	4.7	4.2
3	Capital Asset Pricing Model Derived Company Equity Cost Rate	9.9 %	10.2 %	9.7 %
		Empirical Capital Asset Pricing Model		
4	Risk-Free Rate (1)	5 5 %	5 5 %	5 5 %
5	Average Company-Specific Market Premium (2)	4.9	5.1	4.7
6	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.4 %	10.6 %	10.2 %
7	Conclusion	10.2 %	10.4 %	10.0 %

Notes: (1) Developed in note 2 of page 3 of this Schedule

(2) Developed on page 2 of this Schedule

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

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 6.4% (1)	CAPM Result Including Risk-Free Rate of 5.5% (2)
		Traditional Capital Asset Pricing Model (3)	
Proxy Group of Five AUS Utility Reports Water Companies			
American States Water Co	0 70	4 5 %	10 0 %
Aqua America, Inc	0 75	4 8	10 3
Artesian Resources Corp	NA	NA	NA
California Water Service Group	0 75	4 8	10 3
York Water Company	0.55	3.5	9.0
Average	0.69	4.4 %	9.9 % (4)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co	0.70	4.5 %	10.0 %
Aqua America. Inc	0 75	4.8	10 3
California Water Service Group	0.75	4.8	10.3
Average	0.73	4.7 %	10.2 % (4)
Middlesex Water Company	0.65	4.2 %	9.7 %
		Empirical Capital Asset Pricing Model (5)	
Proxy Group of Five AUS Utility Reports Water Companies			
American States Water Co	0 70	5 0 %	10 5 %
Aqua America, Inc	0 75	5 2	10 7
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.75	5 2	10.7
York Water Company	0.55	4.2	9.7
Average	0.69	4.9 %	10.4 % (4)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0 70	5.0 %	10 5 %
Aqua America, Inc.	0 75	5 2	10 7
California Water Service Group	0.75	5.2	10.7
Average	0.73	5.1 %	10.6 % (4)
Middlesex Water Company	0.65	4.7 %	10.2 %

See page 3 for notes

<u>Middlesex Water Company</u>
Development of the Market-Required Rate of Return on Common Equity Using
the Capital Asset Pricing Model for the Proxy Group of Five AUS Utility Reports
Water Companies, the Proxy Group of Three Value Line (Standard Edition)
Water Companies and Middlesex Water Company
<u>Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return</u>

Notes:

(1)   From the three previous month-end (Jan. '04 -- Mar '05), as well as a recently available (Mar. 25, 2005),
       <u>Value Line Summary & Index</u>, a forecasted 3-5 year total annual market return of 11 0% 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 <u>Value Line</u> average forecasted annual dividend yield

       The 3-5 year average total market appreciation of 43% produces a four-year average annual
       return of 9 35% ($(1.43^{25}) - 1$) When the average annual forecasted dividend yield of 1 60% is added, a
       total average market return of 10 95%, rounded to 11 0%, (1.60% + 9 35%) is derived

       The 3-month and spot forecasted total market return of 11 0% minus the risk-free rate of 5 5%
       (developed in Note 2) is 5.5% (11 0% - 5 5%) The Ibbotson Associates calculated market premium of
       7 2% for the period 1926-2004 results from a total market return of 12 4% less the average income
       return on long-term U.S. Government Securities of 5 2% (12.4% - 5 2% = 7.2%) This is then averaged
       with the 5 5% <u>Value Line</u> market premium resulting in a 6 35%, rounded to 6 4%, market premium The
       6 4% market premium is then multiplied by the beta in column 1 of page 2 of this Schedule

(2)   Average forecast based upon six quarterly estimates of 20-year Treasury Bond yields per the consensus
       of nearly 50 economists reported in the <u>Blue Chip Financial Forecasts</u> dated April 1, 2005 (see page 7 of
       Schedule PMA-14) The estimates are detailed below:

	20-Year Treasury Bond Yield
Second Quarter 2005	5 1%
Third Quarter 2005	5 3
Fourth Quarter 2005	5 5
First Quarter 2006	5.6
Second Quarter 2006	5 7
Third Quarter 2006	<u>5.7</u>
Average	<u>5.5%</u>

(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)   Includes only those indicated common equity cost rates which are above 8 6%, i e , 200 basis points
       above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Schedule
       PMA-14)

(5)   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: <u>Value Line Summary & Index</u>
                         <u>Blue Chip Financial Forecasts</u>, April 1, 2005
                         <u>Value Line Investment Survey</u>, January 28, 2005 Standard Edition and Small and Mid-Cap
                             Edition
                         <u>Stocks, Bonds, Bills and Inflation – 2005 Yearbook Valuation Edition</u>, Ibbotson Associates,
                             Chicago, IL, 2005

Midwest Water Company
Comparable Earnings Analysis
for a Proxy Group of One Hundred and Two Non-Utility Companies Comparable to the Proxy Group of Five AUS Utility Reports Water Companies (1)

The table lists the Proxy Group of One Hundred and Two Non-Utility Companies Comparable to the Proxy Group of the AUS Utility Reports Water Companies (1), with columns for: Adj. Beta, Unadj. Beta, Standard Deviation of Beta, Standard Error of the Regression, Rate of Return on Net Worth (1999, 2000, 2001, 2002, 2003), 5-Year Average (Percent, Student's T-Test), and 5-Year Projected (Percent, Student's T-Test).

Company names listed (first column):

- 21st Century Ins. Group
- ABM Industries Inc.
- Abbott Labs.
- Admt Technystem
- Allied Capital Corp.
- Amerada Hess
- AmeriSourceBergen
- Amresco Mortgage Mgmt.
- Archer Daniels Midl'd
- Arrow Int'l
- Ball Corp.
- Bard (C.R.)
- Bemis Group
- Beckman Coulter
- Becton Dickinson
- Berry Petroleum 'A'
- Bunnet
- BMN Inc.
- Bob Evans Farms
- C.H. Robinson
- CLARCOR Inc.
- Casey's Gen'l Stores
- Church & Dwight
- Clorox Co.
- Coca-Cola
- Coca-Cola Bottling
- ConAgra Foods
- Constellation Brands
- Cooper Cos.
- Corn Products Int'l
- Curtiss-Wright
- Dean Foods
- Dentsply Int'l
- Diebold Corp.
- ESCO Technologies
- Family Dollar
- Fortune Brands
- Franklin Electric
- Gardner Denver
- Gen'l Dynamics
- Gorman
- Golden West Finl
- HCA Inc.
- HON Industries Inc.
- Harland (John H.)
- Int'l Flavors & Frag.
- Int'l Speedway 'A'
- Invacare Corp.
- Kellogg
- Kimball Int'l 'B'
- Lancaster Colony
- Lance Inc.
- Lawson Products
- Lincoln Elec Hdgs.
- Lockheed Martin
- Marathon Oil Corp.
- Mattel Inc.
- Medtronic Inc.

Exhibit P-7
Schedule PMA-16
Page 2 of 8

Middlesex Water Company
Comparable Earnings Analysis
for a Proxy Group of One-Hundred and Two Non-Utility Companies Comparable to the Proxy Group of Five AUS Utility Reports Water Companies (1)

Proxy Group of One-Hundred and Two Non-Utility Companies Comparable to the Proxy Group of Five AUS Utility Reports Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Deviation of Beta	Standard Error of the Regression	Rate of Return on Net Worth								
					1999	2000	2001	2002	2003	5-year Average (2)		5-Year Projected (3)	
										Percent	Student's T-Test	Percent	Student's T-Test
Murphy Oil Corp.	0.85	0.75	0.1040	3.9141	8.4	24.3	17.0	8.4	13.1	14.2	(0.42)	8.5	(0.00)
Newell Rubbermaid	0.65	0.74	0.1052	3.8824	17.3	10.5	13.1	20.5	20.2	17.8	(0.09)	22.0	0.44
Northrop Grumman	0.65	0.59	0.0987	3.7150	14.0	15.9	5.5	4.0	4.0	9.2	(0.00)	10.0	(0.75)
Occidental Petroleum	0.65	0.70	0.0885	3.2588	7.3	27.8	23.0	16.2	20.3	18.9	0.01	15.5	(0.21)
Pactiv Corp.	0.85	0.70	0.0995	3.7478	7.1	8.3	8.8	24.5	21.7	14.5	(0.39)	17.0	(0.06)
Papa John's Int'l	0.75	0.55	0.1030	3.8704	17.4	28.5	24.2	30.4	23.0	20.3	0.65	17.0	(0.05)
Patterson Dental	0.65	0.43	0.1108	4.1830	10.5	18.7	10.5	18.4	10.0	10.7	(0.02)	15.0	(0.26)
PepsiAmericas Inc.	0.75	0.50	0.0840	3.5877	8.2	5.0	8.3	9.4	8.8	7.5	(1.01)	10.5	(0.70)
Procter & Gamble	0.55	0.26	0.1003	4.0024	34.4	34.4	30.6	30.8	35.4	35.5	1.47	27.5	0.00
Protective Life	0.60	0.70	0.0884	3.3266	17.7	12.3	10.1	10.0	8.8	12.0	(0.01)-	11.0	(0.65)
Quaker Chemical	0.60	0.67	0.1033	3.6505	10.0	20.2	10.8	18.2	13.2	17.1	(0.10)	8.5	(0.80)
Ralcorp Holdings	0.55	0.31	0.0870	3.3059	11.2	10.9	8.9	12.3	13.0	11.4	(0.06)	12.0	(0.55)
Renal Care Group	0.60	0.38	0.1009	3.7075	16.0	15.9	15.0	17.0	10.5	18.0	(0.20)	10.5	0.10
Republic Services	0.70	0.64	0.1001	3.9862	13.8	13.4	12.1	12.8	11.3	12.6	(0.50)	14.5	(0.31)
Ruddick Corp.	0.65	0.75	0.0971	3.6577	11.4	10.8	10.8	12.3	12.1	11.5	(0.55)	13.0	(0.46)
Ryan's Family	0.80	0.85	0.1080	4.0853	14.7	14.9	14.2	15.7	14.0	14.7	(0.37)	11.0	(0.65)
SLM Corporation	0.75	0.50	0.0900	3.3902	47.9	34.0	37.3	31.9	33.3	37.0	1.60	29.5	0.08
Sara Lee Corp.	0.60	0.37	0.0853	3.2404	80.3	92.0	99.9	63.8	59.1	80.8 (4)	5.48	32.5	1.40
Schulman (A.)	0.85	0.71	0.1114	4.1834	13.4	11.7	3.9	9.0	4.2	8.4	(0.03)	8.0	(0.85)
Selective Ins. Group	0.85	0.73	0.0872	3.6580	9.4	4.0	4.5	8.1	7.7	6.5	(1.10)	12.5	(0.50)
Sensient Techn.	0.80	0.84	0.0842	3.5476	10.6	16.7	15.1	16.2	13.4	10.0	(0.26)	12.0	(0.55)
ServiceMaster Co.	0.75	0.50	0.0807	3.0403	18.0	15.9	9.4	14.0	10.4	15.5	(0.30)	10.5	0.10
Sigma-Aldrich	0.80	0.68	0.0810	3.4405	11.8	18.2	17.4	14.0	10.3	15.0	(0.27)	14.5	(0.31)
Smucker (J.M.)	0.65	0.40	0.0881	3.6810	11.4	13.4	12.2	9.3	10.0	11.3	(0.07)	10.0	(0.75)
Sonic Corp.	0.70	0.54	0.1069	4.0745	18.3	21.0	18.4	20.7	18.7	10.8	0.08	15.0	(0.25)
St. Jude Medical	0.85	0.76	0.1079	4.0531	18.1	10.0	17.2	17.5	21.2	10.1	(0.07)	17.0	(0.05)
Standex Int'l	0.80	0.89	0.0959	3.8004	10.0	10.5	14.5	11.4	11.1	14.0	(0.35)	10.5	0.09
Starbucks Corp.	0.80	0.60	0.1109	4.1642	10.0	11.0	13.2	12.6	12.9	12.2	(0.59)	17.0	(0.06)
Steak n Shake	0.75	0.80	0.1100	4.1630	14.0	14.7	13.1	13.0	12.9	13.8	(0.45)	17.0	(0.06)
Stryker Corp.	0.70	0.53	0.0820	3.0128	23.9	25.9	25.7	23.8	21.0	24.1	0.40	20.5	0.80
Sysco Corp.	0.80	0.65	0.0905	3.4073	25.4	25.6	27.0	31.9	35.4	29.3	0.02	20.5	1.00
Tecumseh Products 'A'	0.80	0.68	0.1005	3.7838	13.1	8.0	4.4	5.5	3.8	6.7	(1.00)	10.0	(0.75)
Tennant Co.	0.60	0.67	0.0950	3.5757	17.7	18.2	3.1	8.0	8.5	11.1	(0.69)	12.0	(0.55)
Thomas Inds.	0.75	0.59	0.0989	3.7628	12.5	13.5	11.0	10.4	8.4	11.5	(0.85)	8.5	(1.10)
Thornburg Mtg.	0.70	0.53	0.0933	3.5147	8.2	9.2	11.0	14.4	14.2	11.4	(0.00)	14.0	(0.30)
UnitedHealth Group	0.65	0.44	0.1045	3.8340	14.5	10.1	23.5	30.5	35.0	24.7	0.51	30.0	1.23
Universal Corp.	0.70	0.47	0.0893	3.3252	23.8	23.7	21.4	18.1	18.3	21.0	0.19	17.0	(0.05)
Varian Medical Sys.	0.80	0.80	0.1053	3.8547	4.5	10.6	17.2	18.8	23.2	16.9	(0.18)	34.0	1.62
WD-40 Co.	0.75	0.50	0.1050	4.1031	30.3	38.9	30.6	30.5	27.9	33.4	1.28	22.0	0.44
Walgreen Co.	0.80	0.65	0.0944	3.5554	17.0	17.0	16.7	16.3	18.1	17.0	(0.17)	17.0	(0.09)
Wendy's Int'l	0.75	0.56	0.1053	3.9040	15.0	10.1	18.0	15.1	13.4	15.0	(0.27)	14.5	(0.31)
West Pharmac. Svcs.	0.70	0.51	0.0981	3.8171	15.7	8.3	11.0	8.4	10.0	10.0	(0.73)	12.5	(0.50)
Average for the Non-Utility Group	0.75	0.59	0.0898	3.7414									
Average for the Proxy Group of Five AUS Utility Reports Water Companies	0.60	0.40	0.1017	3.7247 (5)									
Mean										17.4%		18.4%	
Conclusion (6)											17.9% (6)		
Conservative Mean (7)										14.0%		14.8%	
Conservative Conclusion (8)											14.4% (8)		

See pages 6 and 7 for notes.

Midwest Water Company
Comparable Earnings Analysis
for a Proxy Group of Ninety Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies [8]

Proxy Group of Ninety Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies [8]	Adj. Beta	Unadj. Beta	Standard Deviation of Beta	Standard Error of the Regression	1999	2000	2001	2002	2003	Rate of Return on Net Worth 5-Year Average [2] Percent	Student's T-Test	5-Year Projected [3] Percent	Student's T-Test
ABM Industries Inc.	0.60	0.60	0.0070	3.0737	13.7	12.5	12.1	9.4	9.5	11.2	(0.65)	14.0	(0.30)

Kidder/n Water Company
Comparable Earnings Analysis
for a Proxy Group of Ninety Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies [0]

Proxy Group of Ninety Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies [0]	Adj. Beta	Unadj. Beta	Standard Deviation of Beta	Standard Error of the Regression	Rate of Return on Net Worth					5-year Average [2]		5-Year Projected [3]	
					1998	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
Papa John's Int'l	0.75	0.55	0.1030	3.0784	17.4	20.5	24.2	38.4	21.0	20.3	0.50	17.0	(0.07)
People's Bank	0.65	0.71	0.0837	3.1527	14.3	12.3	2.0	6.0	0.4	6.3	(0.00)	10.5	(0.08)
PepsiAmericas Inc.	0.75	0.50	0.0946	3.5077	0.2	5.8	0.3	8.4	0.0	7.5	(0.93)	10.5	(0.08)
Pfizer Inc.	0.80	0.67	0.0840	3.1614	30.2	40.4	45.0	47.0	18.5	38.3	1.57	22.0	0.41
Pitney Bowes	0.90	0.83	0.0692	3.2447	28.7	48.8	62.4	67.0	52.3	53.8 [4]	2.84	34.5	1.02
Protective Life	0.90	0.70	0.0884	3.2260	17.7	12.3	10.1	10.0	0.8	12.0	(0.59)	11.0	(0.04)
Quaker Chemical	0.80	0.67	0.1003	3.0605	10.0	20.2	10.8	10.2	13.2	17.1	(0.10)	0.5	(0.70)
RLI Corp.	0.75	0.50	0.0810	3.0733	10.7	8.8	9.0	0.4	10.0	0.5	(0.70)	11.5	(0.00)
Ralcorp Holdings	0.55	0.31	0.0070	3.2000	11.2	10.8	0.0	12.3	13.0	11.4	(0.03)	12.0	(0.59)
Reinsurance Group	0.80	0.61	0.0097	3.7543	7.2	12.3	4.0	10.5	0.5	6.9	(0.07)	11.0	(0.04)
Renal Care Group	0.80	0.28	0.1006	3.7075	10.8	15.0	15.0	17.0	18.5	10.0	(0.20)	10.5	0.17
Reynolds & Reynolds	0.80	0.69	0.1043	3.0253	20.0	22.5	20.8	25.4	20.0	24.3	0.43	23.5	0.50
Ruddick Corp.	0.65	0.75	0.0971	3.0677	11.4	10.8	10.8	12.3	12.1	11.5	(0.02)	13.0	(0.45)
SLM Corporation	0.75	0.58	0.0868	3.3502	47.0	34.8	37.3	31.0	33.3	37.0	1.47	28.5	0.85
Sara Lee Corp.	0.60	0.37	0.0803	3.2464	86.3	82.0	88.0	88.8	58.1	88.0 [4]	5.04	32.5	1.42
Selective Ins. Group	0.85	0.73	0.0072	3.0580	0.4	4.0	4.8	0.1	7.7	0.5	(1.03)	12.5	(0.50)
Stanford Techn.	0.80	0.04	0.0042	3.5470	10.0	16.7	15.1	10.2	13.4	10.0	(0.25)	12.0	(0.55)
ServiceMaster Co.	0.75	0.59	0.0907	3.6403	18.0	15.9	0.4	14.0	18.3	15.5	(0.20)	10.5	0.17
Sigma-Aldrich	0.60	0.08	0.0910	3.4405	11.8	10.2	17.4	14.0	10.0	15.0	(0.26)	14.5	(0.31)
Smucker (J.M.)	0.85	0.40	0.0881	3.0016	11.4	13.4	12.2	0.3	11.0	11.3	(0.34)	10.0	(0.74)
Standex Int'l	0.80	0.60	0.0960	3.0034	10.0	10.5	14.5	11.4	11.1	14.0	(0.24)	10.5	0.06
Stryker Corp.	0.70	0.53	0.0905	3.0126	23.0	25.0	25.7	21.6	21.0	24.1	0.41	20.5	0.85
Sysco Corp.	0.80	0.65	0.0005	3.4073	25.4	26.8	77.8	31.0	35.4	20.3	0.84	20.5	1.04
Tecumseh Products 'A'	0.80	0.60	0.1005	3.7039	13.1	0.0	4.4	5.6	3.0	0.7	(1.02)	10.0	(0.74)
Tennant Co.	0.80	0.67	0.0850	3.5757	17.7	18.2	3.1	8.0	0.5	11.1	(0.60)	12.0	(0.55)
Thomas Indtr.	0.75	0.58	0.0809	3.7070	12.5	13.5	11.0	0.4	0.4	11.5	(0.62)	0.5	(1.00)
Thornburg Mtg.	0.70	0.53	0.0933	3.5147	0.2	0.2	11.0	14.4	14.2	11.4	(0.01)	14.0	(0.20)
Toro Co.	0.85	0.75	0.0834	3.1410	12.9	14.3	14.0	17.4	18.5	15.5	(0.10)	27.0	0.00
UnitedHealth Group	0.85	0.44	0.1045	3.0040	14.0	18.1	21.5	30.5	35.0	24.7	0.40	30.0	1.10
Universal Corp.	0.70	0.47	0.0883	3.3752	23.0	23.7	21.4	18.1	10.0	21.0	0.18	17.0	(0.07)
Unocal Corp.	0.80	0.76	0.0848	3.1010	5.2	23.0	10.2	10.0	10.0	15.4	(0.30)	10.0	(0.16)
Valspar Corp.	0.85	0.62	0.0880	3.3402	20.0	10.8	11.3	18.3	12.0	10.2	(0.24)	12.5	(0.50)
Wal-Mart Stores	0.80	0.77	0.0840	3.1003	22.1	20.1	18.1	20.4	20.3	20.4	0.11	25.5	0.76
Walgreen Co.	0.80	0.65	0.0844	3.5554	17.0	17.0	18.7	10.0	10.1	17.0	(0.17)	17.0	(0.07)
West Pharmac. Svcs.	0.70	0.51	0.0801	3.1071	15.7	8.3	11.8	0.4	10.0	10.3	(0.70)	12.5	(0.50)
Average for the Non-Utility Group	**0.77**	**0.62**	**0.0940**	**3.5301**									

	Adj. Beta	Unadj. Beta	Standard Deviation of Beta	Standard Error of the Regression						5-year Average		5-Year Projected	
Average for the Proxy Group of Three Value Line (Standard Edition) Water Companies	0.73	0.55	0.0930	3.5004 (10)									
Mean										17.0%		18.5%	
Conclusion (6)										18.0% (6)			
Conservative Mean (7)										14.7%		14.0%	
Conservative Conclusion (8)										14.4% (8)			

See pages 6 and 7 for notes.

Middlesex Water Company
Comparable Earnings Analysis
for a Proxy Group of Fifty-Six Non-Utility Companies Comparable to
Middlesex Water Company (1)

Proxy Group of Fifty-Six Non-Utility Companies Comparable to Middlesex Water Company (11)	Adj. Beta	Unad. Beta	Standard Deviation of Beta	Standard Error of the Regression	Rate of Return on Net Worth 1999	2000	2001	2002	2003	5-Year Average (?) Percent	Student's T-test	5-Year Projected (?) Percent	Student's T-test
Abbott Labs.	0.80	0.94	0.0072	3.0508	34.7	32.5	32.5	30.4	20.0	31.3	0.76	27.5	1.10
Aburto Culver "B"	0.70	0.40	0.0753	2.6342	15.2	15.3	15.0	10.0	16.1	15.4	(0.14)	14.5	(0.42)
Astistrus-Bunch	0.60	0.32	0.0770	2.0021	35.6	37.6	42.0	63.4	76.0	51.1	2.16	35.5	2.50
Amalg Mortgage Mgmt.	0.65	0.47	0.0840	3.5301	17.8	12.2	13.6	20.3	15.7	15.0	(0.20)	14.0	(0.49)
Archer Daniels Midd	0.70	0.53	0.0025	3.4624	4.5	4.9	6.1	6.6	0.2	5.7	(1.02)	10.0	(1.04)
Arrow Int'l	0.60	0.35	0.0724	3.4778	16.8	17.0	11.3	13.1	13.3	14.7	(0.20)	15.0	(0.35)
Banta Corp.	0.75	0.60	0.0757	2.6500	15.4	16.6	14.2	13.2	12.2	14.2	(0.42)	14.0	(0.49)
Bard (C.R.)	0.75	0.50	0.0050	2.5753	20.9	20.4	18.2	20.1	19.5	19.7	(0.04)	23.0	0.70
Becton Dickinson	0.70	0.60	0.0844	3.5550	21.6	20.1	18.8	19.3	19.0	19.8	(0.02)	22.0	0.35
Capital Fed. Finl	0.75	0.52	0.0764	2.0521	4.1	7.7	7.4	9.1	5.3	6.7	(0.05)	19.0	(1.04)
Chelsea Development	0.75	0.60	0.0750	2.0231	11.0	10.2	22.3	10.0	15.4	10.3	(0.27)	20.9	0.42
Coca-Cola	0.60	0.35	0.0920	3.4070	34.0	30.4	35.0	34.7	34.0	35.4	1.07	33.5	2.22
ConAgra Foods	0.70	0.47	0.0603	3.2912	23.0	27.0	17.1	18.2	18.2	20.0	0.05	10.0	0.07
Corn Products Int'l	0.80	0.66	0.0651	3.5055	7.5	6.4	6.7	7.9	6.3	7.3	(0.01)	11.0	(0.09)
Crescent Real Est.	0.80	0.66	0.0751	2.8270	5.5	0.0	7.0	15.3	15.2	0.0	(0.71)	14.6	(0.42)
Cutle-Witpt	0.70	0.40	0.0604	3.0307	12.3	13.1	11.0	10.1	10.8	11.0	(0.61)	12.0	(0.78)
Dean Foods	0.65	0.43	0.0603	3.5241	20.5	20.1	8.5	17.0	12.0	15.7	(0.32)	10.5	(0.77)
Dentsply Int'l	0.75	0.50	0.0602	3.2454	10.2	10.4	10.0	17.5	15.4	17.0	(0.19)	12.5	(0.07)
Gen'l Dynamics	0.80	0.60	0.0604	3.0009	22.5	23.0	20.8	20.2	10.7	20.8	0.04	15.0	(0.35)
Healthcare Rlty Trust	0.70	0.48	0.0763	2.0703	8.1	8.4	0.5	0.0	0.2	8.8	(0.00)	0.5	(1.11)
Hershey Foods	0.60	0.20	0.0040	2.8040	20.0	28.1	32.0	31.8	37.1	31.4	0.70	32.5	2.00
Hillenbrand Inds.	0.75	0.60	0.0038	3.1534	17.7	10.7	17.7	18.0	21.1	10.0	(0.08)	10.5	(0.14)
Hormel Foods	0.65	0.45	0.0702	2.0437	10.0	10.5	16.3	17.0	14.0	17.7	(0.10)	10.5	(0.14)
Int'l Flavors & Frag.	0.75	0.55	0.0706	3.0591	22.0	23.7	25.8	32.0	20.0	20.1	0.42	18.5	0.14
Johnson & Johnson	0.65	0.41	0.0060	3.0030	20.0	25.5	24.3	30.0	30.1	27.2	0.40	23.0	0.26
Kellogg	0.55	0.31	0.0060	3.3407	74.5	72.6	51.1	70.4	54.5	66.4	3.29	27.5	1.39
Kraft Foods	0.85	0.40	0.0802	3.0231	13.0	14.2	0.0	13.0	12.1	12.2	(0.50)	11.0	(0.00)
Lancaster Colony	0.70	0.44	0.0820	3.4023	22.9	24.0	18.0	19.6	10.1	20.0	(0.01)	15.5	(0.29)
Lawson Products	0.65	0.45	0.0072	3.0597	15.0	10.3	0.7	7.7	0.7	11.7	(0.00)	14.5	(0.42)
Matthews Int'l	0.65	0.45	0.0031	3.5042	21.0	22.0	21.0	21.1	17.5	20.7	0.04	15.0	(0.35)
McClatchy Co.	0.50	0.18	0.0770	2.8500	9.4	9.3	6.3	6.3	11.0	9.0	(0.72)	10.5	(0.07)
McCormick & Co.	0.75	0.60	0.0700	2.9087	31.0	10.3	33.3	30.4	20.4	32.0	0.03	22.5	0.09
McGraw-Hd	0.75	0.44	0.0013	3.0101	23.7	26.2	25.9	20.0	24.0	25.4	0.37	25.0	1.04
New Plan Excel Rlty	0.65	0.59	0.0840	3.0537	0.2	7.0	0.3	0.4	8.1	6.0	(0.06)	12.5	(0.09)
Pepy&Americas Inc.	0.75	0.41	0.0705	3.5677	0.2	5.8	0.3	0.6	0.6	7.5	(0.60)	10.5	(0.07)
PepsiCo Inc.	0.65	0.41	0.0840	2.8046	20.8	30.1	24.0	37.7	33.0	31.8	0.82	33.0	2.01
Pfizer Inc.	0.80	0.67	0.0340	1.1014	38.2	40.4	45.0	47.0	10.5	28.3	1.27	22.0	0.03
Plum Creek Timber	0.80	0.03	0.0752	2.6370	17.4	10.8	0.2	10.5	0.7	12.7	(0.52)	10.5	(0.14)
Popular Inc.	0.75	0.81	0.0760	2.6541	14.2	13.8	13.4	14.0	17.1	14.0	(0.30)	15.5	(0.28)
PotLatch Inc.	0.75	0.00	0.0818	2.8037	2.0	4.4	1.3	4.3	5.0	3.7	(1.16)	0.5	(1.52)
RLI Corp.	0.55	0.34	0.0676	3.0733	10.7	0.9	0.0	0.4	10.0	9.5	(0.75)	11.5	(0.83)
Raboco Holdings	0.55	0.31	0.3050	3.1050	11.2	10.0	0.0	12.3	13.0	11.4	(0.52)	12.0	(0.70)
SLM Corporation	0.75	0.58	0.0000	3.3002	47.0	34.0	37.3	31.8	33.3	37.0	1.10	20.5	1.25
Sara Lee Corp.	0.60	0.37	0.0633	3.2484	80.3	62.0	90.0	63.8	50.1	60.0	4.25	32.5	2.00
Sentient Techn.	0.60	0.04	0.0642	3.5470	18.0	16.7	15.1	10.2	13.4	18.0	(0.10)	12.0	(0.70)

Middlesex Water Company
Comparable Earnings Analysis
for a Proxy Group of Fifty-Six Non-Utility Companies Comparable to
Middlesex Water Company (11)

	Adj. Beta	Unadj. Beta	Standard Deviation of Beta	Standard Error of the Regression	1999	2000	2001	2002	2003	5-Year Average (2) Percent	5-Year Average (2) Student's T-Test	5-Year Projected (3) Percent	5-Year Projected (3) Student's T-Test
Proxy Group of Fifty-Six Non-Utility Companies Comparable to Middlesex Water Company (11)													
ServiceMaster Co.	0.75	0.59	0.0097	3.8403	16.0	15.0	9.4	14.0	10.4	16.5	(0.33)	16.9	0.28
Sigma-Aldrich	0.80	0.66	0.0816	3.4485	11.8	10.2	17.4	14.8	19.3	15.0	(0.30)	14.5	(0.42)
Stryker Corp.	0.70	0.53	0.0060	3.0128	23.0	25.0	25.7	23.8	21.0	24.1	0.27	20.5	1.25
Sysco Corp.	0.80	0.65	0.0085	3.4073	25.4	25.8	27.0	31.9	35.4	20.3	0.94	20.5	1.53
Tennant Co.	0.80	0.67	0.0950	3.5757	17.7	16.2	3.1	6.0	8.5	11.1	(0.04)	12.0	(0.70)
Thornburg Mtg.	0.70	0.53	0.0931	3.5147	8.2	0.2	11.0	14.4	14.2	11.4	(0.02)	14.0	(0.40)
Toctcs Rod Ind.	0.65	0.40	0.0766	2.6520	10.6	10.5	12.0	12.0	12.1	14.1	(0.43)	10.5	(0.07)
Universal Corp.	0.70	0.47	0.0063	3.2262	23.0	23.7	21.4	18.1	18.3	21.0	0.00	17.0	(0.07)
Walgreen Co.	0.80	0.55	0.0944	3.5554	17.8	17.0	10.7	18.3	10.1	17.0	(0.23)	17.0	(0.07)
West Markets	0.75	0.55	0.0769	3.0100	9.5	7.8	10.1	10.4	9.5	9.3	(0.77)	10.5	(0.97)
West Pharmac. Svcs.	0.70	0.51	0.0081	3.0171	15.7	8.3	11.8	6.4	10.0	10.0	(0.00)	12.5	(0.09)
Average for the Non-Utility Group	0.71	0.52	0.0808	3.2012									
Middlesex Water Company	0.65	0.42	0.0891	3.2401 (12)						17.0%		10.0%	
Mean											16.0% (6)		
Conclusion (6)													
Conservative Mean (7)										14.0%		13.0% (6)	
Conservative Conclusion (6)													

See pages 6 and 7 for notes.

Middlesex Water Company
Comparable Earnings Analysis

Notes: (1)   The criteria for selection of the proxy group of one-hundred and two non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007-2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of one-hundred and two non-utility companies was selected based upon the proxy group of five AUS Utility Reports water companies' unadjusted beta range of 0.17 - 0.79 and standard error of the regression range of 3.2336 – 4.2158. 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 2003.

(3)   2007-2009.

(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 mean historical and projected returns as fully explained in Ms. Ahern's testimony.

(5)   The standard deviation of the five AUS Utility Reports' standard error of the regression is 0.1637. 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

$$\text{Thus, } 0.1637 = \frac{3.7247}{\sqrt{518}} = \frac{3.7247}{22.7596}$$

(6)   Mid-point of the arithmetic mean of the historical five year average and five year projected rate of return on net worth.

(7)   Arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those 8.6% and below, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Schedule PMA-14.)

(8)   Mid-point of the arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those 8.6% and below, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Schedule PMA-14.)

(9)   The criteria for selection of the proxy group of ninety non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007-2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of ninety non-utility companies was selected based upon the proxy group of three Value Line (Standard Edition) water companies' unadjusted beta range of 0.27 - 0.83 and standard error of the regression range of 3.0390 – 3.9618 These ranges are based upon plus or minus three

Middlesex Water Company
Comparable Earnings Analysis

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.

(10)   The standard deviation of the proxy group of three Value Line (Standard Edition) water companies' standard error of the regression is 0 1538 (3.5004 / 22.7596).

(11)   The criteria for selection of the proxy group of fifty-six non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition)   The proxy group of fifty-six non-utility companies was selected based upon Middlesex Water Company's unadjusted beta range of 0.16 - 0.68 and standard error of the regression range of 2.8129 – 3.6673. 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

(12)   The standard deviation of the Middlesex Water Company' standard error of the regression is 0.1424 (3 2401 / 22 7596).

Source of Information: Value Line, Inc., March 15, 2005
Value Line Investment Survey (Standard Edition)

REGULATORY FINANCE:

UTILITIES' COST OF CAPITAL

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Chapter 8
DCF Applications and Comparable Groups

8.1 The Use of Comparable Groups

There are several reasons why the determination of cost of capital should not rest on a sample of one firm:

(1) **Consistency with the notions of fair and reasonable return prom-ulgated in the *Hope* and *Bluefield* cases.** The basic premise in determining a fair return is that the allowed return on equity should be commensurate with returns on investments in other firms with comparable risk, hence the need to extend the sample to firms of comparable risk. Moreover, the equity costs of other firms represent economic opportunity costs that have a direct impact on the cost of equity for the utility being studied.

(2) **Added reliability.** Confidence in the reliability of the estimate of equity cost can be enhanced by estimating the cost of equity capital for a variety of risk-equivalent companies. Such group comparisons not only act as a useful check on the magnitude of the cost of equity estimate obtained from a single company, but also mitigate any distortion introduced by measurement errors in the two components of equity return, namely dividend yield and growth. Utilizing a portfolio of similar companies along with the company-specific DCF acts to reduce the chance of either overestimating or underestimating the cost of equity for an individual company. By relying solely on a single-company DCF estimate or for that matter on a single methodology, a regulatory commission limits its flexibility and increases the risk of authorizing unreasonable rates of return. For example, in a large group of companies, positive and negative deviations from the expected growth will tend to cancel out owing to the law of large numbers, provided that the errors are independent.[1] The average growth

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[1] If $\bar{\sigma}_i^2$ represents the average variance of the errors in a group of N companies, and $\bar{\sigma}_{ij}$ the average covariance between the errors, then the variance of the error for the group of N companies, σ_N^2 is given by:

$$\sigma_N^2 = \frac{1}{N}\bar{\sigma}_i^2 + \frac{N-1}{N}\bar{\sigma}_{ij}$$

If the errors are independent, the covariance between them is zero, and the variance of the error for the group is reduced to:

$$\sigma_N^2 = \frac{1}{N}\sigma_i^2$$

As N gets progressively larger, the variance gets smaller and smaller.

rate of several comparable firms is less likely to diverge from expected growth than is the estimate of growth for a single firm. More generally, the assumptions of the DCF model are more likely to be fulfilled for a group of companies than for any single firm.

(3) **Abnormal conditions.** When there is reason to believe that the standard DCF model is inapplicable to a particular utility, or when a utility is experiencing extraordinary circumstances, the use of a benchmark group of companies is the only viable alternative to measure equity costs through the DCF method. Appropriate risk adjustments must, of course, be rendered. Such extraordinary circumstances would include a corporate restructuring, a major plant cancellation, or situations such as those of General Public Utilities following the Three Mile Island accident or of Washington Power Public Service following the default on its bonds.

(4) **Circularity problem.** Stock price, hence cost of equity capital, depends on investors' growth expectations, which in turn depend partially on investors' perception of the regulatory process. The net result is that the cost of equity depends in part on anticipated regulatory action, since both components of equity return—yield and growth—are influenced by the regulatory process. Carried to its extreme, this implies that regulation would in effect deliver whatever equity return investors expect.

This calls to mind Myers' (1972) reference to the gaming aspects of regulation. Suppose that a stock price is initially below book value, and that regulators announce that they will subscribe to the standard DCF method of measurement. Stock price will then rise, since investors expect a higher allowed return to come out of the rate hearing. But if the stock price rises, the regulators will underestimate the cost of equity if they assume that investors expect a continuation of historical growth. If investors in turn recognize the regulator's error in assessing their expectations, a complex circular game between investors and regulators ensues. Myers' solution to this predicament is to extend the sample to include several comparable risk firms. It is thus imperative to examine market data not related to the firm's financial statistics as a check on the standard DCF model. The circularity problem, to the extent that it exists, can be mitigated by referencing data on non-regulated companies as well as on other utilities.

By means of comprehensive actual case studies and by drawing on the material of previous DCF chapters, this chapter illustrates the implementation of DCF in actual practice, discusses the design of comparable risk groups, and presents solutions to special problems encountered in applying

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STANDARD & POOR'S

CORPORATE RATINGS CRITERIA

Dear Reader,

This volume updates the 1994 edition of
Corporate Finance Criteria. There are several
new chapters, covering our recently introduced
Bank Loan Ratings, criteria for "notching" junior
obligations, and the role of cyclicality in ratings.
Naturally, the ratio medians have been brought
up to date.

Standard & Poor's criteria publications represent
our endeavor to convey the thought processes and
methodologies employed in determining Standard
& Poor's ratings. They describe both
the quantitative and qualitative aspects of the
analysis. We believe that our rating product has
the most value if users appreciate all that has
gone into producing the letter symbols.

Bear in mind, though, that a rating is, in the end,
an opinion. The rating experience is as much an
art as it is a science.

Solomon B. Samson
Chairman, Corporate Ratings Criteria Committee

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STANDARD & POOR'S CORPORATE RATINGS CRITERIA

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.

Utilities credit analysis factors

Business risk
- Markets and service area economy
- Competitive position
- Operations
- Regulation
- Management
- Fuel, power, and water supply
- Asset concentration

Financial risk
- Earnings protection
- Capital structure
- Cash flow adequacy
- Financial flexibility/capital attraction

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 unemploy-

ment—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-

STANDARD & POOR'S CORPORATE RATINGS CRITERIA

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 bal-

ance 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 auger 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 experi-

ence. 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 effect 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

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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

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& 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/lease-back obligations), debt guarantees, receivables financing, and purchased-power contracts are all considered debt equivalents and are reflected as debt in calculating capital

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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.

Standard & Poor's

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Feature Article

New Business Profile Scores Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised

Standard & Poor's Ratings Services has assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. Standard & Poor's also has revised its published risk-adjusted financial guidelines. The new business scores and financial guidelines do not represent a change to Standard & Poor's ratings criteria or methodology, and no ratings changes are anticipated from the new business profile scores or revised financial guidelines.

New Business Profile Scores and Revised Financial Guidelines

Standard & Poor's has always monitored changes in the industry and altered its business risk assessments accordingly. This is the first time since the 10-point business pro-

file scale for U.S. investor-owned utilities was implemented that a comprehensive assessment of the benefits and the application of the methodology has been made. The principal purpose was to determine if the methodology continues to provide meaningful differentiation of business risk. The review indicated that while business profile scoring continues to provide analytical benefits, the complete range of the 10-point scale was not being utilized to the fullest extent.

Standard & Poor's has also revised the key financial guidelines that it uses as an integral part of evaluating the credit quality of U.S. utility and power companies. These guidelines were last updated in June 1999. The financial guidelines for three principal ratios (funds from operations (FFO) interest coverage, FFO to total debt, and total debt to total capital) have been broadened so as to be more flexible. Pretax interest cov-

Chart 1
Distribution of Business Profile Scores

New Business Profile Score

Chart 2
Transmission and Distribution—Water, Gas, and Electric

Business Profile Score

Feature Article

erage as a key credit ratio was eliminated.

Finally, Standard & Poor's has segmented the utility and power industry into sub-sectors based on the dominant corporate strategy that a company is pursuing. Standard & Poor's has published a new U.S. utility and power company ranking list that reflects these sub-sectors.

There are numerous benefits to the reassessment. Fuller utilization of the entire 10-point scale provides a superior relative ranking of qualitative business risk. A revision of the financial guidelines supports the goal of not causing rating changes from the recalibration of the business profiles. Classification of companies by sub-sectors will ensure greater comparability and consistency in ratings. The use of industry segmentation will also allow more in-depth statistical analysis of ratings distributions and rating changes.

The reassessment does not represent a change to Standard & Poor's criteria or methodology for determining ratings for utility and power companies. Each business profile score should be considered as the assignment of a new score; these scores do not represent improvement or deteri-

oration in our assessment of an individual company's business risk relative to the previously assigned score. The financial guidelines continue to be risk-adjusted based on historical utility and industrial medians. Segmentation into industry sub-sectors does not imply that specific company characteristics will not weigh heavily into the assignment of a company's business profile score.

Results

Previously, 83% of U.S. utility and power business profile scores fell between '3' and '6', which clearly does not reflect the risk differentiation that exists in the utility and power industry today. Since the 10-point scale was introduced, the industry has transformed into a much less homogenous industry, where the divergence of business risk—particularly regarding management, strategy, and degree of competitive market exposure—has created a much wider spectrum of risk profiles. Yet over the same period, business profile scores actually converged more tightly around a median score of '4'. The new business pro-

Chart 3
Transmission Only—Electric, Gas, and Other

% of companies

Business Profile Score

Chart 4
Integrated Electric, Gas, and Combination Utilities

% of companies

Business Profile Score

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file scores, as of June 2, are shown in Chart 1. The overall median business profile score is now '5'.

Table 1 contains the revised financial guidelines. It is important to emphasize that these metrics are only guidelines associated with expectations for various rating levels. Although credit ratio analysis is an important part of the ratings process, these three statistics are by no means the only critical financial measures that Standard & Poor's uses in its analytical process. We also analyze a wide array of financial ratios that do not have published guidelines for each rating category.

Again, ratings analysis is not driven solely by these financial ratios, nor has it ever been. In fact, the new financial guidelines that Standard & Poor's is incorporating for the specified rating categories reinforce the analytical framework whereby other factors can outweigh the achievement of otherwise acceptable financial ratios. These factors include:
- Effectiveness of liability and liquidity management;
- Analysis of internal funding sources;

- Return on invested capital;
- The execution record of stated business strategies;
- Accuracy of projected performance versus actual results, as well as the trend;
- Assessment of management's financial policies and attitude toward credit; and
- Corporate governance practices.

Charts 2 through 6 show business profile scores broken out by industry sub-sector. The five industry sub-sectors are:
- Transmission and distribution—Water, gas, and electric;
- Transmission only—Electric, gas, and other;
- Integrated electric, gas, and combination utilities;
- Diversified energy and diversified nonenergy; and
- Energy merchant/power developer/trading and marketing companies.

The average business profile scores for transmission and distribution companies and transmission-only companies are lower on the scale than the previous averages, while the average business profile scores for integrated utilities, diversified energy, and energy merchants and developers are higher.

Chart 5
Diversified Energy and Diversified Non-Energy

Business Profile Score

Chart 6
Energy Merchant/Developers/Trading and Marketing

Business Profile Scores

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See pages 16 to 19 for the company ranking list of business profile scores segmented by industry sub-sector and ranked in order of credit rating, outlook, business profile score, and relative strength.

Business Profile Score Methodology

Standard & Poor's methodology of determining corporate utility business risk is anchored in the assessment of certain specific characteristics that define the sector. We assign business profile scores to each of the rated companies in the utility and power sector on a 10-point scale, where '1' represents the lowest risk and '10' the highest risk. Business pro-

file scores are assigned to all rated utility and power companies, whether they are holding companies, subsidiaries, or stand-alone corporations. For operating subsidiaries and stand-alone companies, the score is a bottom-up assessment. Scores for families of companies are a composite of the operating subsidiaries' scores. The actual credit rating of a company is analyzed, in part, by comparing the business profile score with the risk-adjusted financial guidelines.

For most companies, business profile scores are assessed using five categories; specifically, regulation, markets, operations, competitiveness, and management. The emphasis placed on each category may be influenced by the

Table 1

Revised Financial Guidelines

Funds from operations/interest coverage (x)

Business Profile	AA		A		BBB		BB	
1	3	2.5	2.5	1.5	1.5	1		
2	4	3	3	2	2	1		
3	4.5	3.5	3.5	2.5	2.5	1.5	1.5	1
4	5	4.2	4.2	3.5	3.5	2.5	2.5	1.5
5	5.5	4.5	4.5	3.8	3.8	2.8	2.8	1.8
6	6	5.2	5.2	4.2	4.2	3	3	2
7	8	6.5	6.5	4.5	4.5	3.2	3.2	2.2
8	10	7.5	7.5	5.5	5.5	3.5	3.5	2.5
9			10	7	7	4	4	2.8
10			11	8	8	5	5	3

Funds from operation/total debt (%)

Business Profile	AA		A		BBB		BB	
1	20	15	15	10	10	5		
2	25	20	20	12	12	8		
3	30	25	25	15	15	10	10	5
4	35	28	28	20	20	12	12	8
5	40	30	30	22	22	15	15	10
6	45	35	35	28	28	18	18	12
7	55	45	45	30	30	20	20	15
8	70	55	55	40	40	25	25	15
9			65	45	45	30	30	20
10			70	55	55	40	40	25

Total debt/total capital (%)

Business Profile	AA		A		BBB		BB	
1	48	55	55	60	60	70		
2	45	52	52	58	58	68		
3	42	50	50	55	55	65	65	70
4	38	45	45	52	52	62	62	68
5	35	42	42	50	50	60	60	65
6	32	40	40	48	48	58	58	62
7	30	38	38	45	45	55	55	60
8	25	35	35	42	42	52	52	58
9			32	40	40	50	50	55
10			25	35	35	48	48	52

Feature Article

dominant strategy of the company or other factors. For example, for a regulated transmission and distribution company, regulation may account for 30% to 40% of the business profile score because regulation can be the single-most important credit driver for this type of company. Conversely, competition, which may not exist for a transmission and distribution company, would provide a much lower proportion (e.g., 5% to 15%) of the business profile score.

For certain types of companies, such as power generators, power developers, oil and gas exploration and production companies, or nonenergy-related holdings, where these five components may not be appropriate, Standard & Poor's will use other, more appropriate methodologies. Some of these companies are assigned business profile scores that are useful only for relative ranking purposes.

As noted above, the business profile score for a parent or holding company is a composite of the business profile scores of its individual subsidiary companies. Again, Standard & Poor's does not apply rigid guidelines for deter-

mining the proportion or weighting that each subsidiary represents in the overall business profile score. Instead, it is determined based on a number of factors. Standard & Poor's will analyze each subsidiary's contribution to FFO, forecast capital expenditures, liquidity requirements, and other parameters, including the extent to which one subsidiary has higher growth. The weighting is determined case-by-case. ■

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	2003	2002	2001 (MILLIONS OF DOLLARS)	2000	1999	
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$111.856	$89.241	$89.146	$85.213	$75.740	
SHORT-TERM DEBT	1.098	11.505	5.250	5.700	2.500	
TOTAL-CAPITAL EMPLOYED	$112.954	$100.746	$94.396	$90.913	$78.240	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.63 %	7.01 %	7.83 %	7.94 %	8.13 %	
PREFERRED DEBT	0.00	5.38	5.50	5.50	5.50	
						5 YEAR AVERAGE
DIVIDEND PAYOUT RATIO	22.86 %	102.61 %	135.34 %	0.00 %	90.77 %	70.32 %
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	49.87 %	47.96 %	48.03 %	46.92 %	49.37 %	48.43 %
PREFERRED STOCK	0.34	0.43	0.45	0.47	0.53	0.44
COMMON EQUITY	49.79	51.61	51.52	52.61	50.10	51.13
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	50.36 %	53.91 %	50.92 %	50.24 %	50.98 %	51.28 %
MINORITY INTEREST	0.34	0.38	0.42	0.44	0.51	0.42
COMMON EQUITY	49.30	45.71	48.66	49.32	48.51	48.30
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
RATE OF RETURN ON AVERAGE COMMON EQUITY	9.38 %	10.79 %	9.37 %	9.13 %	10.23 %	9.78 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE(2)	3.99 x	4.18 x	3.60 x	4.06 x	3.41 x	3.85 x
FUNDS FROM OPERATIONS / TOTAL DEBT(3)	19.41 %	21.00 %	19.83 %	22.80 %	19.39 %	20.49 %
TOTAL DEBT / TOTAL CAPITAL	50.36 %	53.91 %	50.92 %	50.24 %	50.98 %	51.28 %

SEE PAGE 2 FOR NOTES.

Aqua Illinois, Inc.
Capitalization and Financial Statistics
1999-2003, Inclusive

Notes:

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

(2) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(3) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Source of Information: Aqua Illinois, Inc. and Consumers Illinois Water Company Annual Reports to the Illinois Commerce Commission

PROXY GROUP OF SIX C. A. TURNER WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001	2000	1999	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$470.63	$407.79	$375.00	$331.41	$292.07	
SHORT-TERM DEBT	$32.07	$35.13	$30.67	$26.75	$24.88	
TOTAL CAPITAL EMPLOYED	$502.69	$442.92	$405.67	$358.16	$316.95	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.02 %	6.27 %	6.84 %	7.42 %	7.64 %	
PREFERRED STOCK	3.98	5.73	5.31	5.20	5.40	
						5 YEAR
						AVERAGE
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.07 %	54.19 %	54.26 %	52.09 %	51.27 %	53.18 %
PREFERRED STOCK	0.49	0.57	0.76	0.88	0.98	0.74
COMMON EQUITY	45.44	45.24	44.98	47.03	47.75	46.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %
PREFERRED STOCK	0.47	0.52	0.70	0.84	0.93	0.69
COMMON EQUITY	42.26	42.29	41.66	44.27	44.95	43.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.85 %	4.90 %	4.92 %	5.33 %	5.25 %	4.85 %
MARKET / AVERAGE BOOK RATIO	232.50	221.41	215.22	191.35	204.41	212.98
DIVIDEND YIELD	3.28	3.63	3.81	4.26	4.02	3.80
DIVIDEND PAYOUT RATIO	87.80	74.83	79.40	83.28	75.53	80.17
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.97 %	10.58 %	10.35 %	10.09 %	10.82 %	10.16 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.38 x	3.37 x	3.27 x	3.10 x	3.20 x	3.26 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	13.57 %	14.00 %	14.07 %	14.60 %	15.57 %	14.36 %
TOTAL DEBT / TOTAL CAPITAL	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %

See Page 2 for notes.

Proxy Group of Six C. A. Turner Water Companies
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) 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 C. A. Turner Public Utility Reports (December 2004); 2) which have Value Line (Standard Edition) five-year EPS growth rate projections or Thomson FN / First Call consensus five-year EPS growth rate projections; and 3) which have more than 70% of their 2003 operating revenues derived from water operations.

      The following six water companies met the above criteria:

          American States Water Co.
          Aqua America, Inc.
          Artesian Resources, Inc.
          California Water Service Group
          Middlesex Water Company
          York Water Co.

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

Capital Structure Based upon Total Capital for
the Proxy Group of Six C. A. Turner Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Artesian Resources Corp.						
Long-Term Debt	54.83 %	53.82 %	49.44 %	58.71 %	46.49 %	52.66 %
Short-Term Debt	9.39	3.24	16.68	3.65	10.69	8.73
Preferred Stock	0.00	0.17	0.56	0.76	1.00	0.50
Common Equity	35.78	42.77	33.32	36.88	41.82	38.11
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	50.57 %	47.29 %	49.70 %	50.48 %	51.88 %	49.98 %
Short-Term Debt	6.42	9.47	7.43	3.71	1.26	5.66
Preferred Stock	2.09	2.18	2.28	2.49	2.55	2.32
Common Equity	40.92	41.06	40.59	43.32	44.31	42.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	41.40 %	45.00 %	46.35 %	48.29 %	50.41 %	46.29 %
Short-Term Debt	9.07	3.77	2.83	3.90	2.20	4.35
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	49.53	51.23	50.82	47.81	47.39	49.36
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Six C. A. Turner Water Companies						
Long-Term Debt	50.22 %	50.60 %	50.04 %	49.14 %	48.21 %	49.64 %
Short-Term Debt	7.05	6.59	7.60	5.75	5.91	6.58
Preferred Stock	0.47	0.52	0.70	0.84	0.93	0.69
Common Equity	42.26	42.29	41.66	44.27	44.95	43.09
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

PROXY GROUP OF THREE VALUE LINE (STANDARD EDITION) WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$812.16	$697.46	$643.70	$560.38	$487.73	
SHORT-TERM DEBT	$52.97	$62.16	$50.56	$49.53	$45.89	
TOTAL CAPITAL EMPLOYED	$865.13	$759.62	$694.26	$609.91	$533.62	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	6.04 %	6.66 %	7.44 %	8.00 %	
PREFERRED STOCK	2.83	3.84	4.03	3.76	3.90	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.78 %	56.84 %	54.95 %	49.65 %	50.50 %	53.34 %
PREFERRED STOCK	0.24	0.28	0.47	0.63	0.72	0.47
COMMON EQUITY	44.98	42.88	44.58	49.72	48.78	46.19
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %
PREFERRED STOCK	0.24	0.25	0.44	0.59	0.68	0.44
COMMON EQUITY	42.45	39.57	41.75	45.88	45.39	43.01
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.89 %	5.17 %	4.70 %	5.47 %	5.00 %	4.85 %
MARKET / AVERAGE BOOK RATIO	225.26	217.33	225.22	206.93	221.95	219.34
DIVIDEND YIELD	3.32	3.63	3.61	3.77	3.65	3.60
DIVIDEND PAYOUT RATIO	86.86	69.87	78.54	69.17	71.36	75.16
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.86 %	11.10 %	10.40 %	11.37 %	11.28 %	10.60 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.53 x	3.63 x	3.57 x	3.40 x	3.57 x	3.54 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	14.60 %	14.73 %	15.23 %	16.70 %	18.17 %	15.89 %
TOTAL DEBT / TOTAL CAPITAL	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %

See Page 2 for notes.

Proxy Group of Three Value Line (Standard Edition) Water Companies
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Selection Criteria:

The basis of selection was to include those water companies: 1) which are included in the Value Line (Standard Edition).

The following three water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
California Water Service Group

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

Capital Structure Based upon Total Capital for
the Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
Long-Term Debt	51.51 %	52.50 %	51.59 %	45.79 %	46.82 %	49.64 %
Short-Term Debt	5.80	7.68	6.22	7.74	7.11	6.91
Preferred Stock	0.24	0.25	0.44	0.59	0.68	0.44
Common Equity	42.45	39.57	41.75	45.88	45.39	43.01
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

PROXY GROUP OF FIFTEEN UTILITIES SELECTED ON THE BASIS OF LEAST RELATIVE DISTANCE
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001	2000	1999	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$6,466.62	$6,002.66	$5,447.01	$4,999.91	$4,660.90	
SHORT-TERM DEBT	$252.64	$325.28	$489.78	$536.91	$421.70	
TOTAL CAPITAL EMPLOYED	$6,719.26	$6,327.94	$5,936.79	$5,536.82	$5,082.60	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	5.90 %	6.57 %	7.13 %	7.23 %	
PREFERRED STOCK	4.35	4.37	4.30	4.29	4.05	
						5 YEAR AVERAGE
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	53.85 %	56.23 %	55.53 %	50.92 %	50.11 %	53.33 %
PREFERRED STOCK	1.10	1.03	1.34	1.47	2.38	1.46
COMMON EQUITY	45.05	42.74	43.13	47.61	47.51	45.21
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	56.04 %	59.43 %	59.10 %	55.02 %	53.10 %	56.54 %
PREFERRED STOCK	1.06	0.95	1.22	1.33	2.22	1.36
COMMON EQUITY	42.91	39.62	39.68	43.65	44.68	42.11
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	5.63 %	6.57 %	6.54 %	6.80 %	6.85 %	6.48 %
MARKET / AVERAGE BOOK RATIO	182.07	179.05	187.01	170.39	178.90	179.08
DIVIDEND YIELD	4.08	4.35	4.16	4.60	4.53	4.34
DIVIDEND PAYOUT RATIO	76.01	66.90	70.84	74.64	68.87	71.45
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.02 %	11.29 %	11.43 %	10.93 %	11.75 %	11.08 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	4.29 x	4.02 x	3.69 x	3.97 x	4.00 x	3.99 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	19.53 %	17.21 %	16.03 %	19.61 %	20.85 %	18.65 %
TOTAL DEBT / TOTAL CAPITAL	56.04 %	59.43 %	59.10 %	55.02 %	53.10 %	56.54 %

See Page 2 for notes.

Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Selection Criteria:

The basis of selection was to include those electric, gas, combination electric and gas, and water utilities: 1) which are included in Standard & Poor's Compustat Services, Inc., PC Plus Database; 2) which are most similar in risk to Aqua Illinois, Inc. based upon an analysis of the least relative distance of eight financial and operating ratios as explained in detail in Ms. Ahern's direct testimony; 4) which have Value Line (Standard Edition) or ThomsonFN / First Call consensus five-year EPS growth rate projections; and 5) which have not cut or omitted their common dividends in the five years ending 2003 or through the time of the preparation of Ms. Ahern's direct testimony, nor are expected by Value Line Investment Survey (Standard Edition) to cut their dividends during the next five years.

The following fifteen utilities met the above criteria:

AGL Resources, Inc.	American States Water Co.
Aqua America, Inc.	California Water Services Group
Cinergy Corp.	Consolidated Edison, Inc.
Dominion Resources, Inc.	Green Mountain Power Corp.
KeySpan Corp.	Middlesex Water Company
Northwest natural Gas Co.	Pinnacle West Capital Corp.
PNM Resources, Inc.	Southern Company
Southwest Water Company	

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Database

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 bal-

ance 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 interLATA 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 auger 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-

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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 experi-

ence. 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 effect 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

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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.

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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

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& 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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Feature Article

New Business Profile Scores Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised

Standard & Poor's Ratings Services has assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. Standard & Poor's also has revised its published risk-adjusted financial guidelines. The new business scores and financial guidelines do not represent a change to Standard & Poor's ratings criteria or methodology, and no ratings changes are anticipated from the new business profile scores or revised financial guidelines.

New Business Profile Scores and Revised Financial Guidelines

Standard & Poor's has always monitored changes in the industry and altered its business risk assessments accordingly. This is the first time since the 10-point business pro-

file scale for U.S. investor-owned utilities was implemented that a comprehensive assessment of the benefits and the application of the methodology has been made. The principal purpose was to determine if the methodology continues to provide meaningful differentiation of business risk. The review indicated that while business profile scoring continues to provide analytical benefits, the complete range of the 10-point scale was not being utilized to the fullest extent.

Standard & Poor's has also revised the key financial guidelines that it uses as an integral part of evaluating the credit quality of U.S. utility and power companies. These guidelines were last updated in June 1999. The financial guidelines for three principal ratios (funds from operations (FFO) interest coverage, FFO to total debt, and total debt to total capital) have been broadened so as to be more flexible. Pretax interest cov-

Chart 1
Distribution of Business Profile Scores

Chart 2
Transmission and Distribution—Water, Gas, and Electric

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erage as a key credit ratio was eliminated.

Finally, Standard & Poor's has segmented the utility and power industry into sub-sectors based on the dominant corporate strategy that a company is pursuing. Standard & Poor's has published a new U.S. utility and power company ranking list that reflects these sub-sectors.

There are numerous benefits to the reassessment. Fuller utilization of the entire 10-point scale provides a superior relative ranking of qualitative business risk. A revision of the financial guidelines supports the goal of not causing rating changes from the recalibration of the business profiles. Classification of companies by sub-sectors will ensure greater comparability and consistency in ratings. The use of industry segmentation will also allow more in-depth statistical analysis of ratings distributions and rating changes.

The reassessment does not represent a change to Standard & Poor's criteria or methodology for determining ratings for utility and power companies. Each business profile score should be considered as the assignment of a new score; these scores do not represent improvement or deteri-

oration in our assessment of an individual company's business risk relative to the previously assigned score. The financial guidelines continue to be risk-adjusted based on historical utility and industrial medians. Segmentation into industry sub-sectors does not imply that specific company characteristics will not weigh heavily into the assignment of a company's business profile score.

Results

Previously, 83% of U.S. utility and power business profile scores fell between '3' and '6', which clearly does not reflect the risk differentiation that exists in the utility and power industry today. Since the 10-point scale was introduced, the industry has transformed into a much less homogenous industry, where the divergence of business risk—particularly regarding management, strategy, and degree of competitive market exposure—has created a much wider spectrum of risk profiles. Yet over the same period, business profile scores actually converged more tightly around a median score of '4'. The new business pro-

Chart 3
Transmission Only—Electric, Gas, and Other

Business Profile Score

Chart 4
Integrated Electric, Gas, and Combination Utilities

Business Profile Score

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file scores, as of June 2, are shown in Chart 1. The overall median business profile score is now '5'.

Table 1 contains the revised financial guidelines. It is important to emphasize that these metrics are only guidelines associated with expectations for various rating levels. Although credit ratio analysis is an important part of the ratings process, these three statistics are by no means the only critical financial measures that Standard & Poor's uses in its analytical process. We also analyze a wide array of financial ratios that do not have published guidelines for each rating category.

Again, ratings analysis is not driven solely by these financial ratios, nor has it ever been. In fact, the new financial guidelines that Standard & Poor's is incorporating for the specified rating categories reinforce the analytical framework whereby other factors can outweigh the achievement of otherwise acceptable financial ratios. These factors include:

- Effectiveness of liability and liquidity management;
- Analysis of internal funding sources;

- Return on invested capital;
- The execution record of stated business strategies;
- Accuracy of projected performance versus actual results, as well as the trend;
- Assessment of management's financial policies and attitude toward credit; and
- Corporate governance practices.

Charts 2 through 6 show business profile scores broken out by industry sub-sector. The five industry sub-sectors are:

- Transmission and distribution—Water, gas, and electric;
- Transmission only—Electric, gas, and other;
- Integrated electric, gas, and combination utilities;
- Diversified energy and diversified nonenergy; and
- Energy merchant/power developer/trading and marketing companies.

The average business profile scores for transmission and distribution companies and transmission-only companies are lower on the scale than the previous averages, while the average business profile scores for integrated utilities, diversified energy, and energy merchants and developers are higher.

Chart 5
Diversified Energy and Diversified Non-Energy

Business Profile Score

Chart 6
Energy Merchant/Developers/Trading and Marketing

Business Profile Scores

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See pages 16 to 19 for the company ranking list of business profile scores segmented by industry sub-sector and ranked in order of credit rating, outlook, business profile score, and relative strength.

Business Profile Score Methodology

Standard & Poor's methodology of determining corporate utility business risk is anchored in the assessment of certain specific characteristics that define the sector. We assign business profile scores to each of the rated companies in the utility and power sector on a 10-point scale, where '1' represents the lowest risk and '10' the highest risk. Business profile scores are assigned to all rated utility and power companies, whether they are holding companies, subsidiaries, or stand-alone corporations. For operating subsidiaries and stand-alone companies, the score is a bottom-up assessment. Scores for families of companies are a composite of the operating subsidiaries' scores. The actual credit rating of a company is analyzed, in part, by comparing the business profile score with the risk-adjusted financial guidelines.

For most companies, business profile scores are assessed using five categories; specifically, regulation, markets, operations, competitiveness, and management. The emphasis placed on each category may be influenced by the

Table 1

Revised Financial Guidelines

Funds from operations/interest coverage (x)

Business Profile	AA		A		BBB		BB	
1	3	2.5	2.5	1.5	1.5	1		
2	4	3	3	2	2	1		
3	4.5	3.5	3.5	2.5	2.5	1.5	1.5	1
4	5	4.2	4.2	3.5	3.5	2.5	2.5	1.5
5	5.5	4.5	4.5	3.8	3.8	2.8	2.8	1.8
6	6	5.2	5.2	4.2	4.2	3	3	2
7	8	6.5	6.5	4.5	4.5	3.2	3.2	2.2
8	10	7.5	7.5	5.5	5.5	3.5	3.5	2.5
9			10	7	7	4	4	2.8
10			11	8	8	5	5	3

Funds from operation/total debt (%)

Business Profile	AA		A		BBB		BB	
1	20	15	15	10	10	5		
2	25	20	20	12	12	8		
3	30	25	25	15	15	10	10	5
4	35	28	28	20	20	12	12	8
5	40	30	30	22	22	15	15	10
6	45	35	35	28	28	18	18	12
7	55	45	45	30	30	20	20	15
8	70	55	55	40	40	25	25	15
9			65	45	45	30	30	20
10			70	55	55	40	40	25

Total debt/total capital (%)

Business Profile	AA		A		BBB		BB	
1	48	55	55	60	60	70		
2	45	52	52	58	58	68		
3	42	50	50	55	55	65	65	70
4	38	45	45	52	52	62	62	68
5	35	42	42	50	50	60	60	65
6	32	40	40	48	48	58	58	62
7	30	38	38	45	45	55	55	60
8	25	35	35	42	42	52	52	58
9			32	40	40	50	50	55
10			25	35	35	48	48	52

Feature Article

dominant strategy of the company or other factors. For example, for a regulated transmission and distribution company, regulation may account for 30% to 40% of the business profile score because regulation can be the single-most important credit driver for this type of company. Conversely, competition, which may not exist for a transmission and distribution company, would provide a much lower proportion (e.g., 5% to 15%) of the business profile score.

For certain types of companies, such as power generators, power developers, oil and gas exploration and production companies, or nonenergy-related holdings, where these five components may not be appropriate, Standard & Poor's will use other, more appropriate methodologies. Some of these companies are assigned business profile scores that are useful only for relative ranking purposes.

As noted above, the business profile score for a parent or holding company is a composite of the business profile scores of its individual subsidiary companies. Again, Standard & Poor's does not apply rigid guidelines for deter-

mining the proportion or weighting that each subsidiary represents in the overall business profile score. Instead, it is determined based on a number of factors. Standard & Poor's will analyze each subsidiary's contribution to FFO, forecast capital expenditures, liquidity requirements, and other parameters, including the extent to which one subsidiary has higher growth. The weighting is determined case-by-case. ■

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	2003	2002	2001	2000	1999	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$111.856	$89.241	$89.146	$85.213	$75.740	
SHORT-TERM DEBT	1.098	11.505	5.250	5.700	2.500	
TOTAL-CAPITAL EMPLOYED	$112.954	$100.746	$94.396	$90.913	$78.240	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.63 %	7.01 %	7.83 %	7.94 %	8.13 %	
PREFERRED DEBT	0.00	5.38	5.50	5.50	5.50	
						5 YEAR AVERAGE
DIVIDEND PAYOUT RATIO	22.86 %	102.61 %	135.34 %	0.00 %	90.77 %	70.32 %
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	49.87 %	47.96 %	48.03 %	46.92 %	49.37 %	48.43 %
PREFERRED STOCK ·	0.34	0.43	0.45	0.47	0.53	0.44
COMMON EQUITY	49.79	51.61	51.52	52.61	50.10	51.13
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	50.36 %	53.91 %	50.92 %	50.24 %	50.98 %	51.28 %
MINORITY INTEREST	0.34	0.38	0.42	0.44	0.51	0.42
COMMON EQUITY	49.30	45.71	48.66	49.32	48.51	48.30
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
RATE OF RETURN ON AVERAGE COMMON EQUITY	9.38 %	10.79 %	9.37 %	9.13 %	10.23 %	9.78 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE(2)	3.99 x	4.18 x	3.60 x	4.06 x	3.41 x	3.85 x
FUNDS FROM OPERATIONS / TOTAL DEBT(3)	19.41 %	21.00 %	19.83 %	22.80 %	19.39 %	20.49 %
TOTAL DEBT / TOTAL CAPITAL	50.36 %	53.91 %	50.92 %	50.24 %	50.98 %	51.28 %

SEE PAGE 2 FOR NOTES.

Aqua Illinois, Inc.
Capitalization and Financial Statistics
1999-2003, Inclusive

Notes:

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

(2) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(3) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Source of Information: Aqua Illinois, Inc. and Consumers Illinois Water Company Annual Reports to the Illinois Commerce Commission

PROXY GROUP OF SIX C. A. TURNER WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001 (MILLIONS OF DOLLARS)	2000	1999	5 YEAR AVERAGE
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$470.63	$407.79	$375.00	$331.41	$292.07	
SHORT-TERM DEBT	$32.07	$35.13	$30.67	$26.75	$24.88	
TOTAL CAPITAL EMPLOYED	$502.69	$442.92	$405.67	$358.16	$316.95	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	6.02 %	6.27 %	6.84 %	7.42 %	7.64 %	
PREFERRED STOCK	3.98	5.73	5.31	5.20	5.40	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.07 %	54.19 %	54.26 %	52.09 %	51.27 %	53.18 %
PREFERRED STOCK	0.49	0.57	0.76	0.88	0.98	0.74
COMMON EQUITY	45.44	45.24	44.98	47.03	47.75	46.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %
PREFERRED STOCK	0.47	0.52	0.70	0.84	0.93	0.69
COMMON EQUITY	42.26	42.29	41.66	44.27	44.95	43.09
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.85 %	4.90 %	4.92 %	5.33 %	5.25 %	4.85 %
MARKET / AVERAGE BOOK RATIO	232.50	221.41	215.22	191.35	204.41	212.98
DIVIDEND YIELD	3.28	3.63	3.81	4.26	4.02	3.80
DIVIDEND PAYOUT RATIO	87.80	74.83	79.40	83.28	75.53	80.17
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.97 %	10.58 %	10.35 %	10.09 %	10.82 %	10.16 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.38 x	3.37 x	3.27 x	3.10 x	3.20 x	3.26 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	13.57 %	14.00 %	14.07 %	14.60 %	15.57 %	14.36 %
TOTAL DEBT / TOTAL CAPITAL	57.27 %	57.19 %	57.64 %	54.89 %	54.12 %	56.22 %

See Page 2 for notes.

Proxy Group of Six C. A. Turner Water Companies
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) 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 C. A. Turner Public Utility Reports (December 2004); 2) which have Value Line (Standard Edition) five-year EPS growth rate projections or Thomson FN / First Call consensus five-year EPS growth rate projections; and 3) which have more than 70% of their 2003 operating revenues derived from water operations.

The following six water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
Artesian Resources, Inc.
California Water Service Group
Middlesex Water Company
York Water Co.

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

Capital Structure Based upon Total Capital for
the Proxy Group of Six C. A. Turner Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Artesian Resources Corp.						
Long-Term Debt	54.83 %	53.82 %	49.44 %	58.71 %	46.49 %	52.66 %
Short-Term Debt	9.39	3.24	16.68	3.65	10.69	8.73
Preferred Stock	0.00	0.17	0.56	0.76	1.00	0.50
Common Equity	35.78	42.77	33.32	36.88	41.82	38.11
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	50.57 %	47.29 %	49.70 %	50.48 %	51.88 %	49.98 %
Short-Term Debt	6.42	9.47	7.43	3.71	1.26	5.66
Preferred Stock	2.09	2.18	2.28	2.49	2.55	2.32
Common Equity	40.92	41.06	40.59	43.32	44.31	42.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
York Water Company						
Long-Term Debt	41.40 %	45.00 %	46.35 %	48.29 %	50.41 %	46.29 %
Short-Term Debt	9.07	3.77	2.83	3.90	2.20	4.35
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	49.53	51.23	50.82	47.81	47.39	49.36
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Six C. A. Turner Water Companies						
Long-Term Debt	50.22 %	50.60 %	50.04 %	49.14 %	48.21 %	49.64 %
Short-Term Debt	7.05	6.59	7.60	5.75	5.91	6.58
Preferred Stock	0.47	0.52	0.70	0.84	0.93	0.69
Common Equity	42.26	42.29	41.66	44.27	44.95	43.09
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

PROXY GROUP OF THREE VALUE LINE (STANDARD EDITION) WATER COMPANIES
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

	2003	2002	2001	2000	1999	
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$812.16	$697.46	$643.70	$560.38	$487.73	
SHORT-TERM DEBT	$52.97	$62.16	$50.56	$49.53	$45.89	
TOTAL CAPITAL EMPLOYED	$865.13	$759.62	$694.26	$609.91	$533.62	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	6.04 %	6.66 %	7.44 %	8.00 %	
PREFERRED STOCK	2.83	3.84	4.03	3.76	3.90	
						5 YEAR AVERAGE
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	54.78 %	56.84 %	54.95 %	49.65 %	50.50 %	53.34 %
PREFERRED STOCK	0.24	0.28	0.47	0.63	0.72	0.47
COMMON EQUITY	44.98	42.88	44.58	49.72	48.78	46.19
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %
PREFERRED STOCK	0.24	0.25	0.44	0.59	0.68	0.44
COMMON EQUITY	42.45	39.57	41.75	45.88	45.39	43.01
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.89 %	5.17 %	4.70 %	5.47 %	5.00 %	4.85 %
MARKET / AVERAGE BOOK RATIO	225.26	217.33	225.22	206.93	221.95	219.34
DIVIDEND YIELD	3.32	3.63	3.61	3.77	3.65	3.60
DIVIDEND PAYOUT RATIO	86.86	69.87	78.54	69.17	71.36	75.16
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.86 %	11.10 %	10.40 %	11.37 %	11.28 %	10.60 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	3.53 x	3.63 x	3.57 x	3.40 x	3.57 x	3.54 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	14.60 %	14.73 %	15.23 %	16.70 %	18.17 %	15.89 %
TOTAL DEBT / TOTAL CAPITAL	57.31 %	60.18 %	57.81 %	53.53 %	53.93 %	56.55 %

See Page 2 for notes.

Proxy Group of Three Value Line (Standard Edition) Water Companies
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Selection Criteria:

The basis of selection was to include those water companies: 1) which are included in the Value Line (Standard Edition).

The following three water companies met the above criteria:

American States Water Co.
Aqua America, Inc.
California Water Service Group

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

Capital Structure Based upon Total Capital for
the Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Services Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.05 %	48.62 %
Short-Term Debt	1.22	7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.12	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
Long-Term Debt	51.51 %	52.50 %	51.59 %	45.79 %	46.82 %	49.64 %
Short-Term Debt	5.80	7.68	6.22	7.74	7.11	6.91
Preferred Stock	0.24	0.25	0.44	0.59	0.68	0.44
Common Equity	42.45	39.57	41.75	45.88	45.39	43.01
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

PROXY GROUP OF FIFTEEN UTILITIES SELECTED ON THE BASIS OF LEAST RELATIVE DISTANCE
CAPITALIZATION AND FINANCIAL STATISTICS (1)
1999 - 2003, INCLUSIVE

(MILLIONS OF DOLLARS)

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$6,466.62	$6,002.66	$5,447.01	$4,999.91	$4,660.90	
SHORT-TERM DEBT	$252.64	$325.28	$489.78	$536.91	$421.70	
TOTAL CAPITAL EMPLOYED	$6,719.26	$6,327.94	$5,936.79	$5,536.82	$5,082.60	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	5.90 %	5.90 %	6.57 %	7.13 %	7.23 %	
PREFERRED STOCK	4.35	4.37	4.30	4.29	4.05	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	53.85 %	56.23 %	55.53 %	50.92 %	50.11 %	53.33 %
PREFERRED STOCK	1.10	1.03	1.34	1.47	2.38	1.46
COMMON EQUITY	45.05	42.74	43.13	47.61	47.51	45.21
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	56.04 %	59.43 %	59.10 %	55.02 %	53.10 %	56.54 %
PREFERRED STOCK	1.05	0.95	1.22	1.33	2.22	1.36
COMMON EQUITY	42.91	39.62	39.68	43.65	44.68	42.11
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	5.63 %	6.57 %	6.54 %	6.80 %	6.85 %	6.48 %
MARKET / AVERAGE BOOK RATIO	182.07	179.05	187.01	170.39	176.90	179.08
DIVIDEND YIELD	4.08	4.35	4.16	4.60	4.53	4.34
DIVIDEND PAYOUT RATIO	76.01	68.90	70.84	74.64	68.87	71.45
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	10.02 %	11.29 %	11.43 %	10.93 %	11.75 %	11.08 %
FUNDS FROM OPERATIONS / INTEREST COVERAGE (3)	4.29 %	4.02 %	3.69 %	3.97 %	4.00 %	3.99 %
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	19.53 X	17.21 X	16.03 X	19.61 X	20.85 X	18.65 X
TOTAL DEBT / TOTAL CAPITAL	56.04 %	59.43 %	59.10 %	55.02 %	53.10 %	58.54 %

See Page 2 for notes.

Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Capitalization and Financial Statistics
1999-2003, 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 long-term debt interest or preferred stock dividends booked to average of beginning and ending long-term debt or preferred stock reported to be outstanding.

(3) Funds from operations (as defined in Note 3) plus interest charges divided by interest charges.

(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) as a percentage of total debt.

Selection Criteria:

The basis of selection was to include those electric, gas, combination electric and gas, and water utilities: 1) which are included in Standard & Poor's Compustat Services, Inc., PC Plus Database; 2) which are most similar in risk to Aqua Illinois, Inc. based upon an analysis of the least relative distance of eight financial and operating ratios as explained in detail in Ms. Ahern's direct testimony; 4) which have Value Line (Standard Edition) or ThomsonFN / First Call consensus five-year EPS growth rate projections; and 5) which have not cut or omitted their common dividends in the five years ending 2003 or through the time of the preparation of Ms. Ahern's direct testimony, nor are expected by Value Line Investment Survey (Standard Edition) to cut their dividends during the next five years.

The following fifteen utilities met the above criteria:

AGL Resources, Inc.	American States Water Co.
Aqua America, Inc.	California Water Services Group
Cinergy Corp.	Consolidated Edison, Inc.
Dominion Resources, Inc.	Green Mountain Power Corp.
KeySpan Corp.	Middlesex Water Company
Northwest natural Gas Co.	Pinnacle West Capital Corp.
PNM Resources, Inc.	Southern Company
Southwest Water Company	

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Database

Capital Structure Based upon Total Capital for
the Proxy Group of Fifteen Utilities
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
AGL Resources Inc.						
Long-Term Debt	45.22 %	48.25 %	53.24 %	47.31 %	52.55 %	49.31 %
Short-Term Debt	13.41	18.30	14.55	9.76	0.11	11.23
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	41.37	33.45	32.21	42.93	47.34	39.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
American States Water Co.						
Long-Term Debt	53.41 %	55.89 %	58.74 %	42.50 %	47.98 %	51.70 %
Short-Term Debt	9.72	6.22	3.72	10.80	6.01	7.29
Preferred Stock	0.00	0.00	0.35	0.46	0.56	0.27
Common Equity	36.87	37.89	37.19	46.24	45.45	40.73
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Aqua America, Inc.						
Long-Term Debt	49.35 %	50.36 %	47.67 %	48.18 %	47.44 %	48.60 %
Short-Term Debt	6.47	9.39	9.83	8.84	11.48	9.20
Preferred Stock	0.06	0.06	0.17	0.46	0.48	0.25
Common Equity	44.12	40.19	42.33	42.52	40.60	41.95
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
California Water Service Group						
Long-Term Debt	51.77 %	51.25 %	48.36 %	46.69 %	45.04 %	48.62 %
Short-Term Debt	1.22	.7.42	5.11	3.59	3.85	4.24
Preferred Stock	0.66	0.71	0.81	0.85	0.98	0.80
Common Equity	46.35	40.62	45.72	48.87	50.13	46.34
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Cinergy Corp.						
Long-Term Debt	54.71 %	53.23 %	49.34 %	42.29 %	47.81 %	49.48 %
Short-Term Debt	3.87	7.76	14.08	16.36	8.71	10.16
Preferred Stock	0.69	0.73	0.76	0.91	1.47	0.91
Common Equity	40.73	38.28	35.82	40.44	42.01	39.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Consolidated Edison, Inc.						
Long-Term Debt	50.36 %	51.45 %	48.29 %	49.06 %	44.59 %	48.75 %
Short-Term Debt	1.15	1.24	2.83	2.17	4.46	2.37
Preferred Stock	1.85	1.71	2.14	2.13	2.24	2.01
Common Equity	46.64	45.60	46.74	46.64	48.71	46.87
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Dominion						
Long-Term Debt	58.16 %	57.19 %	57.92 %	50.20 %	55.77 %	55.85 %
Short-Term Debt	4.96	4.38	7.37	15.01	6.18	7.58
Preferred Stock	0.88	0.94	1.52	2.36	4.32	2.00
Common Equity	36.00	37.49	33.19	32.43	33.73	34.57
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Green Mountain Power Corp.						
Long-Term Debt	49.38 %	52.99 %	44.17 %	42.31 %	44.05 %	46.58 %
Short-Term Debt	0.25	1.25	0.00	7.43	3.64	2.51
Preferred Stock	0.00	0.04	6.16	6.13	5.90	3.65
Common Equity	50.37	45.72	49.67	44.13	46.41	47.26
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Capital Structure Based upon Total Capital for
the Proxy Group of Fifteen Utilities
for the Years 1999 through 2003

	2003	2002	2001	2000	1999	5 YEAR AVERAGE
KeySpan Corp.						
Long-Term Debt	54.23 %	55.64 %	52.71 %	49.74 %	32.78 %	49.02 %
Short-Term Debt	4.66	9.73	11.76	15.11	4.06	9.06
Preferred Stock	5.73	3.34	3.10	2.43	10.27	4.97
Common Equity	35.38	31.29	32.43	32.72	52.89	36.94
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Middlesex Water Company						
Long-Term Debt	50.57 %	47.29 %	49.70 %	50.48 %	51.88 %	49.98 %
Short-Term Debt	6.42	9.47	7.43	3.71	1.26	5.66
Preferred Stock	2.09	2.18	2.28	2.49	2.55	2.32
Common Equity	40.92	41.06	40.59	43.32	44.31	42.04
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Northwest Natural Gas Co.						
Long-Term Debt	45.83 %	45.36 %	40.66 %	43.64 %	42.08 %	43.51 %
Short-Term Debt	7.80	6.80	10.53	5.84	9.75	8.14
Preferred Stock	0.00	0.81	3.31	3.61	3.69	2.28
Common Equity	46.37	47.03	45.50	46.91	44.48	46.06
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Pinnacle West Capital Corp.						
Long-Term Debt	53.26 %	53.14 %	49.07 %	49.52 %	50.84 %	51.17 %
Short-Term Debt	1.38	1.72	7.11	1.69	0.84	2.55
Preferred Stock	0.00	0.00	0.00	0.00	0.00	0.00
Common Equity	45.36	45.14	43.82	48.79	48.32	46.29
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
PNM Resources, Inc.						
Long-Term Debt	44.81 %	46.04 %	47.10 %	50.11 %	51.99 %	48.01 %
Short-Term Debt	5.71	7.05	1.73	0.00	0.00	2.90
Preferred Stock	0.58	1.15	1.20	1.31	1.35	1.12
Common Equity	48.90	45.76	49.97	48.58	46.66	47.97
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southern Company						
Long-Term Debt	54.62 %	55.94 %	51.76 %	44.36 %	50.76 %	51.49 %
Short-Term Debt	2.42	4.43	8.95	7.34	13.56	7.34
Preferred Stock	1.81	1.31	1.73	1.61	3.79	2.05
Common Equity	41.15	38.32	37.56	46.69	31.89	39.12
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southwest Water Company						
Long-Term Debt	48.50 %	57.07 %	55.97 %	51.45 %	46.72 %	51.94 %
Short-Term Debt	0.00	0.00	0.00	0.00	0.00	0.00
Preferred Stock	0.85	0.74	0.41	0.51	0.68	0.64
Common Equity	50.65	42.19	43.62	48.04	52.60	47.42
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
Long-Term Debt	50.95 %	52.07 %	50.31 %	47.19 %	47.49 %	49.60 %
Short-Term Debt	4.63	6.34	7.00	7.18	4.93	6.02
Preferred Stock	1.01	0.92	1.60	1.69	2.55	1.55
Common Equity	43.41	40.67	41.09	43.95	45.04	42.83
Total Capital	100.00 %	100.00 %	100.00 %	100.01 %	100.01 %	100.00 %

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Data Base

Basis for the Selection of the Proxy Group of Fifteen Utilities
Selected on the Basis of Least Relative Distance

	Pre-Tax Interest Coverage (1)	Common Equity Ratio (2)	Fixed Asset Turnover (3)	AFUDC to Net Income (4)	Cash Flow as a % of Permanent Capitalization (5)	Net Cash Flow to Expenditures (6)	Funds Flow Interest Coverage (7)	Operating Earnings Stability (8)	Sum of Distance (9)
AGL Resources, Inc.	3.1031	0.4335	0.2964	0.0000	0.1350	1.0792	4.0169	0.3327	0.6516
American States Water Co.	2.7259	0.4035	0.2666	0.0000	0.0850	0.6607	3.6027	0.3083	0.5854
Aqua America, Inc.	3.5548	0.4732	0.1727	0.0237	0.1036	0.5976	3.8831	0.1697	0.5383
California Water Services Group	2.5291	0.4660	0.2637	0.0798	0.0910	0.3364	3.2914	0.4965	0.9609
Cinergy Corp.	2.9813	0.4399	0.7191	0.0696	0.0999	0.6305	3.6832	0.2083	0.6752
Consolidated Edison, Inc.	3.2101	0.4837	0.5388	0.0291	0.0955	0.6136	3.7480	0.3285	0.5342
Dominion Resources, Inc.	2.3150	0.4012	0.3192	0.0000	0.1091	0.7572	3.8191	0.4965	0.8941
Green Mountain Power Corp.	3.3803	0.5032	0.8559	0.0432	0.1000	1.0580	3.9031	0.2674	0.9806
KeySpan Corp.	2.7780	0.3619	0.5865	0.0000	0.1252	0.7464	4.3305	0.6768	0.8526
Middlesex Water Company	2.9925	0.4448	0.2415	0.0355	0.0705	0.3446	3.3551	0.1993	0.6733
Northwest Natural Gas Co.	2.9412	0.5167	0.4096	0.0238	0.1084	0.8116	3.9490	0.8500	0.8170
Pinnacle West Capital Corp.	2.8294	0.4866	0.3395	0.2100	0.1191	0.6760	4.6289	0.5366	0.8348
PNM Resources, Inc.	3.2034	0.5064	0.5280	0.0514	0.1186	0.9637	4.5583	0.6905	0.9970
Southern Company	3.6706	0.4305	0.2650	0.0581	0.1103	0.6102	4.4376	0.4060	0.8239
Southwest Water Company	2.9842	0.4659	0.5299	0.0811	0.1040	0.6941	4.0751	0.4672	0.5454
Aqua Illinois, Inc.	3.0464	0.5097	0.1582	0.0086	0.1139	0.4744	4.0018	0.1598	0.0000

See page 6 for notes.

Basis for the Selection of the Proxy Group of
Fifteen Utilities Selected on the Basis of Least Relative Distance

Notes:

(1) Pre-tax interest coverage represents the number of times available earnings, before income taxes, excluding all allowance for funds used during construction (AFUDC) cover total interest charges, average for the years 2001, 2002 and 2003.

(2) Common equity ratio is the ratio of total common equity to permanent capitalization (the sum of total long-term debt, current maturities, total preferred stock and total common equity), average for the years 2001, 2002 and 2003.

(3) Fixed asset turnover is the ratio of total operating revenues to gross utility plant, average for the years 2001, 2002 and 2003.

(4) AFUDC to net income is the ratio of total AFUDC to income available for common equity, average for the years 2001, 2002 and 2003.

(5) Cash flow as a percent of permanent capitalization is the ratio of funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) to permanent capitalization (the sum of total long-term debt, current maturities, total preferred stock and total common equity), average for the years 2001, 2002 and 2003.

(6) Net cash flow to capital expenditures is the ratio of gross construction expenditures, excluding all AFUDC, provided by funds from operation (as defined in Note 5), after payment of all cash dividends, average for the years 2001, 2002 and 2003.

(7) Funds flow interest coverage is the ratio of funds from operations (as defined in Note 5) plus total interest charges to total interest charges, average for the years 2001, 2002 and 2003.

(8) Operating earnings stability is an index of the variation in quarterly before-income tax operating income for the years 2001, 2002 and 2003. It is calculated by dividing the standard error of the estimate of a regression about a trend line by the mean. It is analogous to the coefficient of variation.

(9) Sum of distance is calculated as the squared distances between the eight operating / financial ratios of each firm and Aqua Illinois, Inc., summing the squared distances, and then calculating the square root of the summation.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database
Aqua Illinois, Inc. Annual Reports to the Illinois Commerce Commission and quarterly income statements

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
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	$ 24.000	$ 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)	$ 0.960	$ 0.960	$ 0.960
5.	Growth in Dollars	$ 1.440	$ 0.373	$ 2.040
6.	Return on Market Value	10.00%	5.55% (3)	12.50% (4)
7.	Rate of Growth on Market Value	6.00% (5)	1.55% (6)	8.50% (7)

Notes:
(1) Comprised of 4.0% dividend yield and 6.0%% growth.

(2) $24.00 * 4.0% yield = $0.960.

(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 - $0.960 dividends = $0.373 for growth / $24.00 market value = 1.55%).

(7) Actual rate of growth when DCF cost rate is applied to book value ($3.000 possible earnings - $0.960 dividends = $2.040 for growth / $24.00 market value = 8.50%).

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Indicated Common Equity Cost Rate
Through Use of the Discounted Cash Flow Model
Summary of Conclusion

	Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
1. Single Stage Discounted Cash Flow Model (1)	10.5 %	10.9 %	10.7 %
2. Quarterly Version of the Discounted Cash Flow Model (2)	10.7	11.1	10.8
3. Conclusion	10.6 %	11.0 %	10.8 %

Notes: (1) From page 2 of Aqua Schedule 3.9.

          (2) From page 2 of Aqua Schedule 3.10.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Seleced on the Basis of Least Relative Distance

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 C. A. Turner Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	4.7 %	8.5 %
Aqua America, Inc.	2.3	0.1	2.4	10.0	12.4
Artesian Resources Corp.	3.0	0.1	3.1	6.3	9.4
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Middlesex Water Company	3.5	0.1	3.6	3.1	6.7
York Water Company	3.2	0.1	3.3	4.7	8.0
Average	3.2 %	0.1 %	3.3 %	5.7 %	10.2 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	4.7 %	8.5 %
Aqua America, Inc.	2.3	0.1	2.4	10.0	12.4
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Average	3.2 %	0.1 %	3.3 %	6.7 %	10.7 % (6)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	3.7 %	0.1 %	3.8 %	3.8 %	7.6 %
American States Water Co.	3.7	0.1	3.8	4.7	8.5
Aqua America, Inc.	2.3	0.1	2.4	9.6	12.0
California Water Services Group	3.5	0.1	3.6	5.3	8.9
Cinergy Corp.	4.6	0.1	4.7	3.0	7.7
Consolidated Edison, Inc.	5.2	0.0	5.2	1.9	7.1
Dominion Resources, Inc.	4.1	0.1	4.2	6.6	10.8
Green Mountain Power Corp.	3.3	0.1	3.4	8.6	12.0
KeySpan Corp.	4.6	0.1	4.7	4.2	8.9
Middlesex Water Company	3.5	0.1	3.6	3.1	6.7
Northwest Natural Gas Co.	4.0	0.1	4.1	3.3	7.4
Pinnacle West Capital Corp.	4.4	0.1	4.5	4.4	8.9
PNM Resources, Inc.	2.6	0.1	2.7	5.6	8.3
Southern Company	4.5	0.1	4.6	3.4	8.0
Southwest Water Company	1.6	0.1	1.7	12.8	14.5
Average	3.7 %	0.1 %	3.8 %	5.4 %	10.9 % (6)

Notes: (1) From Aqua Schedule 3.11.

(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Aqua Schedule 3.13) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 3.7% x (1/2 x 4.7%) = 0.1%.

(3) Column 1 + Column 2.

(4) From page 1 of Aqua Schedule 3.13.

(5) Column 3 + Column 4.

(6) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Indicated Common equity Cost Rate Through Use of the
Single Stage Discounted Cash Flow Model for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

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 C. A. Turner Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	6.3 %	10.1 %
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
Artesian Resources Corp.	3.0	0.1	3.1	8.5	11.6
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Middlesex Water Company	3.5	0.1	3.6	6.0	9.6
York Water Company	3.2	0.1	3.3	7.0	10.3
Average	3.2 %	0.1 %	3.3 %	7.5 %	10.8 % (6)
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.7 %	0.1 %	3.8 %	6.3 %	10.1 %
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Average	3.2 %	0.1 %	3.3 %	7.9 %	11.1 % (6)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	3.7 %	0.1 %	3.8 %	5.3 %	9.1 %
American States Water Co.	3.7	0.1	3.8	6.3	10.1
Aqua America, Inc.	2.3	0.1	2.4	9.3	11.7
California Water Services Group	3.5	0.1	3.6	8.0	11.6
Cinergy Corp.	4.8	0.1	4.7	3.9	8.6
Consolidated Edison, Inc.	5.2	0.1	5.3	2.3	7.6
Dominion Resources, Inc.	4.1	0.1	4.2	6.8	11.0
Green Mountain Power Corp.	3.3	0.1	3.4	3.5	6.9
KeySpan Corp.	4.6	0.1	4.7	5.6	10.3
Middlesex Water Company	3.5	0.1	3.6	6.0	9.6
Northwest Natural Gas Co.	4.0	0.1	4.1	4.9	9.0
Pinnacle West Capital Corp.	4.4	0.1	4.5	3.2	7.7
PNM Resources, Inc.	2.6	0.1	2.7	5.0	7.7
Southern Company	4.5	0.1	4.6	4.8	9.4
Southwest Water Company	1.6	0.1	1.7	10.0	11.7
Average	3.7	0.1	3.8	5.7	10.4 % (6)

Conclusion

Proxy Group of Six C. A. Turner Water Companies					10.5 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					10.9 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					10.7 %

Notes: (1) From Aqua Schedule 3.11.

(2) This reflects a growth rate component equal to one-half the conclusion of growth rate (from page 1 of Aqua Schedule 3.13) x Column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for American States Water Co., 3.7% x (1/2 x 6.3%) = 0.1%.

(3) Column 1 + Column 2.

(4) From page 1 of Aqua Schedule 3.13.

(5) Column 3 + Column 4.

(6) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Indicated Common Equity Cost Rate Through Use of the
Quarterly Version of the Discounted Cash Flow Model (1)
for the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Based upon Historical and Projected Growth in DPS, EPS, and BR+SV (2)		
	Based upon Spot Closing Market Prices at December 7, 2004	Based Upon an Average of Closing Market Prices for Last 3 Months (3)	Average
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	8.5 %	8.4 %	8.5 %
Aqua America, Inc.	12.3	12.4	12.4
Artesian Resources Corp.	9.3	9.3	9.3
California Water Service Group	9.2	9.4	9.3
Middlesex Water Company	6.6	6.8	6.7
York Water Company	7.9	8.3	8.1
Average			10.3 % (5)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	8.5 %	8.4 %	8.5 %
Aqua America, Inc.	12.3	12.4	12.4
California Water Service Group	9.2	9.4	9.3
Average			10.9 % (5)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	7.5 %	7.6 %	7.6 %
American States Water Co.	8.5	8.4	8.5
Aqua America, Inc.	12.3	12.4	12.4
California Water Services Group	9.2	9.4	9.3
Cinergy Corp.	7.9	8.1	8.0
Consolidated Edison, Inc.	7.3	7.5	7.4
Dominion Resources, Inc.	11.0	10.9	11.0
Green Mountain Power Corp.	12.3	12.6	12.5
KeySpan Corp.	9.0	8.9	9.0
Middlesex Water Company	6.6	6.8	6.7
Northwest Natural Gas Co.	7.4	7.4	7.4
Pinnacle West Capital Corp.	9.0	9.0	9.0
PNM Resources, Inc.	8.3	8.5	8.4
Southern Company	8.1	8.1	8.1
Southwest Water Company	14.8	14.6	14.7
Average			11.1 % (5)

See page 2 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Indicated Common Equity Cost Rate Through Use of the
Quarterly Version of the Discounted Cash Flow Model (1)
for the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Based upon Projected Growth in EPS (4)		
	Based upon Spot Closing Market Prices at December 7, 2004	Based Upon an Average of Closing Market Prices for Last 3 Months (3)	Average
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	10.2 %	10.0 %	10.1 %
Aqua America, Inc.	11.6	11.7	11.7
Artesian Resources Corp.	11.5	11.7	11.6
California Water Service Group	12.1	12.3	12.2
Middlesex Water Company	9.6	9.8	9.7
York Water Company	10.4	10.6	10.5
Average			11.0 % (5)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	10.2 %	10.0 %	10.1 %
Aqua America, Inc.	11.6	11.7	11.7
California Water Service Group	12.1	12.3	12.2
Average			11.3 % (5)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	9.3 %	9.2 %	9.3 %
American States Water Co.	10.2	10.0	10.1
Aqua America, Inc.	11.6	11.7	11.7
California Water Services Group	12.1	12.3	12.2
Cinergy Corp.	8.9	9.1	9.0
Consolidated Edison, Inc.	7.8	7.9	7.9
Dominion Resources, Inc.	11.0	11.1	11.1
Green Mountain Power Corp.	7.1	7.1	7.1
KeySpan Corp.	10.4	10.3	10.4
Middlesex Water Company	9.6	9.8	9.7
Northwest Natural Gas Co.	9.1	9.0	9.1
Pinnacle West Capital Corp.	7.7	7.8	7.8
PNM Resources, Inc.	7.7	7.8	7.8
Southern Company	9.4	9.6	9.5
Southwest Water Company	11.8	11.9	11.9
Average			10.4 % (5)

Conclusion

Proxy Group of Six C. A. Turner Water Companies	10.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies	11.1 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	10.8 %

Notes: (1) See Equation (7-2) on page 5 of this Schedule.

(2) Calculated using historical and projected growth in DPS, EPS, and BR+SV for each company calculated from the individual growth rates shown on page 1 of Aqua Schedule 3.13 in a manner identical to the conclusion of growth for each proxy group shown in column 9 on page 1 of Aqua Schedule 3.13.

(3) The average 3-month closing market price is based upon the market price on the last trading day of each of the three months ended November 30, 2004.

(4) Calculated using the average projected five year growth rate in EPS from column 7 on page 1 of Aqua Schedule 3.13.

(5) Includes only those indicated common equity cost rates which are greater than 8.6%, i.e., 200 basis points above the prospective yield on A rated Moody's public utility bonds of 6.6% (from page 1 of Aqua Schedule 3.14.)

REGULATORY FINANCE:

UTILITIES' COST OF CAPITAL

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in collaboration with
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Chapter 7
Alternative DCF Models

7.1 The Quarterly DCF Model

The standard annual form of the DCF model:

$$K = D_1/P_0 + g$$

assumes an annual dividend payment, a yearly increase in dividends starting exactly one year from the present, a constant rate of dividend growth, and a stock price P_0 that is determined on a dividend payment date. But because dividends are normally paid quarterly, the investor's required return should be assessed with a DCF model that recognizes quarterly payments.

It is a rudimentary tenet of security valuation theory discussed in Chapter 4 that when determining investor return requirements, the cost of equity is the discount rate that equates the present value of future cash receipts to the observed market price. Clearly, given that dividends are paid quarterly and given that the observed stock price reflects the quarterly nature of dividend payments, the market required return must recognize quarterly compounding, for the investor receives dividend checks and reinvests the proceeds on a quarterly schedule. Perforce, a stock that pays 4 quarterly dividends of one dollar commands a higher price than a stock that pays a 4-dollar dividend a year hence. Since investors are aware of the quarterly timing of dividend payments and since the stock price already fully reflects the quarterly payment of dividends, it is essential that the DCF model used to estimate equity costs also reflect the actual timing of quarterly dividends.

The traditional annual DCF model is based on the limiting assumptions that dividends are paid annually, and that dividends increase once a year starting exactly one year from the present. These assumptions are unnecessarily restrictive. Most companies, including utilities, in fact pay dividends on a quarterly basis. The quarterly DCF model discussed in subsequent sections of this chapter rests on the exact same assumptions as the annual DCF model except that the DCF model is refined to reflect the actual corporate practice of paying dividends quarterly rather than once a year. The quarterly version of the DCF model also assumes that the dividend rate is raised once a year instead of every quarter.

As both a practical and theoretical matter, stock yield calculations must be adjusted for the receipt of cash flows on a quarterly basis. The annual DCF

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model inherently produces incorrect results because it assumes that all cash flows received by investors are paid annually. By analogy, a bank rate on deposits that does not take into consideration the timing of the interest payments understates the true yield if the customer receives the interest payments more than once a year. The actual yield will exceed the stated nominal rate. Bond yield calculations are also routinely adjusted for the receipts of semi-annual interest payments. What is true for bank deposits and for bonds is equally germane for common stocks.

Most, if not all, finance textbooks discuss frequency of compounding in computing the yield on a financial security. The handbooks that accompany popular financial calculators used almost universally by the financial community contain abundant directions with respect to frequency of compounding.

Appendix 7-A formally derives the quarterly DCF model, which has the following form:

$$K = \frac{[D_1 (1 + K)^{3/4} + D_2 (1 + K)^{1/2} + D_3 (1 + K)^{1/4} + D_4]}{P_0} + g \qquad (7\text{-}1)$$

where D_1, D_2, D_3, D_4 = quarterly dividends expected over the coming year

g = expected growth in dividends

P_0 = current stock price

K = required return on equity

Equation 7-1 must be solved by iteration because K appears on both sides of the equation. Note that an even more general form of the quarterly DCF model can be derived for the case where the stock price is not determined on a dividend payment date. If we let f_1, f_2, f_3, and f_4 denote the fraction of the year before the quarterly dividends are received, Equation 7-1 becomes:

$$K = \frac{[D_1 (1 + K)^{1-f_1} + D_2 (1 + K)^{1-f_2} + D_3 (1 + K)^{1-f_3} + D_4^{1-f_4}]}{P_0} + g \qquad (7\text{-}2)$$

In the special case where the stock price happens to be determined on a dividend payment date, f_1, f_2, f_3, and f_4 are equal to 0.25, 0.50, 0.75 and 1.00 and Equation 7-2 reduces back to Equation 7-1.

The two-stage non-constant growth DCF model described in Chapter 4 has a quarterly counterpart:

$$P_0 = \frac{D_1(1+g)}{(1+K)^{0.25}} + \frac{D_2(1+g)}{(1+K)^{0.50}}$$

$$+ \frac{D_3(1+g)}{(1+K)^{0.75}} + \frac{D_3(1+g)}{(1+K)^{1.00}}$$

$$+ \frac{D_1(1+g)^2}{(1+K)^{1.25}} + \frac{D_2(1+g)^2}{(1+K)^{1.50}}$$

$$+ \frac{D_3(1+g)^2}{(1+K)^{1.75}} + \frac{D_3(1+g)^2}{(1+K)^{2.00}}$$

$$+ \frac{P_2}{(1+K)^{2.00}} \qquad (7\text{-}3)$$

The symbol g represents the first stage growth rate while P_2 represents the stock price in period 2 that is obtained by applying the quarterly DCF model using the second-stage growth rate.

Intuitively, the quarterly form of the DCF model described by Equation 7-1 resembles the standard annual form, but with a slightly modified dividend yield component. Letting $D_1' = D_1(1+K)^{3/4} + D_2(1+K)^{1/2} + D_3(1+K)^{1/4} + D_4$ in Equation 7-1, the quarterly DCF equation becomes:

$$K = D_1'/P_0 + g \qquad (7\text{-}4)$$

which is very similar to the annual version. One can think of the D_1' term as an augmented D_1 term that simply captures the added time value of money associated with investors receiving successive quarterly dividends and reinvesting them over the remainder of the year at $K\%$. That is to say, during the course of one year, the investor has the value of the first quarter's dividend for 3/4 of the year; the second quarter dividend for 1/2 of the year; the third quarter dividend for 1/4 of the year, and the fourth quarter dividend is received at the end of the year. The following illustration shows how to implement the quarterly DCF model and estimate the investor's required market return.

Regulatory Finance

EXAMPLE 7-1

The common stock of Consolidated Natural Gas (CNG) is trading at $52.13. The dividend is expected to increase annually at a constant rate of 8.8%. The current quarterly dividend rate is $0.48 and has been in effect for two quarters. Thus, an investor buying CNG stock expects to receive, in the next year, two more dividends at the existing rate of $0.48 and two dividends at the new rate of $0.48(1 + g). The cost of equity capital is obtained by solving iteratively the quarterly version of the DCF model in Equation 7-1 by means of a computer spreadsheet. To solve that equation, the following input data for CNG:

$$D_1 = \$0.48$$

$$D_2 = \$0.48$$

$$D_3 = \$0.48(1 + .0880) = \$0.52$$

$$D_4 = \$0.48(1 + .0880) = \$0.52$$

$$P_0 = \$52.13$$

$$g = 8.80\%$$

are substituted into Equation 7-1 as follows:

$$K = \frac{0.48(1 + K)^3 + 0.48(1 + K)^2 + 0.52(1 + K) + 0.52}{\$52.13} + .0880$$

The equation is solved iteratively by successive approximations for K, the cost of equity. Here $K = 12.82\%$.

Note that the annual DCF model produces an estimate of 12.64%, which is less than the 12.82% estimate derived from the quarterly DCF model.

$$K = D/P_0 + g = \$2.00/\$52.13 + .088 = 12.64\%$$

The difference is attributable to the time value of money associated with receiving quarterly dividends. The annual version of the DCF model typically understates the cost of equity by approximately 30-40 basis points, depending on the magnitude of the dividend yield component.

The cost of equity capital estimate of 12.82% should be translated into a fair return on equity by allowing for a 5% flotation costs factor. This is accomplished by dividing the dividend yield component of the cost of equity figure by 0.95 to produce a fair DCF rate of return on equity of 13.03%.

7.2 Other Alternative DCF Models

Other alternative functional forms of the DCF model are available but are largely unrealistic and/or theoretically incorrect. The continuous compounding DCF model, for example, is developed assuming that dividends are paid continuously rather than at discrete time intervals.[1] Clearly, this model does not reflect reality, any more than does the annual DCF model, which assumes that dividends are paid once a year at the end of the year. The continuous DCF model has the following form:

$$K_c = D_0/P_0 + g \qquad (7\text{-}5)$$

where $\quad K_c \quad$ = investor's expected return from the continuous DCF model

$\qquad D_0 \quad$ = annual per share dividend at time 0, i.e., current dividend

Another DCF model sometimes used by analysts, notably by the Federal Energy Regulatory Commission in its determination of the electric utility industry's generic rate of return on equity before 1993, lies halfway between the continuous and annual forms of the DCF model:

$$K_{ad\,hoc} = D_0 (1 + 0.5G)/P_0 + g \qquad (7\text{-}6)$$

where $\quad K_{ad\,hoc} \quad$ = investor's expected return from the ad hoc DCF model

This "ad hoc" DCF model is based on the arbitrary assumption that the firm is halfway into its quarterly dividend cycle and assigns half a year's growth to the dividend. Of course, the model does not reflect reality and is arbitrary in nature. Only the quarterly compounding DCF model reflects reality, is theoretically correct, and is computationally tractable.

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[1] The effective return under continuous compounding is computed with the following formula:

$$K_c = \frac{D_0\,[K_c/\ln(1 + k_e)] + g}{P_0}$$

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Derivation of Dividend Yield for Use in the
Discounted Cash Flow Model

	Dividend Yield		
	Spot (12/07/04) (1)	Average of Last 3 Months (2)	Average Dividend Yield (3)
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	3.7 %	3.6 %	3.7 %
Aqua America, Inc.	2.2	2.3	2.3
Artesian Resources Corp.	2.9	3.0	3.0
California Water Services Group	3.4	3.6	3.5
Middlesex Water Company	3.4	3.6	3.5
York Water Company	3.2	3.2	3.2
Average	3.1 %	3.2 %	3.2 %
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	3.7	3.6 %	3.7 %
Aqua America, Inc.	2.2	2.3	2.3
California Water Services Group	3.4	3.6	3.5
Average	3.1 %	3.2 %	3.2 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least			
AGL Resources, Inc.	3.6	3.7 %	3.7 %
American States Water Co.	3.7	3.6	3.7
Aqua America, Inc.	2.2	2.3	2.3
California Water Services Group	3.4	3.6	3.5
Cinergy Corp.	4.5	4.7	4.6
Consolidated Edison, Inc.	5.2	5.2	5.2
Dominion Resources, Inc.	4.0	4.1	4.1
Green Mountain Power Corp.	3.3	3.3	3.3
KeySpan Corp.	4.6	4.5	4.6
Middlesex Water Company	3.4	3.6	3.5
Northwest Natural Gas Co.	4.0	4.0	4.0
Pinnacle West Capital Corp.	4.4	4.4	4.4
PNM Resources, Inc.	2.5	2.7	2.6
Southern Company	4.4	4.6	4.5
Southwest Water Company	1.6	1.6	1.6
Average	3.7 %	3.7 %	3.7 %

Notes: (1) The spot dividend yield is the current annualized dividend per share divided by the spot market price on 12/07/04.

(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 November 30, 2004.

(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: Standard & Poor's Compustat Services, Inc., PC Plus Research Insight Database finance.yahoo.com

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Current Institutional Holdings (1) and Individual Holdings (2) for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	1	2
	December 2004 Percentage of Institutional Holdings (1)	December 2004 Percentage of Individual Holdings (2)
Proxy Group of Six C. A. Turner Water Companies		
American States Water Co.	39.4 %	60.6 %
Aqua America	28.5	71.5
Artesian Resources Corp.	10.0	90.0
California Water Service Group	22.1	77.9
Middlesex Water Company	17.3	82.7
York Water Company	6.2	93.8
Average	20.6 %	79.4 %
Proxy Group of Three Value Line Water Companies		
American States Water Co.	39.4 %	60.6 %
Aqua America	28.5	71.5
California Water Service Group	22.1	77.9
Average	30.0 %	70.0 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance		
AGL Resources, Inc.	55.2 %	44.8 %
American States Water Co.	39.4	60.6
Aqua America, Inc.	28.5	71.5
California Water Services Group	22.1	77.9
Cinergy Corp.	63.6	36.4
Consolidated Edison, Inc.	43.0	57.0
Dominion Resources, Inc.	61.9	38.1
Green Mountain Power Corp.	41.7	58.3
KeySpan Corp.	49.3	50.7
Middlesex Water Company	17.3	82.7
Northwest Natural Gas Co.	47.1	52.9
Pinnacle West Capital Corp.	73.2	26.8
PNM Resources, Inc.	90.8	9.2
Southern Company	39.9	60.1
Southwest Water Company	26.1	73.9
Average	46.6 %	53.4 %

Notes: (1) The percentage of institutional holdings is calculated by dividing the number of shares held by
         institutions by the number of shares outstanding.

(2) (1 - column 1).

Source of Information: yahoo.investor.reuters.com

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Calculation of Historical BR + SV

	1	2	3	4	5
	BR (1)	S Factor (2)	V Factor (3)	SV (4)	BR + SV (5)
Proxy Group of Six C. A. Turner Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
Artesian Resources Corp.	2.2	8.0	40.6	3.2	5.4
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Middlesex Water Company	1.5	1.5	56.4	0.8	2.3
York Water Company	2.0	2.1	55.0	1.2	3.2
Average	2.7 %	6.1 %	51.5 %	3.3 %	6.0 %
Proxy Group of Three Value Line (Standard Edition) Water Companies					
American States Water Co.	3.3 %	2.6 %	43.4 %	1.1 %	4.4 %
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Average	3.5 %	8.3 %	52.4 %	4.8 %	8.3 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance					
AGL Resources, Inc.	4.5 %	6.2 %	42.4 %	2.6 %	7.1 %
American States Water Co.	3.3	2.6	43.4	1.1	4.4
Aqua America, Inc.	5.3	15.9	65.0	10.3	15.6
California Water Services Group	1.8	6.3	48.8	3.1	4.9
Cinergy Corp.	4.1	2.4	41.3	1.0	5.1
Consolidated Edison, Inc.	2.8	2.2	31.6	0.7	3.5
Dominion Resources, Inc.	3.1	15.4	44.4	6.8	9.9
Green Mountain Power Corp.	5.8	2.1	(20.9)	(0.4)	5.4
KeySpan Corp.	3.5	4.2	34.9	1.5	5.0
Middlesex Water Company	1.5	1.5	56.4	0.8	2.3
Northwest Natural Gas Co.	2.9	0.9	27.6	0.2	3.1
Pinnacle West Capital Corp.	5.8	1.5	25.5	0.4	6.2
PNM Resources, Inc.	5.9	1.0	(1.8)	0.0	5.9
Southern Company	3.3	2.5	52.2	1.3	4.6
Southwest Water Company	8.3	7.2	54.9	4.0	12.3
Average	4.1 %	4.8 %	36.4 %	2.2 %	6.4 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Six C. A. Turner Water Companies and the
Proxy Group of Three Value Line (Standard Edition) Water Companies
for the Years 1999 -2003

	1	2	3	4	5	6
						Five-Year Average 1999-2003 Internal Growth
	2003	2002	2001	2000	1999	Rate, i.e., BR
Proxy Group of Six C. A. Turner Water Companies						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
Artesian Resources Corp.						
Common Equity Return Rate	7.41 %	9.67 %	9.80 %	7.39 %	9.74 %	
Retention Ratio	19.24	34.96	31.35	8.12	27.74	
Internal Growth Rate (1)	1.43	3.38	3.07	0.60	2.70	2.2
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Middlesex Water Company						
Common Equity Return Rate	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	
Retention Ratio	(6.51)	13.33	5.88	(21.76)	22.73	
Internal Growth Rate (1)	(0.53)	1.35	0.55	(1.56)	2.51	1.5 (2)
York Water Company						
Common Equity Return Rate	11.66 %	10.37 %	11.73 %	11.88 %	10.31 %	
Retention Ratio	21.04	12.32	21.97	21.50	10.46	
Internal Growth Rate (1)	2.45	1.28	2.58	2.55	1.08	2.0
Average						2.7 %
Proxy Group of Three Value Line (Standard Edition) Water Companies						
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 % (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Average						3.5 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Fifteen Utilities Seleced on the Basis of Least Relative Distance
for the Years 1999 -2003

	1	2	3	4	5	6
						Five-Year Average 1999-2003 Internal Growth
	2003	2002	2001	2000	1999	Rate. i.e., BR
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance						
AGL Resources, Inc.						
Common Equity Return Rate	16.39 %	14.91 %	13.76 %	11.09 %	11.31 %	
Retention Ratio	48.49	41.26	34.08	15.89	16.53	
Internal Growth Rate (1)	7.95	6.15	4.69	1.76	1.87	4.5 %
American States Water Co.						
Common Equity Return Rate	5.59 %	9.83 %	10.37 %	10.24 %	10.23 %	
Retention Ratio	(12.98)	35.04	35.65	32.06	28.40	
Internal Growth Rate (1)	(0.73)	3.44	3.70	3.28	2.91	3.3 (2)
Aqua America, Inc.						
Common Equity Return Rate	12.30 %	13.92 %	13.34 %	13.32 %	12.17 %	
Retention Ratio	43.61	45.22	42.95	42.40	27.15	
Internal Growth Rate (1)	5.36	6.29	5.73	5.65	3.30	5.3
California Water Services Group						
Common Equity Return Rate	8.68 %	9.56 %	7.49 %	10.54 %	11.43 %	
Retention Ratio	8.79	10.13	(14.22)	18.03	30.37	
Internal Growth Rate (1)	0.76	0.97	(1.07)	1.90	3.47	1.8 (2)
Cinergy Corp.						
Common Equity Return Rate	12.42 %	12.73 %	15.44 %	14.68 %	15.54 %	
Retention Ratio	25.79	24.85	35.27	28.59	29.51	
Internal Growth Rate (1)	3.20	3.16	5.45	4.20	4.59	4.1
Consolidated Edison, Inc.						
Common Equity Return Rate	8.51 %	11.53 %	12.25 %	10.71 %	12.25 %	
Retention Ratio	6.29	29.24	31.59	20.75	31.75	
Internal Growth Rate (1)	0.54	3.37	3.87	2.22	3.89	2.8
Dominion Resources, Inc.						
Common Equity Return Rate	9.15 %	14.66 %	7.08 %	7.07 %	10.95 %	
Retention Ratio	13.07	46.92	(19.30)	(48.19)	10.53	
Internal Growth Rate (1)	1.20	6.88	(1.37)	(3.41)	1.15	3.1 (2)
Green Mountain Power Corp.						
Common Equity Return Rate	10.78 %	11.71 %	11.24 %	(0.32) %	2.95 %	
Retention Ratio	63.30	70.82	71.45	1082.62	3.76	
Internal Growth Rate (1)	6.82	8.29	8.03	(3.46)	0.11	5.8 (2)

See page 5 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Historical Internal Growth Rate (1), i.e., BR, for
the Proxy Group of Fifteen Utilities Seleced on the Basis of Least Relative Distance
for the Years 1999 -2003

	1	2	3	4	5	6
						Five-Year Average 1999-2003 Internal Growth
	2003	2002	2001	2000	1999	Rate, i.e., BR
KeySpan Corp.						
Common Equity Return Rate	12.66 %	13.42 %	8.33 %	10.22 %	7.80 %	
Retention Ratio	32.52	35.60	(3.78)	15.19	(10.00)	
Internal Growth Rate (1)	4.12	4.78	(0.31)	1.55	(0.78)	3.5 % (2)
Middlesex Water Company						
Common Equity Return Rate	8.17 %	10.10 %	9.37 %	7.16 %	11.05 %	
Retention Ratio	(6.51)	13.33	5.88	(21.76)	22.73	
Internal Growth Rate (1)	(0.53)	1.35	0.55	(1.56)	2.51	1.5 (2)
Northwest Natural Gas Co.						
Common Equity Return Rate	9.24 %	8.73 %	10.38 %	10.29 %	10.08 %	
Retention Ratio	28.53	22.86	34.48	31.22	27.95	
Internal Growth Rate (1)	2.64	2.00	3.58	3.21	2.82	2.9
Pinnacle West Capital Corp.						
Common Equity Return Rate	8.36 %	8.30 %	13.41 %	13.18 %	12.35 %	
Retention Ratio	31.73	35.99	60.53	60.07	58.37	
Internal Growth Rate (1)	2.65	2.99	8.12	7.92	7.21	5.8
PNM Resources, Inc.						
Common Equity Return Rate	5.71 %	6.41 %	15.47 %	11.08 %	9.04 %	
Retention Ratio	37.23	45.95	79.11	68.77	48.17	
Internal Growth Rate (1)	2.13	2.95	12.24	7.62	4.35	5.9
Southern Company						
Common Equity Return Rate	16.06 %	15.79 %	11.98 %	9.99 %	13.43 %	
Retention Ratio	31.89	27.31	17.61	12.17	27.82	
Internal Growth Rate (1)	5.12	4.31	2.11	1.22	3.74	3.3
Southwest Water Company						
Common Equity Return Rate	10.20 %	10.32 %	12.12 %	12.16 %	15.53 %	
Retention Ratio	64.23	64.02	67.92	67.56	75.16	
Internal Growth Rate (1)	6.55	6.61	8.23	8.22	11.67	8.3

Average   4.1 %

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

	1	2	3	4	5	6	7	8	9	10	11	12
	1998 Common Shares Outstanding (1)	97-98 Growth	1999 Common Shares Outstanding (1)	98-99 Growth	2000 Common Shares Outstanding (1)	99-00 Growth	2001 Common Shares Outstanding (1)	00-01 Growth	2002 Common Shares Outstanding (1)	01-02 Growth	2003 Common Shares Outstanding (1)	Five Year Average Common Share Growth
Proxy Group of Six C. A. Turner Water Companies												
American States Water Co.	13.437	0.0 %	13.437	12.5 %	15.120	0.0 %	15.120	0.4 %	15.181	0.2 %	15.212	2.6 %
Aqua America, Inc.	54.154	47.9	80.104	4.7	83.869	1.9	85.483	(0.7)	84.896	9.1	92.589	15.9 (2)
Artesian Resources Corp.	2.704	10.8	2.997	0.8	3.020	1.3	3.060	26.2	3.863	1.0	3.901	8.0
California Water Services Group	12.619	2.6	12.936	17.1	15.146	0.2	15.182	0.0	15.182	11.5	16.932	6.3
Middlesex Water Company	9.794	2.1	10.002	1.0	10.098	0.7	10.168	1.8	10.356	2.0	10.567	1.5
York Water Company	5.960	(1.0)	5.902	1.8	6.010	5.0	6.308	0.9	6.365	0.8	6.419	2.1 (2)
Average												6.1 %
Proxy Group of Three Value Line (Standard Edition) Water Companies												
American States Water Co.	13.437	0.0 %	13.437	12.5 %	15.120	0.0 %	15.120	0.4 %	15.181	0.2 %	15.212	2.6 %
Aqua America, Inc.	54.154	47.9	80.104	4.7	83.869	1.9	85.483	(0.7)	84.896	9.1	92.589	15.9 (2)
California Water Services Group	12.619	2.6	12.936	17.1	15.146	0.2	15.182	0.0	15.182	11.5	16.932	6.3
Average												8.3 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance												
AGL Resources, Inc.	57.300	(0.3) %	57.100	(5.4) %	54.000	2.0 %	55.100	2.9 %	56.700	13.8 %	64.500	6.2 % (2)
American States Water Co.	13.437	0.0	13.437	12.5	15.120	0.0	15.120	0.4	15.181	0.2	15.212	2.6
Aqua America, Inc.	54.154	47.9	80.104	4.7	83.869	1.9	85.483	(0.7)	84.896	9.1	92.589	15.9 (2)
California Water Services Group	12.619	2.6	12.936	17.1	15.146	0.2	15.182	0.0	15.182	11.5	16.932	6.3
Cinergy Corp.	158.665	0.2	158.923	0.0	158.968	0.3	159.403	5.8	168.663	5.7	178.337	2.4
Consolidated Edison, Inc.	232.833	(8.2)	213.811	(0.8)	212.027	0.1	212.147	0.8	213.933	5.6	225.840	2.2 (2)
Dominion Resources, Inc.	194.500	(4.2)	186.300	31.9	245.800	7.7	264.700	16.4	308.000	5.5	325.000	16.4 (2)
Green Mountain Power Corp.	5.313	1.8	5.410	2.9	5.567	2.1	5.685	(12.8)	4.955	1.6	5.033	2.1 (2)
KeySpan Corp.	130.420	2.6	133.866	1.9	136.363	2.2	139.430	2.1	142.425	12.1	159.664	4.2
Middlesex Water Company	9.794	2.1	10.002	1.0	10.098	0.7	10.168	1.8	10.356	2.0	10.567	1.5
Northwest Natural Gas Co.	24.853	1.0	25.092	0.6	25.233	0.0	25.228	1.4	25.586	1.4	25.938	0.9
Pinnacle West Capital Corp.	84.825	0.0	84.825	0.0	84.825	0.0	84.825	7.6	91.255	0.0	91.288	1.5
PNM Resources, Inc.	62.661	(2.6)	61.054	(3.9)	58.677	0.0	58.677	0.0	58.677	2.9	60.388	1.0 (2)
Southern Company	697.805	(4.6)	665.796	2.3	681.158	2.5	698.344	2.6	716.402	2.6	734.800	2.5 (2)
Southwest Water Company	11.634	1.8	11.846	5.9	12.545	2.5	12.856	(3.6)	12.392	18.4	14.669	7.2 (2)
Average												4.8 %

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

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Database

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
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
	1999	2000	2001	2002	2003	Five Year	
	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Market to Book Ratio (1)	Average Market to Book Ratio	V Factor (2)
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
Artesian Resources Corp.	168.0	163.3	163.8	162.1	184.5	168.3	40.60
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Middlesex Water Company	218.3	209.9	236.9	232.9	247.9	229.2	56.40
York Water Company	174.4	154.2	214.9	281.5	286.9	222.4	55.00
Average						213.0 %	51.50 %
Proxy Group of Three Value Line (Standard Edition) Water Companies							
American States Water Co.	177.2 %	170.8 %	174.8 %	180.6 %	180.3 %	176.7 %	43.40 %
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Average						219.3 %	52.40 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance							
AGL Resources, Inc.	169.6 %	156.0 %	182.9 %	171.0 %	188.6 %	173.6 %	42.40 %
American States Water Co.	177.2	170.8	174.8	180.6	180.3	176.7	43.40
Aqua America, Inc.	287.1	252.9	303.5	289.8	295.6	285.8	65.00
California Water Services Group	201.5	197.1	197.4	181.6	199.8	195.5	48.80
Cinergy Corp.	178.3	161.4	176.7	164.8	170.4	170.3	41.30
Consolidated Edison, Inc.	170.0	128.5	142.4	143.5	147.1	146.3	31.60
Dominion Resources, Inc.	162.6	190.4	208.3	158.2	179.4	179.8	44.40
Green Mountain Power Corp.	55.7	65.7	89.0	101.4	111.7	82.7	(20.90)
KeySpan Corp.	123.6	155.9	171.7	158.5	158.6	153.7	34.90
Middlesex Water Company	218.3	209.9	236.9	232.9	247.9	229.2	56.40
Northwest Natural Gas Co.	140.5	129.1	132.7	144.7	144.1	138.2	27.60
Pinnacle West Capital Corp.	142.8	144.9	153.5	116.1	113.9	134.2	25.50
PNM Resources, Inc.	85.7	94.5	122.6	94.6	93.7	98.2	(1.80)
Southern Company	185.5	187.6	208.7	230.4	233.3	209.1	52.20
Southwest Water Company	222.9	204.8	234.6	240.3	208.2	221.8	54.90
Average						173.0 %	36.40 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Calculation of Projected BR + SV

	1	2	3	4	5	6	7	8	9	10	11
	Common Shares Outstanding (1) (000,000)			Projected 2007 - 2009 (1)							
	Actual 2003	Projected 2007-2009	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)
Proxy Group of Six C. A. Turner Water Companies											
American States Water Co.	15.21	19.00	4.6 %	30.00	20.00	17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
Artesian Resources Corp.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Middlesex Water Company	10.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
York Water Company	8.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			4.2 %					43.6 %	1.6 %	5.6 %	7.2 %
Proxy Group of Three Value Line (Standard Edition) Water Companies											
American States Water Co.	15.21	19.00	4.6 %	$30.00	$20.00	$17.50	$25.00	30.0 %	1.4 %	5.7 %	7.1 %
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Average			4.2 %					43.6 %	1.6 %	5.6 %	7.2 %
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance											
AGL Resources, Inc.	64.60	65.00	0.2 %	$40.00	$30.00	$20.10	$35.00	42.6 %	0.1 %	6.4 %	6.5 %
American States Water Co.	15.21	19.00	4.6	30.00	20.00	17.50	25.00	30.0	1.4	5.7	7.1
Aqua America, Inc.	92.59	100.00	1.6	30.00	20.00	9.60	25.00	61.6	1.0	6.3	7.3
California Water Services Group	16.93	23.00	6.3	35.00	25.00	18.25	30.00	39.2	2.5	4.7	7.2
Cinergy Corp.	178.44	198.90	2.2	45.00	35.00	27.05	40.00	32.4	0.7	3.6	4.3
Consolidated Edison, Inc.	225.84	251.80	2.2	45.00	40.00	31.55	42.50	25.8	0.6	1.8	2.4
Dominion Resources, Inc.	325.00	335.00	0.6	90.00	65.00	4.00	77.50	94.8	0.6	7.1	7.7
Green Mountain Power Corp.	5.03	5.35	1.2	30.00	19.00	23.00	24.50	6.1	0.1	6.0	6.1
KeySpan Corp.	159.66	162.50	0.4	60.00	35.00	29.25	42.50	31.2	0.1	5.4	5.5
Middlesex Water Company	10.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Northwest Natural Gas Co.	25.94	28.00	1.5	35.00	25.00	23.50	30.00	21.7	0.3	4.0	4.3
Pinnacle West Capital Corp.	91.29	91.40	0.0	45.00	40.00	36.50	42.50	14.1	0.0	3.3	3.3
PNM Resources, Inc.	60.39	61.00	0.2	25.00	20.00	21.60	22.50	4.0	0.0	3.7	3.7
Southern Company	734.80	780.00	1.2	35.00	25.00	17.00	30.00	43.3	0.5	4.4	4.9
Southwest Water Company	14.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Average			1.7 %					34.4 %	0.6 %	4.7 %	5.3 %

NA = Not Available

Notes: (1) From pages 10 through 25 of this Schedule.
(2) The S Factor is the six or five year compound growth rate between the 2002 and 2007 (mid-point of 2006-2008 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 9, column 14 of this Schedule.
(7) Column 9 + column 10.

Source of Information: Value Line Investment Survey, September 17, October 1, October 29, November 12, and December 3, 2004

AGL RESOURCES NYSE-ATG

| RECENT PRICE | 30.74 | P/E RATIO | 14.9 (Trailing: 14.4 / Median: 14.0) | RELATIVE P/E RATIO | 0.87 | DIV'D YLD | 3.8% | VALUE LINE |

TIMELINESS	4	Raised 8/6/04
SAFETY	2	New 7/27/90
TECHNICAL	3	Lowered 9/17/04
BETA	.80	(1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	(+30%)	10%
Low	30	(Nil)	3%

Insider Decisions

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

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	72	101	84
to Sell	97	67	75
Hld's(000)	34745	34511	35012

LEGENDS
— 1.15 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 12/85
Options: Yes
Shaded area indicates recession

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	14.0	13.4
3 yr.	63.6	29.3
5 yr.	103.1	54.2

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
22.97	21.63	22.58	20.26	20.43	22.73	23.59	19.32	21.91	22.75	23.36	18.71	11.25	19.04	15.32	15.25	29.00	31.90	Revenues per sh A	38.90
1.90	1.93	2.04	2.07	2.31	2.25	2.24	2.33	2.49	2.42	2.65	2.29	2.86	3.31	3.39	3.47	3.65	3.85	"Cash Flow" per sh	4.20
1.13	.95	1.01	1.04	1.13	1.08	1.17	1.33	1.37	1.37	1.41	.91	1.29	1.50	1.62	2.08	2.10	2.20	Earnings per sh A B	2.40
.88	.94	.98	1.02	1.03	1.04	1.04	1.04	1.06	1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.15	1.16	Div'ds Decl'd per sh Cₐ	1.16
2.86	2.65	2.73	2.95	2.74	2.49	2.37	2.17	2.37	2.59	2.05	2.51	2.92	2.83	3.30	2.46	2.45	2.45	Cap'l Spending per sh	2.55
8.72	8.83	8.97	9.42	9.70	9.90	10.19	10.12	10.56	10.99	11.42	11.59	11.50	12.19	12.52	14.66	15.50	16.55	Book Value per sh	20.10
42.47	43.40	44.32	47.57	48.69	49.72	50.86	55.02	55.70	56.60	57.30	57.10	54.00	55.10	56.70	64.50	65.00	65.00	Common Shs Outst'g D	65.00
11.1	13.7	14.2	15.3	15.5	17.9	15.1	12.6	13.8	14.7	13.9	21.4	13.6	14.6	12.5	12.5	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	15.0
.92	1.04	1.05	.98	.94	1.06	.99	.84	.86	.85	.72	1.22	.88	.75	.68	.72			Relative P/E Ratio	1.00
7.1%	7.2%	6.8%	6.4%	5.9%	5.4%	5.9%	6.2%	5.6%	5.4%	5.5%	5.5%	6.2%	4.9%	4.7%	4.3%			Avg Ann'l Div'd Yield	3.3%

CAPITAL STRUCTURE as of 6/30/04
Total Debt 1123.0 mill. Due in 5 Yrs 383.0 mill.
LT Debt $962.0 mill. LT Interest $60.0 mill.
(Total interest coverage: 2.9x)
Leases, Uncapitalized Annual rentals $11.8 mill.
Pension Assets-12/03 $258.9 mill. Oblig. $314.6 mill.
Pfd Stock None
Common Stock 64,946,102 shs.
as of 7/23/04
MARKET CAP: $2.0 billion (Mid Cap)

	1199.9	1063.0	1220.2	1287.6	1338.6	1068.6	607.4	1049.3	868.9	983.7	1885	2075	Revenues ($mill) A	2400
	63.2	74.3	75.6	76.6	80.6	52.1	71.1	82.3	103.0	132.4	125	145	Net Profit ($mill)	155
	35.2%	36.9%	38.6%	37.9%	32.5%	33.1%	34.3%	40.7%	36.0%	35.9%	36.0%	36.0%	Income Tax Rate	36.0%
	5.3%	7.0%	6.2%	5.9%	6.0%	4.9%	11.7%	7.8%	11.9%	13.5%	7.3%	6.9%	Net Profit Margin	6.5%
	49.0%	47.4%	46.2%	48.7%	47.5%	45.3%	45.9%	61.3%	58.3%	50.3%	49.0%	49.0%	Long-Term Debt Ratio	50.0%
	45.8%	47.6%	48.9%	45.9%	47.1%	49.2%	48.3%	38.7%	41.7%	49.7%	51.0%	51.0%	Common Equity Ratio	50.0%
	1131.5	1170.3	1201.3	1356.4	1388.4	1345.8	1286.2	1736.3	1704.3	1901.4	1965	2100	Total Capital ($mill)	2605
	1297.4	1350.3	1415.4	1496.6	1534.0	1598.9	1637.5	2058.9	2194.2	2352.4	2500	2700	Net Plant ($mill)	3060
	7.5%	8.2%	8.0%	7.3%	7.6%	5.7%	7.4%	6.5%	8.1%	8.9%	7.0%	7.0%	Return on Total Cap'l	6.0%
	11.0%	12.1%	11.7%	11.0%	11.1%	7.1%	10.2%	12.3%	14.5%	14.0%	13.5%	13.5%	Return on Shr. Equity	12.0%
	11.3%	12.5%	12.1%	11.3%	12.3%	7.9%	11.5%	12.3%	14.5%	14.0%	13.5%	13.5%	Return on Com Equity	12.0%
	3.0%	4.5%	3.8%	3.2%	4.4%	NMF	3.2%	4.2%	7.0%	6.6%	6.0%	6.5%	Retained to Com Eq	6.0%
	75%	66%	71%	74%	64%	101%	72%	65%	52%	53%	55%	52%	All Div'ds to Net Prof	49%

CURRENT POSITION	2002	2003	6/30/04
(\$MILL.)			
Cash Assets	8.4	16.5	54.0
Other	578.0	730.8	796.0
Current Assets	586.4	747.3	850.0
Accts Payable	91.1	73.7	535.0
Debt Due	418.6	77.0	161.0
Other	506.1	903.7	320.0
Current Liab.	1015.8	1054.4	1016.0
Fix. Chg. Cov.	242%	172%	225%

BUSINESS: AGL Resources, Inc. is a public utility holding company. Its distribution subsidiaries are Atlanta Gas Light, Chattanooga Gas, and Virginia Natural Gas. The utilities have around 2 million customers in Georgia, primarily Atlanta, Virginia, and in southern Tennessee. Also engaged in nonregulated natural gas marketing and other, allied services. Also wholesales and retails propane. Nonregulated subsidiaries; Georgia Natural Gas Services markets natural gas at retail. Acquired Virginia Natural Gas, 10/00. Sold Utilipro, 3/01. Officers/directors own 1.2% of outstanding common shares (3/04 Proxy). President & CEO: Paula Rospot. Incorporated: Georgia. Address: 303 Peachtree St., N.E., Atlanta, GA 30308. Telephone: 404-584-9470. Internet: www.aglresources.com.

ANNUAL RATES	Past	Past	Est'd '01-'03
of change (per sh)	10 Yrs.	5 Yrs.	to '07-'09
Revenues	-2.5%	-6.0%	14.5%
"Cash Flow"	4.5%	6.0%	3.5%
Earnings	5.0%	5.5%	5.0%
Dividends	0.5%	0.5%	1.0%
Book Value	3.0%	3.5%	7.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A				Full Fiscal Year
	Dec.31	Mar.31	Jun.30	Sep.30	
2001	294.8	350.6	175.7	228.2	1049.3
	Mar.31	Jun.30	Sep.30	Dec.31	
2002	269.3	159.2	190.7	249.7	868.9
2003	352.5	186.6	166.3	278.3	983.7
2004	651	294	360	580	1885
2005	590	485	445	555	2075

Fiscal Year Ends	EARNINGS PER SHARE A B				Full Fiscal Year
	Dec.31	Mar.31	Jun.30	Sep.30	
2001	.41	.83	.17	.09	1.50
	Mar.31	Jun.30	Sep.30	Dec.31	
2002	.89	.21	.17	.55	1.82
2003	.98	.29	.27	.54	2.08
2004	1.00	.33	.25	.52	2.10
2005	.96	.38	.29	.57	2.20

Cal-endar	QUARTERLY DIVIDENDS PAID Cₐ				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2000	.27	.27	.27	.27	1.08
2001	.27	.27	.27	.27	1.08
2002	.27	.27	.27	.27	1.08
2003	.27	.28	.28	.28	1.11
2004	.28	.29	.29		

AGL Resources signed a definitive agreement to purchase NUI. The deal, subject to regulatory approval, calls for AGL to pay $220 million in cash and assume $471 million of the troubled utility's debt. NUI ran into difficulties following an overly aggressive move into nonregulated activities, which flopped and then spiraled into accounting irregularities and executive resignations. Subsequently, NUI shed most of its unregulated operations in the past year, retaining its gas utilities and gas storage and pipeline businesses. The acquisition will strengthen AGL's utilities footprint on the East Coast from Florida to New Jersey, and increase its service base by 20% to nearly 2.2 million customers. AGL hopes to close on the deal by November, and expects it to be accretive to earnings within the first year.

The company's thirst for expansion has extended beyond the NUI acquisition. It recently agreed to buy a natural gas storage facility from a subsidiary of American Electric Power for $86 million, plus another $9 million of marketable gas currently in inventory. The facility, located in Louisiana, consists of two salt dome gas storage caverns with 9.2 billion cubic feet of capacity. AGL made the move in order to provide additional access to natural gas for its regulated utilities. The deal is expected to close by October 1st.

Earnings for full-year 2004 should come in slightly ahead of last year's figure. Last quarter, AGL reported EPS of $0.33, compared to $0.29 a year earlier. The bottom line benefited from improvement in the company's utility operations, as a result of an increase in the average number of connected customers. Profits from AGL's nonregulated operations were down in the aggregate, however, as reduced volatility in gas prices lowered margins. We are holding our share-net estimate for 2004 unchanged at $2.10, but raising our 2005 estimate by a nickel, to $2.20, to account for the acquisitions.

This issue is a good-quality income stock. Its Price Stability (100) is excellent, and the stock provides a decent dividend yield. AGL's growth initiatives provide for decent capital gains potential for a utility, though the stock is already trading at company-record highs.
Michael P. Maloney *September 17, 2004*

(A) Fiscal year ends December 31st. Ended September 30th prior to 2002. (B) Diluted earnings per share. Next earnings report due late October. Excl. nonrecurring gains (losses): '88,... $0.15; '95, d$0.83; '99, $0.39; '00, $0.13; '01, $0.13; '03, d$0.07. (C) Dividends historically paid early March, June, Sept, and Dec. • Div'd reinvest. plan available. (D) In millions, ad-...justed for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	45
Earnings Predictability	65

AMER. STATES WATER NYSE-AWR

| RECENT PRICE | 24.09 | P/E RATIO | 17.3 (Trailing: 26.5 / Median: 16.0) | RELATIVE P/E RATIO | 0.99 | DIV'D YLD | 3.7% | VALUE LINE |

TIMELINESS 4 Raised 11/7/03	High: 16.3 14.7 14.0 16.1 17.1 19.5 26.5 25.3 26.4 29.0 29.0 26.8	Target Price Range 2007 2008 2009
SAFETY 3 New 2/4/00	Low: 13.1 10.2 10.5 12.5 13.5 14.1 14.8 16.7 19.0 20.3 21.6 20.8	
TECHNICAL 3 Raised 8/20/04	LEGENDS — 1.25 x Dividends p sh divided by Interest Rate .... Relative Price Strength 2-for-1 split 10/93 3-for-2 split 6/02 Options: No Shaded area indicates recession	
BETA .70 (1.00 = Market)		

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+25%)	9%
Low	20	(-15%)	Nil

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	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

	4Q2003	1Q2004	2Q2004
to Buy	45	47	45
to Sell	31	33	35
Hld's(000)	5663	5623	5584

Percent shares traded: 6 4 2

% TOT. RETURN 9/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	9.6	18.8
3 yr.	11.5	55.9
5 yr.	33.9	63.9

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC. 07-09	
8.58	9.12	9.58	9.15	10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.75	15.00	Revenues per sh	15.55
1.13	1.44	1.49	1.78	1.81	1.67	1.68	1.75	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.08	2.60	2.90	"Cash Flow" per sh	3.40
.65	.92	.94	1.19	1.15	1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.72	1.20	1.50	Earnings per sh A	2.00
.57	.69	.72	.73	.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.88	.90	Div'd Decl'd per sh B■	.96
2.39	2.46	2.53	2.77	2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	3.65	4.05	Cap'l Spending per sh	3.60
7.07	7.31	7.54	8.39	8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	14.65	15.35	Book Value per sh	17.50
9.35	9.39	9.43	9.91	9.96	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	15.12	15.18	15.21	16.75	17.25	Common Shs Outst'g C	19.00
14.2	9.7	10.2	8.8	10.6	13.4	12.8	11.6	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.9	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	13.0
1.18	.73	.76	.56	.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.85			Relative P/E Ratio	.85
7.4%	7.7%	7.5%	7.0%	6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%			Avg Ann'l Div'd Yield	3.6%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $284.3 mill. Due in 5 Yrs $60.0 mill.
LT Debt $229.5 mill. LT Interest $16.5 mill.
(Total interest coverage: 2.0x)

Leases, Uncapitalized: None
Pension Assets-12/03 $46.7 mill.
Oblig. $58.9 mill.
Pfd Stock None. Pfd Div'd None.

Common Stock 15,268,587 shs.
as of 8/9/04
MARKET CAP: $375 million (Small Cap)

122.7	129.8	151.5	153.8	148.1	173.4	184.0	197.5	209.2	212.7	230	255	Revenues ($mill)	300
11.3	12.2	13.5	14.1	14.6	16.1	18.0	20.4	20.3	11.9	21.0	26.5	Net Profit ($mill)	38.0
43.9%	41.9%	43.3%	41.1%	40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	40.0%	40.0%	Income Tax Rate	40.0%
--	--	--	--	--	--	--	--	--	--	Nil	Nil	AFUDC % to Net Profit	Nil
43.5%	46.6%	41.9%	43.0%	43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	51.0%	51.0%	Long-Term Debt Ratio	52.0%
55.5%	52.5%	57.3%	56.3%	55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	50.0%	49.0%	Common Equity Ratio	49.0%
213.5	230.6	256.0	268.4	277.1	328.2	371.1	447.6	444.4	442.3	490	545	Total Capital ($mill)	700
314.9	335.0	357.8	383.6	414.8	449.6	509.1	539.8	563.3	602.3	660	715	Net Plant ($mill)	850
7.1%	7.2%	6.9%	6.9%	6.6%	6.4%	6.1%	6.5%	4.6%	6.0%	6.5%	Return on Total Cap'l	7.0%
9.4%	9.9%	9.0%	9.2%	9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	9.0%	9.5%	Return on Shr. Equity	10.5%
9.5%	10.0%	9.0%	9.2%	9.4%	10.1%	9.3%	10.1%	9.5%	5.6%	9.0%	9.5%	Return on Com Equity	10.5%
1.6%	2.1%	2.4%	1.8%	2.1%	2.9%	3.0%	3.6%	3.3%	NMF	3.0%	3.5%	Retained to Com Eq	5.5%
84%	79%	73%	80%	78%	72%	68%	65%	65%	113%	67%	58%	All Div'ds to Net Prof	48%

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Southern California Water Company, it supplies water to 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 approximately 22,000 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00); 11,400 customers. Has about 520 employees. Off. & dir. own less than 1% of common stock (4/04 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Incorporated: CA. Add.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel.: 909-394-3600. Web: www.aswater.com.

CURRENT POSITION

($MILL.)	2002	2003	6/30/04
Cash Assets	18.4	12.8	7.0
Receivables	10.8	11.8	12.0
Inventory (Avg Cst)	.9	1.4	1.5
Other	21.7	32.4	23.6
Current Assets	51.8	58.4	44.1
Accts Payable	11.6	18.8	15.5
Debt Due	48.3	56.8	54.8
Other	19.6	20.3	22.5
Current Liab.	79.5	95.90	92.8
Fix. Chg. Cov.	285%	255%	200%

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	3.5%	4.0%	3.0%
"Cash Flow"	3.0%	5.0%	7.0%
Earnings	--	1.5%	9.5%
Dividends	1.5%	1.0%	1.5%
Book Value	4.5%	4.0%	4.0%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2001	40.3	49.9	59.4	47.9	197.5
2002	44.5	52.8	61.6	50.3	209.2
2003	46.7	51.8	63.7	50.5	212.7
2004	46.7	59.3	69.0	55.0	230
2005	53.0	66.0	76.0	60.0	255

EARNINGS PER SHARE A

Calendar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2001	.21	.33	.63	.18	1.35
2002	.25	.36	.50	.23	1.34
2003	.20	.13	.51	d.12	.72
2004	.08	.30	.56	.26	1.20
2005	.27	.34	.61	.28	1.50

QUARTERLY DIVIDENDS PAID B■

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.213	.213	.213	.217	.86
2001	.217	.217	.217	.217	.87
2002	.217	.217	.217	.221	.87
2003	.221	.221	.221	.221	.88
2004	.221	.221	.221		

American States Water is benefiting from an improving regulatory environment. The company reported second-quarter earnings of $0.30 a share (excluding non recurring items totaling $0.14), more than double the prior-year tally, primarily due to rate increases warranted by the California Public Utilities Commission (CPUC). Indeed, the board authorized an $8.1 increase in annual revenues for the company's Region III service area. In addition, the order allows for an additional $4.7 million in aggregate increases in 2004 and 2005.

More recent decisions should boost profitability in the second half. In August, AWR was authorized to increase rates in Region I and II, as well. The CPUC granted Region II $15.8 million in rate relief to be implemented incrementally over the next three years, including $5.2 million in 2004, as the higher rates are retroactive to February 14. Too, three service areas in Region I were authorized a $382,100 increase in annual revenues retroactive to the start of the year. Although these decisions will undoubtedly provide a much needed top-line boost, they also suggest that the CPUC's regulatory process is becoming more timely and reasonable in its decision-making process. In all, we look for AWR to increase earnings by more than 50% in 2004.

Capital constraints may limit further gains, though. Faced with increasingly stringent regulatory and infrastructure requirements, American has looked to the equity market to fund recent improvements. The company sold approximately 1.4 million shares at the end of September, netting nearly $36 million, and more offerings are likely on the way. As a result, despite brighter top-line prospects, we look for the company's earnings growth rate, to begin subsiding somewhat in 2005. AWR will probably utilize additional offerings to seek out takeover targets in the fragmented water utility industry.

Still, American shares probably do not appeal to most investors. They are untimely for year-ahead performance and offer below-average appreciation potential out to 2007-2009. That said, though, income-minded investors may find the issue of interest, for its dividend yield.
Andre J. Costanza *October 29, 2004*

(A) Primary earnings. Excludes nonrecurring gains: '91, 73¢; '92, 13¢; '04, 14¢. Next earnings report due late Jan.

(B) Dividends historically paid in early-March, June, September, December.■ Div'd reinvestment plan available.

(C) In millions, adjusted for splits.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	70

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AQUA AMERICA NYSE-WTR

RECENT PRICE	21.29	P/E RATIO	24.5	(Trailing: 26.9 Median: 20.0)	RELATIVE P/E RATIO	1.40	DIV'D YLD	2.4%	VALUE LINE

TIMELINESS 4 Lowered 6/4/04
SAFETY 3 Lowered 8/1/03
TECHNICAL 3 Raised 8/20/04
BETA .75 (1.00 = Market)

High: 5.3 5.0 5.5 7.6 11.4 15.4 15.4 16.0 19.7 20.0 22.4 22.8
Low: 4.0 4.4 4.4 5.2 5.9 9.7 10.1 8.4 12.5 12.8 15.8 18.9

LEGENDS
— 1.50 x Dividends p sh divided by Interest Rate
···· Relative Price Strength
3-for-2 split 7/96
4-for-3 split 1/98
5-for-4 split 12/00
5-for-4 split 12/01
5-for-4 split 12/03
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	30	(+40%)	11%
Low	20	(-5%)	2%

Target Price Range 2007 | 2008 | 2009

% TOT. RETURN 9/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	17.5	18.8
3 yr.	40.7	55.9
5 yr.	66.5	63.9

Insider Decisions
	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	1	0	0	1	0	0
Options	0	0	0	0	0	1	0	0	0
to Sell	0	0	0	0	0	2	1	0	1

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	85	93	90
to Sell	86	73	62
Hld's(000)	26673	26637	26345

Percent shares traded: 4.5 / 3 / 1.5

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
4.45	4.53	2.70	2.85	2.43	2.27	2.42	2.45	2.48	2.69	2.79	3.21	3.29	3.59	3.79	3.97	4.65	4.85	Revenues per sh	6.00
.66	.65	.58	.59	.52	.56	.56	.63	.67	.74	.81	.96	1.01	1.15	1.26	1.28	1.45	1.60	"Cash Flow" per sh	2.00
.30	.27	.33	.33	.31	.33	.35	.39	.40	.46	.53	.56	.62	.68	.72	.76	.85	.95	Earnings per sh A	1.20
.24	.24	.26	.26	.27	.27	.28	.29	.30	.32	.34	.36	.38	.40	.43	.46	.49	.52	Div'd Decl'd per sh B■	.64
.88	1.15	1.01	.72	.80	.63	.61	.69	.64	.77	1.09	1.20	1.55	1.45	1.60	1.76	1.60	1.55	Cap'l Spending per sh	1.50
2.88	2.92	2.80	2.76	2.79	3.05	3.21	3.28	3.59	3.79	4.28	4.57	5.13	5.53	5.81	7.12	7.55	7.95	Book Value per sh D	9.60
28.27	29.45	30.48	31.06	38.40	44.55	44.83	47.81	49.31	50.60	54.15	80.10	83.87	85.48	84.90	92.59	95.00	98.00	Common Shs Outst'g C	100.00
12.3	12.9	10.2	10.8	12.5	14.4	13.5	12.0	15.6	17.8	22.5	21.2	18.2	23.6	23.6	24.5	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
1.02	.98	.76	.69	.76	.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.42			Relative P/E Ratio	1.40
6.5%	6.9%	7.7%	7.2%	6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%			Avg Ann'l Div'd Yield	2.6%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $963.3 mill. Due in 5 Yrs $230.0 mill.
LT Debt $770.5 mill. LT Interest $45.0 mill.
(Total interest coverage: 3.5x)

Pension Assets-12/03 $108.7 mill.
Oblig. $150.1 mill.

Pfd Stock None

Common Stock 93,012,163 shares as of 7/28/04

MARKET CAP: $2.0 billion (Mid Cap)

	108.6	117.0	122.5	136.2	151.0	257.3	275.5	307.3	322.0	367.2	440	475	Revenues ($mill)	600
	15.6	19.0	19.8	23.2	28.8	45.0	50.7	58.5	62.7	67.3	80.0	95.0	Net Profit ($mill)	125
	42.5%	40.4%	41.4%	40.6%	40.5%	38.4%	38.9%	39.3%	38.5%	39.3%	40.0%	40.0%	Income Tax Rate	40.0%
	.8%	1.6%	1.3%	4.0%	4.3%	4.4%	5.3%	2.1%	2.2%	3.2%	3.5%	3.5%	AFUDC % to Net Profit	4.0%
	50.2%	51.9%	54.1%	54.4%	52.7%	52.9%	52.0%	52.2%	54.2%	51.4%	53.5%	54.5%	Long-Term Debt Ratio	54.0%
	47.4%	46.4%	44.0%	44.8%	46.6%	46.7%	47.8%	47.7%	45.8%	48.6%	46.5%	45.5%	Common Equity Ratio	46.0%
	303.1	338.0	401.7	427.2	496.6	782.7	901.1	990.4	1076.2	1355.7	1550	1725	Total Capital ($mill)	2100
	385.7	436.9	502.9	534.5	609.8	1135.4	1251.4	1368.1	1490.8	1824.3	1925	2025	Net Plant ($mill)	2300
	7.0%	7.7%	6.8%	7.4%	7.6%	7.6%	7.4%	7.8%	7.6%	6.4%	6.5%	7.0%	Return on Total Cap'l	7.5%
	10.4%	11.7%	10.7%	11.9%	12.3%	12.2%	11.7%	12.3%	12.7%	10.2%	11.0%	12.0%	Return on Shr. Equity	13.0%
	10.3%	11.7%	11.2%	12.0%	12.4%	12.3%	11.7%	12.4%	12.7%	10.2%	11.0%	12.0%	Return on Com Equity	13.0%
	2.1%	3.5%	2.8%	3.5%	4.5%	4.3%	4.7%	5.1%	5.2%	4.2%	5.0%	5.5%	Retained to Com Eq	6.0%
	81%	71%	75%	70%	64%	65%	60%	59%	59%	59%	57%	54%	All Div'ds to Net Prof	51%

CURRENT POSITION 2002 | 2003 | 6/30/04
($mill.)			
Cash Assets	49.7	39.2	35.8
Receivables	57.7	62.3	67.6
Inventory (AvgCst)	4.6	5.8	7.2
Other	2.7	5.1	5.6
Current Assets	114.7	112.4	116.2
Accts Payable	31.1	32.3	13.1
Debt Due	149.4	135.8	192.8
Other	46.0	63.9	66.6
Current Liab.	226.5	232.0	272.5
Fix. Chg. Cov.	347%	344%	331%

ANNUAL RATES of change (per sh)
	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	7.5%	8.0%
"Cash Flow"	8.5%	10.5%	8.5%
Earnings	8.5%	9.5%	9.0%
Dividends	5.0%	6.0%	7.0%
Book Value	8.0%	9.5%	7.5%

QUARTERLY REVENUES ($ mill.)
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	70.2	77.3	84.7	75.1	307.3
2002	71.7	76.6	91.9	81.8	322.0
2003	80.5	83.4	102.1	101.2	367.2
2004	99.8	106.5	118.7	115	440
2005	105	115	130	125	475

EARNINGS PER SHARE A
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.14	.18	.22	.14	.68
2002	.14	.16	.25	.17	.72
2003	.15	.18	.24	.19	.76
2004	.17	.19	.25	.24	.85
2005	.19	.23	.27	.26	.95

QUARTERLY DIVIDENDS PAID B ■
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.092	.092	.092	.099	.38
2001	.099	.099	.099	.106	.40
2002	.106	.106	.106	.112	.43
2003	.112	.112	.112	.12	.46
2004	.12	.12	.12	.13	

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately 2.5 million residents in Pennsylvania, Ohio, New Jersey, Illinois, Maine, North Carolina, Texas, Florida, Kentucky, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired Consumers Water, AquaSource, 7/03; and others. Water supply revenues '03: residential, 59%; commercial, 17%; industrial & other, 24%. Officers and directors own 1.4% of the common stock (4/04 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.

Aqua America probably realized moderate growth in the recently completed third quarter. Much of the increase will likely be from acquisitions, as the second-quarter purchases of Heater Utilities and a number of Florida water systems should be consolidated into results. Also, a number of states, including Texas, Pennsylvania, and New Jersey, have approved rate hikes in the 5% to 10% range, which should go into effect at various times throughout the second half of the year. However, results may well be tempered by the wetness during the quarter in much of the company's operating territory due to frequent hurricanes and tropical storms. Still, we expect moderate per-share increases over third- and fourth-quarter results from a year ago.

The company is further expanding through acquisitions. Most recently, Aqua has purchased a number of small units, mostly in Pennsylvania, to quietly broaden its customer base. Although management is confident in its ability to grow internally in the southern states, it may have to seek out larger acquisitions in northern regions to meet its 7% revenue growth target. All told, we expect the top line to expand by $35 million in 2005.

Aqua's management team gives it a competitive advantage. In the recent Pennsylvania rate case, WTR was awarded 10.6%, 0.6% above the judge's decision, by the water utility commission because of management's strong performance with quality and acquisitions. Furthermore, in North Carolina, the commission has allowed the company to add a portion of its goodwill impairment from the Heater acquisition to its rate base for every additional water system purchased in the state. This apparent leverage should come in handy during upcoming rate negotiations in a number of other states.

These shares carry a Below-Average Timeliness rank. They are also already trading within our 3- to 5-year Price Target Range. The stock's limited long-term growth prospects are a consequence of the industry's regulated nature. However, management has decided to raise the dividend for the December period, to $0.13, and we expect future rises to keep the company's earnings payout above 50%.
Matthew B. V. Albrecht October 29, 2004

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '90, (38¢); '91, (34¢); '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 5¢; '03, 4¢. Excl gain from disc. operations: '96, 2¢. Next earnings report due early February. (B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits. (D) Incl. deferred charges. In '03: $34.3 mill., $0.37/sh.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	95
Earnings Predictability	100

CALIFORNIA WATER NYSE-CWT

| RECENT PRICE | 28.53 | P/E RATIO | 16.6 (Trailing: 17.7 / Median: 17.0) | RELATIVE P/E RATIO | 0.95 | DIV'D YLD | 4.0% | VALUE LINE |

TIMELINESS 3 Raised 8/6/04
SAFETY 2 Lowered 8/11/05
TECHNICAL 3 Lowered 7/23/04
BETA .70 (1.00 = Market)

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+25%)	8%
Low	25	(-10%)	1%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	1	0	0	0	1	0	1	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

	4Q2003	1Q2004	2Q2004
to Buy	40	42	40
to Sell	15	19	30
Hld's(000)	3465	3785	4047

Percent shares traded: 4.5 / 3.0 / 1.5

% TOT. RETURN 9/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	18.5	18.8
3 yr.	23.7	55.9
5 yr.	35.8	63.9

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC. 07-09	
10.03	10.33	10.93	11.18	12.29	13.34	12.59	13.17	14.48	15.48	14.76	15.96	16.16	16.26	17.33	16.371	18.00	19.00	Revenues per sh	20.65
1.67	1.89	1.97	1.98	1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.52	2.20	2.65	2.51	3.20	3.30	"Cash Flow" per sh	3.60
1.23	1.20	1.25	1.21	1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.53	1.31	.94	1.25	1.21	1.70	1.75	Earnings per sh A	2.00
.80	.84	.87	.90	.93	.96	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.13	Div'd Decl'd per sh B ●	1.18
2.12	2.40	2.36	3.03	3.09	2.53	2.26	2.17	2.83	2.61	2.74	3.44	2.45	4.09	5.82	4.39	3.25	3.65	Cap'l Spending per sh	3.90
9.30	9.66	10.04	10.35	10.51	10.90	11.56	11.72	12.22	13.00	13.43	12.90	12.95	14.44	15.80	16.60	18.25		Book Value per sh C	
11.34	11.38	11.38	11.38	11.38	11.38	12.49	12.54	12.62	12.62	12.62	12.94	15.15	15.18	15.18	16.93	18.35	18.70	Common Shs Outst'g D	23.00
11.5	10.6	10.4	11.2	14.1	13.6	14.1	13.7	11.9	12.6	17.8	17.8	19.6	27.1	19.8	22.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	16.0
.95	.80	.77	.72	.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.28			Relative P/E Ratio	1.05
5.7%	6.6%	6.7%	6.1%	5.2%	5.8%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%				Avg Ann'l Div'd Yield	4.0%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $272.9 mill. Due in 5 Yrs $10.7 mill.
LT Debt $272.0 mill. LT Interest $17.0 mill.
(LT interest earned: 2.8x; total int. cov.: 2.7x)
Pension Assets-12/03 $88.4 mill. Oblig. $63.2 mill.
Pfd Stock $3.5 mill. Pfd Div'd $.15 mill.
139,000 shares, 4.4% cumulative ($25 par).
Common Stock 18,345,496 shs. as of 8/4/04
MARKET CAP: $525 million (Small Cap)

CURRENT POSITION	2002	2003	6/30/04
(SMILL.)			
Cash Assets	1.1	2.9	24.1
Other	41.9	40.6	60.0
Current Assets	43.0	43.5	84.1
Accts Payable	23.7	23.8	28.6
Debt Due	24.8	7.3	.9
Other	43.0	32.5	36.4
Current Liab.	91.5	63.6	65.9
Fix. Chg. Cov.	250%	218%	202%

ANNUAL RATES	Past	Past	Est'd '01-'03
of change (per sh)	10 Yrs.	5 Yrs.	to '07-'09
Revenues	3.0%	2.0%	3.5%
"Cash Flow"	2.0%	-1.5%	6.5%
Earnings	-.5%	-6.5%	10.0%
Dividends	2.0%	1.0%	1.0%
Book Value	2.5%	1.0%	5.0%

Cal- endar	QUARTERLY REVENUES ($ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	47.0	67.0	76.3	56.5	246.8
2002	51.7	69.2	81.4	60.9	263.2
2003	51.3	68.0	88.2	69.6	277.1
2004	60.2	88.9	100	80.9	330
2005	70.0	95.0	105	85.0	355

Cal- endar	EARNINGS PER SHARE A E				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.01	.34	.39	.20	.94
2002	.12	.43	.50	.20	1.25
2003	d.05	.30	.53	.41	1.21
2004	.08	.59	.70	.33	1.70
2005	.10	.56	.73	.36	1.75

Cal- endar	QUARTERLY DIVIDENDS PAID B ■				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2000	.275	.275	.275	.275	1.10
2001	.279	.279	.279	.279	1.12
2002	.28	.28	.28	.28	1.12
2003	.281	.281	.281	.281	1.12
2004	.283	.283	.283	.283	

157.3	165.1	162.8	195.3	186.3	206.4	244.8	246.8	263.2	277.1	330	355	Revenues ($mill)	475
14.4	14.7	19.1	23.3	18.4	19.9	20.0	14.4	19.1	19.4	31.0	32.5	Net Profit ($mill)	45.0
40.0%	40.1%	38.9%	37.4%	36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	40.6%	40.0%	Income Tax Rate	40.0%
--	--	--	--	--	--	--	--	--	--	NII	NII	AFUDC % to Net Profit	NII
46.6%	49.2%	47.4%	45.4%	44.2%	46.9%	48.9%	50.3%	55.3%	52.3%	50.0%	50.0%	Long-Term Debt Ratio	49.0%
52.2%	49.7%	51.4%	53.5%	54.7%	52.0%	50.2%	48.8%	44.0%	47.0%	49.0%	49.0%	Common Equity Ratio	50.0%
276.9	296.0	299.9	306.7	308.6	333.8	388.8	402.7	453.1	520.3	580	610	Total Capital ($mill)	840
407.9	422.2	443.6	460.4	478.3	515.4	582.0	624.3	697.0	759.5	815	865	Net Plant ($mill)	985
7.1%	6.8%	8.3%	9.4%	7.8%	7.8%	6.8%	5.3%	5.9%	5.6%	7.0%	7.0%	Return on Total Cap'l	7.0%
9.7%	9.8%	12.1%	13.9%	10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	10.5%	10.5%	Return on Shr. Equity	11.0%
9.9%	9.9%	12.3%	14.1%	10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	10.5%	10.5%	Return on Com Equity	11.0%
1.9%	1.2%	3.8%	6.0%	2.8%	3.5%	1.8%	NMF	1.0%	.7%	3.5%	4.0%	Retained to Com Eq	4.5%
81%	88%	69%	58%	74%	70%	82%	119%	90%	91%	67%	64%	All Div'ds to Net Prof	60%

BUSINESS: California Water Service Group provides regulated and nonregulated water service to over 2 million people (461,200 customers) in 98 communities in California, Washington, and New Mexico. 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, '03: residential, 70%; business, 18%; public authorities, 5%; industrial, 4%; other, 3%. '03 reported deprec. rate: 2.2%. Has about 815 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson. Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwater.com.

California Water Service Group appears to be on the road to recovery. The company reported second-quarter earnings of $0.59, nearly double last year's figure, and $0.18 above our estimate. Revenues increased 31%, as hot and dry weather prompted higher usage rates, as well as new customer growth. However, the bulk of the upside was a result of a favorable rate order from the California Public Utilities Commission (CPUC), which added almost $10 million. Further gains were offset by higher prices from wholesalers, though, as Cal was forced to purchase about half of its supply.

We are adding a dime to our 2004 earnings estimate, and now expect Cal to earn $1.70 a share. Although usage rates will likely decline as we head into the cooler winter months, more timely rate decisions ought to drive favorable second-half earnings comparisons. The CPUC, which has been a stumbling block in recent years, appears to be settling cases in a more timely fashion of late. In fact, the board recently approved a $1.1 million increase in annual revenues for the Salinas district.

Additional rate case decisions augur well for Cal heading forward... Cal is expected to file a general rate case for one-third of its districts, which covers approximately 40% of its customer base. In addition, it expects a decision on another case totaling almost $8.0 million.

...but stricter regulatory laws may limit profits. The costs of meeting regulatory guidelines continue to increase and it doesn't seem as though they will moderate in the coming years. Indeed, the growing threats of terrorist activity on U.S. drinking systems ought to keep infrastructure maintenance costs elevated. Additional equity offerings will likely be necessary, given the company's cash requirements. Thus, we look for gains to be tempered over the next couple of years.

Cal shares may appeal to income-minded investors. CWT's dividend yield is tops among the water utility group. However, others will want to take a pass as these untimely shares hold little appeal out to late decade. Cal's cash strain may also impede it from participating in the industry's consolidation theme.
Andre J. Costanza   October 29, 2004

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; Q2 '02, 8¢. Next earnings report due late Jan.
(B) Dividends historically paid in mid-Feb., May, Aug., Nov. ■ Div'd reinvestment plan available.
(C) Incl. deferred charges. In '03: $38.0 mill., $2.25/sh.
(D) In millions, adjusted for split.
(E) May not total due to change in shares.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	90
Earnings Predictability	70

CINERGY NYSE-CIN

| RECENT PRICE | 40.33 | P/E RATIO | 14.8 | (Trailing: 18.2 / Median: 14.8) | RELATIVE P/E RATIO | 0.85 | DIV'D YLD | 4.7% | VALUE LINE |

TIMELINESS	4	Raised 9/17/04						
SAFETY	2	New 1/13/95						
TECHNICAL	3	Lowered 9/24/04						
BETA .80 (1.00 = Market)								

High/Low: 29.6/23.9 | 27.6/20.8 | 31.1/23.4 | 34.3/27.5 | 39.1/32.0 | 39.9/30.8 | 34.9/23.4 | 35.3/20.0 | 35.6/28.0 | 37.2/25.4 | 38.9/29.8 | 41.1/34.9

Target Price Range: 2007 | 2008 | 2009

LEGENDS
— 0.97 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 12/92
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	45	(+10%)	7%
Low	35	(-15%)	2%

Insider Decisions
	N	D	J	F	M	A	M	J	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	4	3	0	0	4	0	3
to Sell	0	0	1	1	0	0	1	0	3

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	177	165	157
to Sell	130	125	140
Hld's(000)	106374	108003	113833

Percent shares traded: 9 / 6 / 3

Cinergy was formed on October 24, 1994 through the merger of Cincinnati Gas & Electric and PSI Resources. Each common share of Cincinnati Gas & Electric was exchanged for 1.00 share of Cinergy, while each common share of PSI Resources was exchanged for 1.023 Cinergy shares. Pre-merger data are figures for Cincinnati Gas & Electric only and are not comparable to Cinergy data.

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC. 07-09
Revenues per sh	18.84	19.23	20.57	27.59	37.04	37.36	52.98	81.07	70.91	24.75	25.50	24.50	25.75
"Cash Flow" per sh	3.13	3.98	3.99	4.75	4.02	4.34	4.87	5.15	4.59	4.78	5.00	5.15	6.10
Earnings per sh A	1.30	2.22	2.19	2.30	1.97	2.10	2.50	2.75	2.22	2.43	2.65	2.75	3.00
Div'd Decl'd per sh B	1.72	1.72	1.74	1.80	1.80	1.80	1.80	1.80	1.80	1.84	1.88	1.92	2.04
Cap'l Spending per sh	3.09	2.06	2.05	2.08	2.32	2.43	3.27	5.31	5.08	3.95	4.15	4.35	4.20
Book Value per sh C	15.56	16.17	16.39	16.10	16.02	16.70	17.36	18.45	19.53	20.74	21.70	21.55	27.05
Common Shs Outst'g F	155.20	157.67	157.68	157.74	158.66	158.92	158.97	159.40	166.66	178.44	181.10	193.80	198.50
Avg Ann'l P/E Ratio	17.8	11.9	14.1	14.9	17.6	14.2	11.0	11.7	15.0	14.4	Bold figures are Value Line estimates		13.5
Relative P/E Ratio	1.17	.80	.88	.86	.92	.81	.72	.60	.82	.83			.90
Avg Ann'l Div'd Yield	7.4%	6.5%	5.6%	5.3%	5.2%	6.1%	6.6%	5.6%	5.4%	5.2%			5.1%
Revenues ($mill)	2924.2	3031.4	3242.7	4352.8	5876.3	5937.9	8422.0	12923	11960	4415.9	4620	4750	5120
Net Profit ($mill)	226.7	378.0	369.0	472.0	318.1	340.8	404.1	446.8	364.0	437.9	475	520	595
Income Tax Rate	40.2%	36.7%	37.2%	34.5%	26.9%	38.0%	38.4%	36.4%	30.2%	24.7%	25.0%	25.0%	25.0%
AFUDC % to Net Profit	8.2%	2.7%	2.0%	1.2%	.5%	1.2%	2.0%	7.3%	5.6%	1.7%	2.0%	2.0%	2.0%
Long-Term Debt Ratio	48.4%	46.3%	47.7%	44.2%	49.7%	52.1%	50.2%	52.1%	52.7%	52.3%	51.0%	47.0%	43.0%
Common Equity Ratio	43.1%	46.6%	48.6%	52.2%	48.5%	46.3%	48.2%	42.6%	42.5%	46.9%	48.5%	52.0%	56.0%
Total Capital ($mill)	5607.5	5467.5	5313.7	4868.1	5238.3	5735.6	5728.2	6907.4	7745.3	7895.4	8125	8770	9580
Net Plant ($mill)	6198.9	6251.1	6289.6	6297.1	6344.5	6417.5	6630.4	8236.9	8648.7	9627.5	9950	10310	11120
Return on Total Cap'l	6.0%	8.9%	8.7%	11.6%	7.7%	7.7%	8.4%	7.9%	6.1%	6.9%	7.0%	7.0%	7.5%
Return on Shr. Equity	7.8%	12.9%	13.3%	17.4%	12.1%	12.4%	14.2%	13.5%	9.9%	11.6%	12.0%	11.0%	11.0%
Return on Com Equity D	7.9%	13.6%	13.4%	18.1%	12.3%	12.6%	14.5%	15.0%	10.9%	11.7%	12.0%	11.0%	11.0%
Retained to Com Eq	NMF	3.1%	2.8%	6.9%	1.1%	1.9%	4.1%	5.3%	1.9%	3.0%	3.5%	3.5%	3.5%
All Div'ds to Net Prof	113%	79%	81%	63%	91%	86%	72%	65%	83%	74%	71%	70%	68%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $5153.3 mill. Due in 5 Yrs $3020.0 mill.
LT Debt $3986.2 mill. LT Interest $201.0 mill.
(LT interest earned: 3.3x)
Pension Assets-12/03 $877.3 mill. Oblig. $1457.8 mill.
Pfd Stock $62.8 mill. Pfd Div'd $3.4 mill.
552,451 shs. 3.5% to 6.875% ($100 par); callable at $100 to $108 a sh.; 303,544 shs. 4.16% to 4.32% $25 par, call. at $25.

Common Stock 180,577,342 shs. as of 7/31/04
MARKET CAP: $7.3 billion (Large Cap)

ELECTRIC OPERATING STATISTICS
	2001	2002	2003
% Change Retail Sales (KWH)	-1.0	+.8	-1.5
Avg. Indust. Use (MWH)	2751	2701	2639
Avg. Indust. Revs. per KWH (¢)	4.10	4.01	4.01
Capacity at Peak (Mw)	11083	11249	13331
Peak Load, Summer (Mw)	11091	11133	11305
Annual Load Factor (%)	61.3	62.4	54.5
% Change Customers (yr-end)	+1.3	+.8	+1.0

| Fixed Charge Cov. (%) | 328 | 282 | 286 |

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	12.0%	15.5%	-15.0%
"Cash Flow"	2.5%	2.5%	4.0%
Earnings	1.5%	3.0%	3.5%
Dividends	1.0%	.5%	2.0%
Book Value	.5%	4.0%	5.5%

QUARTERLY REVENUES ($ mill.)
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	3707	3642	3324	2250	12923
2002	2192	2471	3880	3417	11960
2003	1268	933.9	1092	1122	4415.9
2004	1289	1054	1120	1157	4620
2005	1320	1100	1150	1180	4750

EARNINGS PER SHARE A
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.75	.51	.80	.69	2.75
2002	.58	.27	.78	.59	2.22
2003	.80	.42	.62	.59	2.43
2004	.68	.32	.92	.73	2.65
2005	.75	.40	.90	.70	2.75

QUARTERLY DIVIDENDS PAID B
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.45	.45	.45	.45	1.80
2001	.45	.45	.45	.45	1.80
2002	.45	.45	.45	.45	1.80
2003	.46	.46	.46	.46	1.84
2004	.47	.47	.47		

% TOT. RETURN 8/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	24.3	13.4
3 yr.	47.5	29.3
5 yr.	72.9	54.2

BUSINESS: Cinergy Corp. is a holding company formed through the merger of Cincinnati Gas & Electric and PSI Resources. Supplies elect. (81% of revs.) to 1,500,000 customers, natural gas (19%) to 496,000 customers, in Ohio, Kentucky, and Indiana. Elect. (Gas) revs.: resid. 43% (66%); commer., 28% (26%); indust., 25% (4%); other 4% (4%). The primary metal and chemical industries are the largest customers. Fuel costs: 39% of revenues. '03 deprec. rate: 2.8%. Est'd plant age: 12 years. Fuels: coal, 87%; natural gas, 8%; other, 5%. Has 7,693 employees, 52,506 common stockholders. Chairman, President & CEO: James E. Rogers. Inc.: Delaware. Address: 139 East 4th St., Cincinnati, OH 45202. Tel: 800-544-6900. Internet: www.cinergy.com.

Cinergy's Kentucky Union Light, Heat and Power subsidiary seeks to buy generating assets from an affiliate. ULH&P has been relying on power purchased from Cincinnati G&E (CG&E), which operates in Ohio's deregulated electric market, to meet its obligations. This has subjected the utility to fluctuations in wholesale power prices. ULH&P's request to buy 1,105 megawatts of capacity from CG&E for $380 million has been approved by Kentucky regulators. Consent of the SEC and the Federal Energy Regulatory Commission is still needed. CG&E advises that the transfer would not affect current electric rates, since power will be provided under the terms of the existing contract through the end of 2006. The Kentucky commission has directed ULH&P to file for new rates in time to allow them to take effect in January, 2007.

The company has a rate agreement in Ohio. The pact calls for yearly generation rate adjustments in a range of 5% to 8%. The increases, starting in 2005, would reflect expenses related to providing reserves necessary to maintain adequate electric supplies as well as the cost of environmental compliance, and homeland security and emission allowances. Too, CIN would defer its transmission and distribution request for an increase of $78.1 million until 2006. Finally, the 5% residential rate reduction would be extended for another three years through 2008.

Last year's reduced headcount should help lift earnings in 2004. In addition, retail energy sales should continue to rise at a 1.5% annual rate, and interest expense will be lower as construction spending to comply with The Clean Air Act declines. Last May's $153.5 million rate increase in Indiana is another plus. On the down side, pension and medical costs keep moving higher, and more common shares are outstanding. In all, we estimate a 9% gain in 2004 earnings, to $2.65 a share, and modest improvement next year. The stock is untimely.

Income-oriented investors might take a look here. The yield is a full percentage point above the industry norm. And our projection of steady earnings growth to 2007-2009 suggests increased dividends at a rate almost double that of the group.
Arthur H. Medalie *October 1, 2004*

(A) EPS diluted. Excl. extraord. gains (losses): '93, ($2.55); '96, (12¢); '97, (69¢); '98, (32¢); '99, 43¢; '03, 15¢; '04, (11¢). Next egs. rpt. due late Oct. (B) Div'ds historically paid mid-Feb., mid-May, mid-Aug., and mid-Nov. • Div'd reinvest. plan avail. (C) Incl. def. chgs. in '03, $5.93/sh.(D) Rate base: net original cost. Allowed on com. eq.: Ohio in '93: elect., 12.9%; Indiana in '04: 10.5%. Earned avg. com. eq. '03: 12.4%. Regul. Clim.: Above Avg. (E) Pro forma. (F) In mill., adjust. for split.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	90

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DOMINION RES. NYSE-D

| RECENT PRICE | 67.25 | P/E RATIO | 15.3 | (Trailing: 17.7 / Median: 15.0) | RELATIVE P/E RATIO | 0.81 | DIV'D YLD | 4.0% | VALUE LINE |

TIMELINESS	4	Raised 8/6/04
SAFETY	2	Raised 9/11/98
TECHNICAL	3	Lowered 9/24/04
BETA	.85	(1.00 = Market)

LEGENDS
— 1.06 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 1/92
Options: Yes
Shaded area indicates recession

High: 49.4 45.4 41.6 44.4 42.9 48.9 49.3 67.9 70.0 67.1 65.9 67.6
Low: 38.4 34.9 34.9 36.9 33.3 37.8 36.6 34.8 55.1 35.4 51.7 60.8

Target Price Range 2007 2008 2009

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	90	(+35%)	11%
Low	65	(-5%)	4%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	2	8	0	0	0	
to Sell	0	0	0	2	9	0	0	0	

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	281	281	245
to Sell	214	210	234
Hld's(000)	182420	180683	196066

Percent shares traded: 9 / 6 / 3

% TOT. RETURN 10/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	10.0	12.6
3 yr.	20.9	49.3
5 yr.	57.1	66.7

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
22.72	24.52	22.82	23.83	23.14	26.37	26.05	26.37	26.72	40.88	31.30	29.63	37.67	39.89	33.16	37.16	40.15	42.55	Revenues per sh	49.00
6.36	5.82	6.08	6.38	6.04	6.61	6.33	6.00	6.44	7.78	5.97	7.35	7.43	7.84	8.90	7.94	8.45	9.90	"Cash Flow" per sh	11.75
3.01	2.76	2.75	2.94	2.66	3.12	2.81	2.45	2.65	3.00	1.72	2.99	2.50	2.97	4.82	3.91	4.30	5.10	Earnings per sh A	6.00
2.07	2.15	2.23	2.31	2.40	2.48	2.55	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.60	2.68	Div'd Decl'd per sh B	2.92
5.62	6.12	5.19	4.58	4.37	4.24	3.83	3.28	2.69	3.45	3.21	4.32	5.63	4.62	4.35	10.41	7.85	8.10	Cap'l Spending per sh	9.00
21.91	22.67	23.41	24.41	25.22	26.38	26.60	26.88	27.17	26.84	27.34	25.50	28.45	31.61	33.15	32.42	31.75	36.20	Book Value per sh C	45.00
147.17	150.91	154.79	158.85	163.84	168.12	172.41	176.41	181.22	187.80	194.46	186.32	245.80	264.70	308.10	325.00	335.00	335.00	Common Shs Outst'g D	335.00
9.5	10.5	10.9	11.3	14.3	14.3	13.8	15.4	14.8	12.5	24.6	14.5	19.4	20.9	12.0	15.2	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	13.0
.79	.79	.81	.72	.87	.84	.91	1.03	.93	.72	1.28	.83	1.26	1.07	.66	.88			Relative P/E Ratio	.85
7.2%	7.4%	7.4%	7.0%	6.3%	5.6%	6.6%	6.9%	6.6%	6.9%	6.1%	5.9%	5.3%	4.1%	4.4%	4.3%			Avg Ann'l Div'd Yield	3.7%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $17298.0 mill. Due in 5 Yrs $8169.0 mill.
LT Debt $15479.0 mill. LT Interest $913.0 mill.
Incl. $1397.0 mill. mandatorily redeemable preferred securities of subsidiary trusts.
(LT interest earned: 2.9x)
Leases, Uncapitalized Annual rentals $70.0 mill.
Pension Assets-12/03 $3.73 bill. Oblig. $3.11 bill.
Pfd Stock $257.0 mill. Pfd Div'd $16.0 mill.
1,340,140 shs. $4.04-$7.05, $100 liq. pref., redeemable at $101.00-$112.50/sh.; 2,500,000 var. rate Money Market Pfd. shs. Excl. pfd. due within 1 year.
Common Stock 330,227,655 shs.
MARKET CAP: $22 billion (Large Cap)

	4491.1	4651.7	4842.3	7677.6	6086.2	5520.0	9260.0	10558	10218	12078	13450	14250	Revenues ($mill)	16400
	520.4	469.1	514.7	603.7	400.0	639.0	624.0	775.0	1378.0	1261.0	1425	1740	Net Profit ($mill)	2050
	24.7%	28.0%	29.2%	26.4%	29.0%	29.4%	31.7%	38.4%	33.1%	34.9%	38.5%	38.5%	Income Tax Rate	38.5%
	2.0%	2.4%	.9%	.3%	.3%	4.7%	3.5%	5.3%	6.9%	7.9%	5.0%	4.0%	AFUDC % to Net Profit	4.0%
	46.6%	45.3%	45.1%	54.1%	44.2%	55.1%	58.3%	60.2%	56.2%	59.4%	57.5%	54.0%	Long-Term Debt Ratio	50.5%
	45.3%	46.6%	47.0%	37.9%	46.4%	37.8%	38.9%	38.0%	42.7%	39.7%	41.5%	45.0%	Common Equity Ratio	48.5%
	10113	10178	10476	13311	11461	12582	17987	22003	23927	26571	27175	26925	Total Capital ($mill)	30900
	10245	10322	10509	12533	10637	10764	14849	18681	20257	25850	27125	28325	Net Plant ($mill)	32200
	6.9%	6.4%	6.6%	6.6%	5.7%	6.8%	5.9%	5.3%	7.7%	6.5%	7.0%	8.0%	Return on Total Cap'l	8.0%
	9.6%	8.4%	9.0%	9.9%	6.3%	11.3%	8.3%	8.9%	13.2%	11.7%	12.5%	14.0%	Return on Shr. Equity	13.5%
	10.5%	9.0%	9.6%	11.0%	6.3%	12.0%	8.0%	9.0%	13.3%	11.8%	12.5%	14.0%	Return on Com Equity E	13.5%
	1.0%	NMF	.2%	1.5%	NMF	1.7%	NMF	1.2%	6.3%	4.0%	5.0%	6.5%	Retained to Com Eq	7.0%
	91%	105%	98%	87%	NMF	88%	109%	87%	54%	67%	61%	53%	All Div'ds to Net Prof	50%

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	-1.2	+4.9	+.5
Avg. Indust. Use (MWH)	13964	14584	14814
Avg. Indust. Revs. per KWH (¢)	4.40	NA	NA
Capacity at Peak (Mw)	18000	18000	18000
Peak Load, Summer (Mw)	16500	17084	16349
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.8	+2.0	+1.6

| Fixed Charge Cov. (%) | 198 | 273 | 257 |

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.0%	2.0%	5.0%
"Cash Flow"	2.5%	4.0%	6.0%
Earnings	3.0%	9.5%	7.5%
Dividends	.5%	--	2.0%
Book Value	2.5%	3.5%	5.5%

QUARTERLY REVENUES ($ mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	3198	2309	2544	2507	10558
2002	2634	2332	2545	2707	10218
2003	3579	2630	2853	3016	12078
2004	3879	3040	3292	3239	13450
2005	4050	3250	3500	3450	14250

EARNINGS PER SHARE A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.65	.72	1.37	.25	2.97
2002	1.20	.97	1.54	1.11	4.82
2003	1.46	.84	1.05	.52	3.91
2004	1.39	.81	1.08	1.02	4.30
2005	1.40	.90	1.45	1.35	5.10

QUARTERLY DIVIDENDS PAID B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.645	.645	.645	.645	2.58
2001	.645	.645	.645	.645	2.58
2002	.645	.645	.645	.645	2.58
2003	.645	.645	.645	.645	2.58
2004	.645	.645	.645	.665	

BUSINESS: Dominion Resources, Inc. (DRI) is a holding company for Virginia Power, which serves 2.3 million customers in Virginia and northeastern NC. Acquired Consolidated Natural Gas (1.7 million customers in OH, PA, WV) 1/00. Nonutility operations include independent power production and gas & oil production. Electric revenue breakdown, '03: residential, 47%; commercial, 30%; industrial, 10%; other, 13%. Generating sources, '03: coal, 39%; nuclear, 29%; oil, 5%; other, 4%; purchased, 23%. Fuel costs: 32% of revs. '03 deprec. rate: 3.6%. Has 16,700 employees, 400,000 common stockholders. Chairman & CEO: Thos. E. Capps. President & COO: Thomas F. Farrell II. Inc.: VA. Address: P.O. Box 26532, Richmond, VA 23261-6532. Tel.: 804-819-2000. Internet: www.dom.com.

Dividend growth has resumed at Dominion Resources. In accordance with the plans that the company had announced, the board of directors raised the quarterly dividend by $0.02 a share, to $0.665, in mid-October. In early 2005, the board plans to boost the quarterly disbursement to $0.67 a share, which would produce an $0.08 increase for the full year. Dominion expects to continue to raise the dividend by $0.08 a share annually beyond 2005. We believe this goal is achievable, in view of the company's improving finances and its moderate payout ratio. But . . .

We have reduced our share-earnings estimates for 2004 and 2005 by $0.45 and $0.05, respectively. Third-quarter earnings were below our estimate due, in part, to mild weather and the effects of Hurricane Ivan on oil and gas production. We have cut our fourth-quarter estimate due to the cost of a buyout (an estimated $90 million-$110 million after taxes) of contracts with a nonutility generator (NUG). Because Dominion excludes the hurricane-related costs and the NUG buyout costs from its earnings target of $4.68-$4.75 a share, our $4.30 estimate is

well below the company's guidance. In 2005, higher income from oil and gas production and lower fuel costs should help earnings. Our estimate is the midpoint of the company's goal of $5.00-$5.20 a share. The stock is ranked 4 (Below Average) for Timeliness.

Some plant acquisitions are pending. Dominion has agreed to pay $536 million, plus an adjustment for inventory and capital spending estimated at $120 million, for 2,839 mw of coal-, oil-, and gas-fired generating assets in New England. The transaction is expected to close in March. Dominion plans to finance most of the purchase price with a forward equity sale of common shares at $65.20 each. The deal should be accretive to share earnings in 2005, but our presentation will not reflect it until after it has closed. An agreement to pay $220 million for the 545-megawatt Kewaunee nuclear plant in Wisconsin was denied by the state commission. The companies will probably seek reconsideration. The yield and total-return potential to 2007-2009 are a cut above the industry averages.

Paul E. Debbas, CFA   December 3, 2004

(A) Excl. nonrecurring gain (losses): '97, (85¢); '98, $1.03; '99, (11¢); '00, (64¢) net; '01, (83¢); '03, ($2.91) net; '04, (12¢) net; loss from discontinued ops.: '04, 5¢. '01 & '03 earnings don't add due to change in shares. Next earnings report due late Jan. (B) Div'ds historically paid in mid-Mar., June, Sept., and Dec. • Div'd reinvest. plan avail. (C) Incl. deferred charges. In '03: $21.76/sh. (D) In mill., adj. for split. (E) Rate base: Net orig. cost, adj. Rate all'd on com. eq. in '99: none specified; earned on avg. com. eq., '03: 11.4%. Regulatory Climate: Avg.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	60

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GREEN MTN. POWER NYSE-GMP

| RECENT PRICE | 27.20 | P/E RATIO | 12.5 (Trailing: 12.9 / Median: 12.0) | RELATIVE P/E RATIO | 0.66 | DIV'D YLD | 3.5% | VALUE LINE |

| | | | High: | 36.6 | 31.3 | 28.6 | 29.1 | 26.3 | 20.1 | 14.5 | 13.0 | 19.5 | 21.1 | 23.8 | 27.2 | | Target Price Range 2007 2008 2009 |
| | | | Low: | 30.8 | 23.4 | 23.9 | 22.8 | 17.8 | 10.0 | 7.1 | 6.6 | 11.1 | 15.8 | 19.0 | 22.6 | | |

TIMELINESS 3 Raised 8/13/04
SAFETY 3 Raised 8/7/01
TECHNICAL 3 Lowered 12/3/04
BETA .60 (1.00 = Market)

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	30	(+10%)	7%
Low	19	(-30%)	-3%

Insider Decisions
	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	5	2	1	0	3	0	0
to Sell	0	2	6	2	1	0	3	0	0

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	30	23	28
to Sell	13	20	18
Hld's(000)	1916	1932	2029

Percent shares traded: 12 / 8 / 4

% TOT. RETURN 10/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	17.9	12.5
3 yr.	75.7	49.3
5 yr.	216.4	66.7

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
34.79	38.83	39.06	33.33	32.91	32.46	31.68	33.30	35.54	34.52	34.69	46.41	49.82	49.86	55.42	55.72	44.25	45.20	Revenues per sh	46.75
3.88	3.95	4.02	3.67	4.32	4.05	4.47	5.12	5.41	4.69	2.24	3.45	2.69	4.42	5.14	4.79	4.80	4.90	"Cash Flow" per sh	5.05
2.41	2.36	2.29	2.45	2.54	2.20	2.23	2.26	2.22	1.57	d.80	.46	d.06	1.88	1.96	2.01	2.15	2.20	Earnings per sh (A)	2.48
1.89	1.95	2.00	2.04	2.08	2.11	2.12	2.12	2.12	1.61	.96	.55	.55	.55	.60	.76	.88	.98	Div'd Decl'd per sh (B)	1.28
3.84	5.44	3.79	3.42	3.47	3.52	2.89	3.16	3.48	3.16	2.05	1.70	2.49	2.28	3.94	3.30	4.20	3.85	Cap'l Spending per sh	2.80
18.37	18.73	19.03	20.30	20.99	21.42	21.66	21.94	22.15	22.02	20.09	18.60	16.53	17.81	18.51	19.85	20.65	21.25	Book Value per sh (C)	23.00
3.70	3.71	3.78	4.31	4.41	4.54	4.68	4.85	5.04	5.20	5.31	5.41	5.57	5.69	4.95	5.03	5.15	5.20	Common Shs Outst'g (E)	5.35
10.1	10.3	10.5	10.8	12.2	15.6	12.1	11.7	11.6	14.2	--	22.6	--	8.5	9.3	10.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	10.0
.84	.78	.78	.69	.74	.92	.79	.78	.73	.82	--	1.29	--	.44	.51	.62			Relative P/E Ratio	.65
7.7%	8.0%	8.3%	7.7%	6.7%	6.2%	7.8%	8.0%	8.2%	7.2%	6.4%	5.3%	6.6%	3.4%	3.3%	3.5%			Avg Ann'l Div'd Yield	5.3%

CAPITAL STRUCTURE as of 9/30/04
Total Debt $98.0 mill. Due in 5 Yrs $14.0 mill.
LT Debt $98.0 mill. LT Interest $6.5 mill.
Incl. $5.0 mill. capitalized leases.
(LT interest earned: 3.4x)

Leases, Uncapitalized None
Pension Assets-12/03 $27.9 mill.
Oblig. $34.0 mill.

Pfd Stock None

Common Stock 5,121,479 shs. as of 10/29/04
(5.25 mill. fully diluted shs.)
MARKET CAP: $150 million (Small Cap)

	148.2	161.5	179.0	179.3	184.3	251.0	277.3	283.5	274.6	280.5	228	235	Revenues ($mill)	250
	11.0	11.5	12.0	9.4	d2.9	3.6	.7	11.8	11.4	10.3	11.0	11.5	Net Profit ($mill)	13.0
	32.9%	32.7%	35.1%	43.2%	--	22.9%	--	37.1%	34.7%	33.1%	33.5%	34.0%	Income Tax Rate	35.5%
	7.3%	5.0%	5.4%	7.1%	--	6.2%	72.2%	3.4%	2.9%	6.3%	6.5%	6.0%	AFUDC % to Net Profit	4.5%
	43.6%	46.7%	44.3%	43.5%	43.9%	43.9%	42.9%	41.4%	51.7%	49.5%	48.0%	47.0%	Long-Term Debt Ratio	48.0%
	51.8%	49.2%	47.5%	49.0%	48.7%	49.8%	50.3%	52.2%	48.3%	50.5%	52.0%	53.0%	Common Equity Ratio	52.0%
	195.7	216.3	234.8	233.7	219.0	202.3	183.2	194.0	190.1	191.9	205	210	Total Capital ($mill)	235
	176.0	182.0	189.9	196.7	195.6	192.9	194.7	196.9	203.5	228.9	235	250	Net Plant ($mill)	285
	7.4%	6.8%	6.6%	5.6%	.3%	3.4%	2.2%	7.6%	7.4%	7.0%	7.0%	7.0%	Return on Total Cap'l	7.0%
	10.0%	10.0%	9.1%	7.1%	NMF	3.2%	.7%	10.4%	12.4%	10.3%	10.5%	10.5%	Return on Shr. Equity	10.5%
	10.1%	10.1%	9.8%	7.0%	NMF	2.4%	NMF	10.7%	12.3%	10.3%	10.5%	10.5%	Return on Com Equity (D)	10.5%
	.5%	.6%	.5%	NMF	NMF	NMF	NMF	7.7%	8.7%	6.5%	6.0%	5.5%	Retained to Com Eq	5.0%
	95%	94%	96%	102%	NMF	113%	NMF	34%	30%	37%	41%	45%	All Div'ds to Net Prof	54%

ELECTRIC OPERATING STATISTICS
	2001	2002	2003
% Change Retail Sales (KWH)	NA	-.3	-1.1
Avg. Indust. Use (MWH)	31768	31499	25811
Avg. Indust. Revs. per KWH (¢)	7.70	7.31	7.41
Capacity at Peak (Mw)	408.0	406.9	393.9
Peak Load, Summer (Mw)	341.2	342.0	330.2
Annual Load Factor (%)	70.1	70.0	71.1
% Change Customers (yr-end)	+1.2	+.9	+1.2

| Fixed Charge Cov. (%) | 257 | 327 | 279 |

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	5.0%	9.0%	-2.5%
"Cash Flow"	1.5%	3.0%	1.0%
Earnings	-2.0%	14.5%	3.5%
Dividends	-11.0%	-16.5%	12.5%
Book Value	-1.0%	-2.5%	3.5%

Cal- endar	QUARTERLY REVENUES ($ mill)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	74.8	67.5	76.0	65.2	283.5
2002	68.9	65.1	73.5	67.1	274.6
2003	72.9	64.5	72.0	71.1	280.5
2004	63.1	54.6	54.9	55.4	228
2005	65.0	56.0	57.0	57.0	235

Cal- endar	EARNINGS PER SHARE (A)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.51	.50	.58	.29	1.88
2002	.57	.32	.52	.55	1.96
2003	.80	.22	.59	.40	2.01
2004	.72	.34	.65	.44	2.15
2005	.74	.35	.66	.45	2.20

Cal- endar	QUARTERLY DIVIDENDS PAID (B)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2000	.138	.138	.138	.138	.55
2001	.138	.138	.138	.138	.55
2002	.138	.138	.138	.19	.60
2003	.19	.19	.19	.19	.76
2004	.22	.22	.22		

LEGENDS
0.86 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: No
Shaded area indicates recession

BUSINESS: Green Mountain Power Corp. supplies electricity to north-central, and parts of southern and southeastern Vermont. Rev. mix ('03): resid'l, 26.9%; small comm'l & ind'l, 26.4%; large comm'l & ind'l, 17.1%; other utils, 28.1%; other, 1.5%. Fuel ('03): hydro, 35.4% (incl. H-Q purch.); nuclear, 37.4% (Vermont Yankee); wood, 3.5%; oil, 2.7%; gas, 1.3%; wind, .5%; mkt purch., 19.2%. Has a 28.4% interest in Vermont Electric Power Co. and a 33.6% stake in Vermont Yankee Nuclear Power Corp. Fuel and purch. pwr costs: 70.3% of revs. '03 deprec. rate: 4.1%. Has 196 employees, 5,120 stockholders of rec. Chrmn: N.L. Brue. Pres. & CEO: C.L. Dutton. Inc.: VT. Addr.: 163 Acorn Lane, Colchester, VT 05446. Tel.: 802-655-8455. Web: www.greenmountainpower.biz.

Green Mountain Power has filed for a rate hike. In December, 2003, the Vermont Public Service Board (VPSB) approved a rate settlement between GMP and the state Department of Public Service. The settlement satisfied a cost-of-service review requirement in the 2002 sale of the Vermont Yankee nuclear plant. Electricity rates were left unchanged for 2004, and the company was authorized to seek increases of 1.9% for 2005 and 0.9% for 2006. We look for the VPSB to soon approve the 2005 requested hike since it does not involve any controversial issues. GMP needs additional revenues to recover operating, maintenance, employment, and environmental clean-up costs. Approval would ensure that the utility earns its allowed return on common equity of 10.5%. As 2004 draws to a close, GMP appears on track to achieve its allowed rate of return, thanks to ongoing cost-control efforts and the carryover of previously deferred revenues. Our 2005 share-net estimate factors in the proposed 1.9% hike.

The capital structure is well balanced. At the end of the recently concluded September quarter, the company's debt-to-total capital and common equity-to-total capital ratios stood at 48% and 52%, respectively. These ratios are suitable for a pure power distribution company such as GMP. Over the next five years, just $14 million in debt will mature, and that is in 2006. Management will probably issue some $30 million in new debt that year to help rebalance the capital structure and secure funding for an investment in a transmission line planned by the Vermont Electric Company. (This investment offers the potential for increased regulated earnings at the federal level.) GMP's debt and equity ratios should stay close to the current levels over the coming 3 to 5 years.

Green Mountain Power stock's total-return potential to 2007-2009 appears subpar compared to the industry average. Our projected return for the electrics over this period is a relatively unexciting 4% a year. Steady, predictable earnings growth and a low payout ratio suggest that GMP's dividend advance will be greater than the sector pace, but the recent share price seems to already reflect this positive prospect.

David M. Reimer   December 3, 2004

(A) Basic earnings. Next earnings report due early Feb. Excludes gain (losses) from discontinued operations: '99, ($1.25); '00, ($1.19); '01, (3¢); '03, 1¢ (B) Dividends historically paid in late Mar., June, Sep., and Dec. • Dividend reinvestment plan available. (C) Includes deferred charges. In '03: $11.05/sh. (D) Rate base determination: net original cost. Rate allowed on common equity in '03: 10.5%. Earned on average common equity in '03: 10.8%. Regulatory Climate: Average. (E) In millions.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	25
Earnings Predictability	15

KEYSPAN CORP. NYSE-KSE

| RECENT PRICE | 38.84 | P/E RATIO | 14.0 (Trailing: 13.2 / Median: 14.8) | RELATIVE P/E RATIO | 0.81 | DIV'D YLD | 4.6% | VALUE LINE |

TIMELINESS	3	Raised 8/13/04
SAFETY	2	Lowered 3/26/99
TECHNICAL	2	Raised 8/27/04
BETA .75 (1.00 = Market)		

| High: | 28.5 | 28.6 | 29.6 | 32.8 | 37.1 | 37.6 | 31.3 | 43.6 | 41.9 | 38.2 | 38.1 | 39.0 |
| Low: | 21.6 | 21.5 | 22.0 | 24.9 | 26.1 | 25.4 | 22.5 | 20.2 | 29.1 | 27.4 | 31.0 | 33.9 |

Target Price Range 2007 | 2008 | 2009

LEGENDS
— 1.00 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 7/03
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+30%)	10%
Low	35	(-10%)	2%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	1	3	2	4	0	0	0
to Sell	0	0	1	3	2	4	0	0	0

Institutional Decisions

	1Q2003	4Q2003	1Q2004
to Buy	164	172	164
to Sell	121	113	107
Hld's(000)	77907	76357	80527

Percent	12
shares	8
traded	4

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH INDEX
1 yr.	18.6	13.4
3 yr.	37.5	29.3
5 yr.	63.6	54.2

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
25.51	26.71	26.64	23.43	24.74	25.99	28.13	24.93	28.72	29.12	13.20	22.07	37.56	47.57	41.92	43.31	43.40	46.60	Revenues per sh	55.60
2.55	2.64	2.62	2.38	3.03	3.04	3.29	3.35	3.54	4.27	.45	3.57	4.51	5.72	6.36	6.22	7.00	7.25	"Cash Flow" per sh	8.30
1.66	1.68	1.62	1.45	1.35	1.73	1.85	1.90	1.96	2.12	d1.34	1.62	2.10	1.72	2.75	2.62	2.75	2.85	Earnings per sh B	3.45
1.15	1.19	1.23	1.27	1.29	1.32	1.35	1.39	1.42	1.46	1.50	1.78	1.78	1.78	1.78	1.78	1.78	1.78	Div'ds Decl'd per sh C■	1.90
3.46	4.30	3.51	3.44	3.95	4.37	4.15	4.36	6.04	5.60	5.19	5.42	4.64	7.60	7.96	6.34	6.00	6.70	Cap'l Spending per sh	7.70
12.77	13.36	13.68	14.37	14.55	15.54	16.27	16.94	18.17	19.09	23.18	20.28	20.65	20.73	20.67	22.94	24.45	25.00	Book Value per sh D	29.25
35.23	36.29	37.30	42.28	43.45	46.38	47.59	48.79	49.86	50.77	130.42	133.87	136.36	139.43	142.42	159.66	160.40	161.00	Common Shs Outst'g E	162.50
9.4	10.1	11.9	13.1	15.1	14.3	13.7	12.7	13.7	13.8	--	16.8	14.8	20.8	12.7	13.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	12.5
.78	.76	.88	.84	.92	.84	.90	.85	.86	.80	--	.96	.96	1.07	.69	.76			Relative P/E Ratio	.85
7.4%	7.0%	6.4%	6.7%	6.4%	5.3%	5.3%	5.8%	5.3%	5.0%	4.8%	6.5%	5.7%	5.0%	5.1%	5.2%			Avg Ann'l Div'd Yield	4.6%

CAPITAL STRUCTURE as of 6/30/04

Total Debt $5.3 bill. Due in 5 Yrs $2.7 bill.
LT Debt $5.2 bill. LT Interest $370.0 mill.
(total interest coverage: 3.1x)

Pension Assets-12/03 $1.9 bill. Oblig. $2.3 bill.

Pfd Stock $83.3 mill. Pfd Div'd $5.8 mill.

Common Stock 160,176,000 shs.

MARKET CAP: $6.2 billion (Large Cap)

	1338.6	1216.3	1432.0	1478.2	1721.9	2954.6	5121.5	6633.1	5970.7	6915.2	6960	7270	Revenues ($mill) A	9000
	87.4	91.8	97.2	106.1	d166.9	258.6	300.8	243.7	397.4	424.2	450	470	Net Profit ($mill)	565
	31.8%	32.0%	28.9%	35.0%	--	34.5%	41.8%	46.4%	36.2%	39.5%	38.0%	38.0%	Income Tax Rate	39.0%
	6.5%	7.6%	6.8%	7.2%	NMF	8.8%	5.9%	3.7%	6.7%	6.1%	6.5%	6.5%	Net Profit Margin	6.3%
	47.3%	46.4%	43.8%	43.5%	31.6%	37.5%	59.6%	61.2%	63.3%	60.0%	56.5%	56.5%	Long-Term Debt Ratio	54.5%
	52.7%	53.2%	55.8%	56.5%	59.4%	60.6%	39.2%	37.7%	35.7%	39.1%	42.5%	42.5%	Common Equity Ratio	44.5%
	1482.8	1553.8	1624.4	1714.1	5089.9	4482.1	7175.0	7672.3	8252.5	9356.9	9250	9460	Total Capital ($mill)	10650
	1405.3	1512.6	1698.1	1810.6	3778.3	4240.0	6358.3	6605.9	7217.6	8894.3	7000	7300	Net Plant ($mill)	8000
	7.5%	7.5%	7.4%	7.3%	NMF	7.1%	5.3%	4.5%	6.2%	5.8%	6.5%	6.5%	Return on Total Cap'l	7.0%
	11.2%	11.0%	10.7%	10.9%	NMF	9.2%	10.4%	8.2%	13.1%	11.3%	11.5%	11.5%	Return on Shr. Equity	11.5%
	11.2%	11.1%	10.7%	10.9%	NMF	8.2%	10.0%	8.2%	13.3%	11.4%	11.5%	11.5%	Return on Com Equity	12.0%
	3.0%	2.9%	2.9%	3.3%	NMF	NMF	1.4%	NMF	4.8%	3.9%	4.0%	4.5%	Retained to Com Eq	5.0%
	73%	74%	73%	70%	NMF	110%	86%	103%	65%	66%	65%	62%	All Div'ds to Net Prof	56%

CURRENT POSITION

(\$MILL.)	2002	2003	6/30/04
Cash Assets	170.6	205.8	818.1
Other	2045.9	2181.1	1702.6
Current Assets	2216.5	2386.9	2520.7
Accts Payable	1061.6	1141.6	738.1
Debt Due	927.1	483.4	56.5
Other	231.5	223.8	266.1
Current Liab.	2220.2	1848.8	1060.7
Fix. Chg. Cov.	289%	315%	300%

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	6.0%	13.5%	4.0%
"Cash Flow"	8.0%	17.0%	5.5%
Earnings	4.5%	21.0%	6.5%
Dividends	3.0%	4.0%	1.0%
Book Value	4.0%	1.5%	5.5%

QUARTERLY REVENUES ($ mill.) A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	2575.1	1339.3	1102.4	1616.3	6633.1
2002	1871.6	1216.1	1079.8	1803.2	5970.7
2003	2512.5	1408.2	1131.8	1862.7	6915.2
2004	2595.6	1365.8	1100	1898.6	6960
2005	2650	1450	1160	2010	7270

EARNINGS PER SHARE A B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	1.61	d.06	d.25	.43	1.72
2002	1.51	.20	.02	1.02	2.75
2003	1.53	d.05	.07	1.07	2.62
2004	1.53	.28	d.06	1.00	2.75
2005	1.55	.25	.02	1.03	2.85

QUARTERLY DIVIDENDS PAID A C■

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.445	.445	.445	.445	1.78
2001	.445	.445	.445	.445	1.78
2002	.445	.445	.445	.445	1.78
2003	.445	.445	.445	.445	1.78
2004	.445	.445	.445		

BUSINESS: KeySpan Corp. is a holding company created 5/98, via the merger of KeySpan Energy (formerly Brooklyn Union) and Long Island Lighting. Acq. Eastern Enterprises 11/8/00, making KeySpan the largest gas distributor in the Northeast, serving most of New York City and nearby Long Island, and New England. Has 2.5 mill. gas meters; its market is mainly one-family homes and apartments. Also generates electricity and operates transmission/distr. sys. by contract with LI. Power Author. Parent owns 23.5% of Houston Exploration; 20% of Iroquois Pipeline. Non-regulated subs. market gas supplies, sell ind'l energy mgmt. svcs. Has 13,000 empls. Chrmn.: R.B. Catell. Inc.: NY. Address: 1 MetroTech Center, Brooklyn, NY 11201. Telephone: 718-403-1000. Web: www.keyspanenergy.com.

KeySpan is improving its financial profile. As a largely state-regulated enterprise, KeySpan has to operate with a balance sheet leveraged with senior capital. Gas distribution and power production are very capital-intensive businesses. Since the larger gas system, in particular, has no direct competition, regulators require that it finance heavily with debt—on which the interest rate is much less than the return allowed on equity capital—in order to keep charges to ratepayers as low as possible. But KeySpan, overall, has long operated with too much debt ahead of common equity, making the stock a little riskier and precluding a rising dividend. Management has been addressing the problem, and this year it has taken bolder steps to ease the pressure. In several complex financial moves, including the sale of much of its stake in Houston Exploration and a sale-and-leaseback arrangement covering the Ravenswood (New York City) power facility, KeySpan raised enough funds to effect a sizable paydown of debt while adding a bit to shareholders' equity. The stock remains a good choice for income. KeySpan's capitalization ratios are the best they've been in many years. We expect management will keep at it to gradually lower the debt component towards a more prudent 50% via asset sales. There is the possibility of some equity financing down the road, though management would have to be careful not to dilute the regulated share earnings. Meanwhile, this year's actions and the prospect of better operating earnings for 2004 from gas distribution, power production, and miscellaneous energy-related services should afford the current quarterly dividend an ample safeguard.

The current dividend yield is moderately above the gas-stock average, reflecting the absence of a growing payout. In general, gas-utility stocks have lately been getting a stronger underpinning. KeySpan's higher market value has narrowed its yield premium. That might suggest investors believe the company's finances are closer to providing the margin of safety needed to permit a dividend hike. Our take for now is that management may want to play it cautiously and defer raising the payout for several more quarters.

Gerald Holtzman   September 17, 2004

N.W. NAT'L GAS NYSE-NWN

RECENT PRICE	31.89	
P/E RATIO	17.8 (Trailing: 17.5 / Median: 14.8)	
RELATIVE P/E RATIO	1.03	
DIV'D YLD	4.1%	

VALUE LINE

TIMELINESS	5	Lowered 7/30/04
SAFETY	2	New 7/27/90
TECHNICAL	3	Lowered 9/10/04
BETA	.55 (1.00 = Market)	

High/Low price history: 25.8/19.0, 24.3/18.8, 22.8/18.3, 25.9/20.8, 31.4/23.0, 30.6/24.3, 27.9/19.5, 27.5/17.8, 26.8/21.7, 30.7/23.5, 31.3/24.0, 33.0/27.5

Target Price Range 2007 | 2008 | 2009

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 9/96
Options: Yes

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+10%)	6%
Low	25	(-20%)	-1%

Insider Decisions

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

Institutional Decisions

	1Q2003	4Q2003	1Q2004
to Buy	50	57	67
to Sell	45	36	36
Hld's(000)	10645	11210	12425

Percent shares traded: 9 / 6 / 3

% TOT. RETURN 8/04

	THIS STOCK	VL ARITH. INDEX
1 yr.	13.1	13.4
3 yr.	40.0	29.3
5 yr.	—	54.2

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
17.39	15.22	17.02	16.74	14.10	18.15	18.30	16.02	16.86	15.62	16.77	18.17	21.09	25.78	25.07	23.57	24.25	25.75	Revenues per sh	30.00
2.79	2.85	3.22	2.57	3.25	3.74	3.50	3.41	3.66	3.72	3.24	3.72	3.68	3.66	3.65	3.85	3.85	4.15	"Cash Flow" per sh	4.75
1.33	1.58	1.62	.67	.74	1.74	1.63	1.61	1.97	1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.80	2.05	Earnings per sh A	2.40
1.05	1.07	1.10	1.13	1.15	1.17	1.17	1.18	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.33	Div'ds Decl'd per sh B■	1.45
2.62	3.36	3.85	3.58	3.73	3.61	4.23	3.02	3.70	5.07	4.02	4.78	3.46	3.23	3.11	4.90	3.70	3.70	Cap'l Spending per sh	4.00
11.25	12.04	12.61	12.23	12.41	13.08	13.63	14.55	15.37	16.02	17.12	17.93	18.56	18.88	19.52	20.60	21.45	Book Value per sh C	23.50
15.96	17.14	17.41	17.68	19.46	19.77	20.13	22.24	22.56	22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.40	27.75	Common Shs Outst'g D	28.00
10.2	9.8	10.2	28.1	27.0	12.9	13.0	12.9	11.7	14.4	26.7	14.5	12.4	12.9	17.2	15.8	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	12.5
.85	.74	.76	1.79	1.64	.76	.85	.86	.73	.83	1.39	.83	.81	.66	.94	.92			Relative P/E Ratio	.85
7.7%	6.9%	6.7%	5.9%	5.7%	5.2%	5.5%	5.7%	5.2%	4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%			Avg Ann'l Div'd Yield	5.0%

CAPITAL STRUCTURE as of 6/30/04

Total Debt $505.0 mill. Due in 5 Yrs $50.0 mill.
LT Debt $500.1 mill. LT Interest $34.0 mill.
Incl. $5.6 mill. 7¼% debs. due 3/1/12, each conv.
into 50.25 com. shs. at $19.90.
(Total interest coverage: 3.0x)

Pension Assets-12/03 $168.3 mill. Oblig. $205.4 mill.

Pfd Stock None

Common Stock 27,343,860 shs.
MARKET CAP $875 million (Small Cap)

	368.3	356.3	380.3	361.6	416.7	455.8	532.1	650.3	641.4	611.3	665	705	Revenues ($mill)	850
	35.5	38.1	46.6	43.1	27.3	44.9	47.8	50.2	43.8	46.0	49.5	56.0	Net Profit ($mill)	67.0
	36.6%	36.8%	36.9%	32.9%	31.0%	35.4%	35.9%	35.4%	34.9%	33.7%	35.0%	35.0%	Income Tax Rate	35.0%
	9.6%	10.7%	12.3%	11.9%	6.6%	9.9%	9.0%	7.7%	6.8%	7.5%	7.4%	7.8%	Net Profit Margin	7.9%
	47.9%	43.5%	41.4%	46.0%	45.0%	46.0%	45.1%	43.0%	47.6%	49.7%	48.0%	48.0%	Long-Term Debt Ratio	48.0%
	45.1%	50.3%	52.6%	49.0%	50.6%	49.9%	50.9%	53.2%	51.5%	50.3%	52.0%	52.0%	Common Equity Ratio	52.0%
	607.7	643.3	657.4	748.0	815.6	661.5	887.8	880.5	937.3	1006.6	1090	1140	Total Capital ($mill)	1270
	654.3	697.2	745.3	827.5	894.7	895.9	934.0	965.0	995.6	1205.9	1280	1320	Net Plant ($mill)	1325
	7.6%	7.7%	8.9%	7.4%	5.0%	6.8%	6.7%	6.9%	5.9%	5.7%	6.0%	6.5%	Return on Total Cap'l	7.0%
	11.2%	10.5%	12.1%	10.7%	6.1%	9.7%	9.6%	10.0%	8.9%	9.1%	9.5%	9.5%	Return on Shr. Equity	10.0%
	11.8%	10.9%	12.7%	11.0%	6.0%	9.9%	10.0%	10.2%	8.5%	9.0%	9.5%	9.5%	Return on Com Equity	10.0%
	3.3%	3.0%	5.0%	3.6%	NMF	2.8%	3.1%	3.5%	1.9%	2.6%	2.5%	3.5%	Retained to Com Eq	4.0%
	74%	74%	63%	70%	118%	74%	70%	67%	79%	72%	72%	65%	All Div'ds to Net Prof	60%

CURRENT POSITION

(MILL.)	2002	2003	6/30/04
Cash Assets	7.3	4.7	7.5
Other	186.7	194.8	121.0
Current Assets	194.0	199.5	128.5
Accts Payable	74.4	86.0	78.7
Debt Due	89.8	85.2	4.9
Other	40.8	43.2	39.5
Current Liab.	205.0	214.4	123.1
Fx. Chg. Cov.	296%	280%	380%

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	4.5%	8.5%	3.0%
"Cash Flow"	1.5%	1.0%	4.0%
Earnings	5.0%	2.0%	5.5%
Dividends	1.0%	1.0%	2.5%
Book Value	4.0%	3.5%	3.5%

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	217.3	118.2	78.4	236.4	650.3
2002	278.6	101.9	78.7	182.2	641.4
2003	206.5	117.5	69.5	217.8	611.3
2004	254.5	109.7	74.0	226.8	665
2005	265	127	78.0	235	705

EARNINGS PER SHARE A

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.99	.17	d.22	.94	1.88
2002	1.32	d.13	d.26	.69	1.62
2003	1.01	.17	d.25	.83	1.76
2004	1.24	d.03	d.25	.64	1.60
2005	1.23	.16	d.24	.90	2.05

QUARTERLY DIVIDENDS PAID B■

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.31	.31	.31	.31	1.24
2001	.31	.31	.31	.315	1.25
2002	.315	.315	.315	.315	1.26
2003	.315	.315	.315	.325	1.27
2004	.325	.325	.325		

BUSINESS: Northwest Natural Gas Co. (doing business as NW Natural) distributes natural gas at retail to 90 communities, 567,479 customers, in Oregon (96% of revs.) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.4 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline sys. to bring gas to market. Owns local underground storage. Revenue breakdown: resident'l & comm'l, 84%; ind., 10%; transport. and other, 6%. Employs 1,291. Has about 10,000 com. shrhldrs. Insiders own about 1% of com. Ch. Exec. Off.: M.S. Dodson. Inc.: OR. Addr.: 220 N.W. 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural had a challenging June quarter. Warmer-than-normal weather during the second quarter sent utility earnings sharply lower for the period. The tariffs for the regulated gas system include a weather normalization clause—a provision that sets rates higher or lower to make up for the change in demand due to year-to-year temperature deviations from the region's historical average. The problem is that this rate design is operative only during the year's coldest months — November through April. As a result, since the normalized tariff isn't in force during much of the June quarter, the bottom line can display wide yearly swings for this period. The difference this time around was a $0.17-a-share dip in utility operating results. The gas distributor also had to give back, in the form of a charge for the quarter, $0.02 a share of profits recorded previously on assets that regulators are now excluding from the allowed rate base. **The recent earnings setback doesn't impair the quality of this income stock.** The weather normalization provision goes into effect again in October, when the 2004-2005 home-heating season begins. Normalization insulates the utility from the adverse financial consequences of warm winters and precludes a windfall profit during periods of extreme cold. But its main purpose is to establish a more predictable revenue flow during the heating season, when the company records all of its annual earnings, and then some. And a revenue level that's on target affords management a better handle on the amount of cash flow that it can expect operations to generate. In this way, the utility's creditworthiness should improve, lowering the cost of debt a bit and making financial planning easier.

The shares are still best held for current income. NW Natural isn't a performance stock. Its support comes mainly from the dividend, which we expect will continue to grow slowly this year and next. On this prospect, the current yield is very near the gas-stock average. We look for management to submit new tariff filings from time to time to recover the cost of new capital investments and to keep the payout ratio at a comfortable level.

Gerald Holtzman   September 17, 2004

(A) Diluted earnings per share. Excludes non-recurring gain: '98, $0.15; '00, $0.11. Next earnings report due late October.
(B) Dividends historically paid in mid-February, mid-May, mid-August, and mid-November. In '99, extra div'd of $0.005/sh. paid Dec. 15. ■ Div'd reinvestment plan available. (C) Includes intangibles. At 12/31/03: $6.66/sh.
(D) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	40
Earnings Predictability	65

To subscribe call 1-800-833-0046.

PINNACLE WEST NYSE-PNW

| RECENT PRICE | 43.23 | P/E RATIO | 16.2 (Trailing: 15.7 Median: 12.9) | RELATIVE P/E RATIO | 0.89 | DIV'D YLD | 4.4% | VALUE LINE |

TIMELINESS	4	Raised 3/28/03
SAFETY	1	Raised 5/16/03
TECHNICAL	3	Lowered 9/10/04
BETA .85 (1.00 = Market)		

High: 25.3 22.8 28.9 32.3 42.8 49.3 43.4 52.7 50.7 46.7 40.5 43.6
Low: 19.6 16.0 19.6 26.3 27.6 39.4 30.2 25.7 37.7 21.7 28.3 36.3

Target Price Range 2007 | 2008 | 2009

LEGENDS
— 1.66 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	45	(+5%)	6%
Low	40	(-5%)	3%

Insider Decisions
	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	D	0
Options	1	0	0	0	0	0	0	0	0
to Sell	1	0	1	0	0	0	0	0	0

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	125	123	99
to Sell	90	93	101
Hld's(000)	67420	67967	68573

Percent shares traded: 15 / 10 / 5

% TOT. RETURN 10/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	20.6	12.6
3 yr.	14.2	49.3
5 yr.	35.5	66.7

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
24.11	17.39	18.38	16.95	19.39	19.66	19.28	19.08	20.77	23.52	25.12	28.57	43.50	53.66	28.90	30.87	32.30	34.45	Revenues per sh F	37.75
6.10	3.45	3.27	d1.39	4.70	5.25	5.09	5.16	5.90	7.12	7.34	7.73	7.99	8.72	7.01	7.33	7.65	8.50	"Cash Flow" per sh	10.05
2.15	1.44	.81	d3.90	1.73	1.95	1.99	2.22	2.47	2.76	2.85	3.18	3.35	3.68	2.53	2.52	2.60	2.10	Earnings per sh A	3.35
3.20	.80	--	--	--	.20	.83	.93	1.03	1.13	1.23	1.33	1.43	1.53	1.63	1.73	1.83	1.91	Div'd Decl'd per sh B=	2.15
3.06	3.46	2.98	2.10	2.57	2.69	2.92	3.38	2.95	3.63	3.76	4.05	7.76	12.27	9.81	7.60	6.00	6.25	Cap'l Spending per sh	7.10
23.46	16.31	17.40	15.23	17.00	18.87	20.32	21.49	22.51	23.90	25.50	26.00	28.09	29.46	29.44	31.00	31.75	32.90	Book Value per sh C	36.50
86.72	86.72	86.87	87.01	87.16	87.42	87.43	87.52	87.52	84.83	84.83	84.83	84.83	84.83	91.26	91.29	91.40	91.40	Common Shs Outst'g D	91.40
10.8	8.7	16.3	--	10.8	11.5	9.6	10.8	11.8	11.8	15.2	11.9	11.3	12.0	14.4	14.0	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	12.5
.90	.66	1.21	--	.66	.68	.63	.72	.74	.68	.79	.68	.73	.61	.79	.80			Relative P/E Ratio	.85
13.7%	6.4%	--	--	--	.9%	4.3%	3.9%	3.5%	3.5%	2.8%	3.5%	3.8%	3.5%	4.5%	4.9%			Avg Ann'l Div'd Yield	5.1%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $3329.7 mill. Due in 5 Yrs $827.7 mill.
LT Debt $2933.7 mill. LT Interest $210.1 mill.
(LT interest earned: 2.7x)

Pension Assets-12/03 $887.3 mill. Oblig. $1.31 bill.

Pfd Stock None

Common Stock 91,318,091 shs. as of 8/4/04
MARKET CAP: $3.9 billion (Mid Cap)

	1685.4	1669.8	1817.8	1995.0	2130.6	2423.4	3690.2	4551.4	2637.3	2817.9	2950	3150	Revenues ($mill) F	3450
	198.8	194.4	198.3	248.7	252.6	270.8	283.6	312.2	215.2	230.6	240	285	Net Profit ($mill)	305
	38.2%	39.7%	39.3%	37.7%	39.5%	38.3%	44.1%	40.6%	39.1%	31.4%	31.0%	31.0%	Income Tax Rate	31.0%
	4.7%	7.2%	7.4%	6.5%	7.4%	4.3%	7.6%	15.3%	20.5%	6.2%	5.0%	5.0%	AFUDC % to Net Profit	5.0%
	55.9%	53.9%	52.0%	50.5%	47.6%	50.0%	45.1%	51.7%	51.8%	50.6%	50.0%	49.0%	Long-Term Debt Ratio	46.5%
	38.3%	40.4%	43.2%	45.6%	50.2%	50.0%	54.9%	48.3%	48.2%	49.4%	50.0%	51.0%	Common Equity Ratio	53.5%
	4633.5	4650.4	4561.1	4442.9	4307.6	4411.8	4337.8	5172.4	5567.9	5727.5	5800	5910	Total Capital ($mill)	6235
	4624.1	4647.1	4655.1	4677.6	4730.6	4778.5	5133.2	5907.3	6479.4	7480.1	7620	7940	Net Plant ($mill)	8255
	6.8%	6.4%	6.2%	7.4%	7.6%	7.9%	8.1%	7.6%	5.4%	5.5%	5.5%	6.5%	Return on Total Cap'l	6.5%
	9.7%	9.0%	9.1%	11.3%	11.2%	12.3%	11.9%	12.5%	8.0%	8.1%	8.0%	9.5%	Return on Shr. Equity	9.0%
	9.8%	9.3%	9.2%	11.6%	11.2%	12.2%	11.9%	12.5%	8.0%	8.1%	8.0%	9.5%	Return on Com Equity E	9.0%
	5.7%	5.0%	4.6%	6.9%	6.4%	7.1%	6.8%	7.3%	2.9%	2.6%	2.0%	3.5%	Retained to Com Eq	3.5%
	49%	51%	54%	44%	45%	42%	43%	41%	64%	68%	70%	62%	All Div'ds to Net Prof	64%

ELECTRIC OPERATING STATISTICS
	2001	2002	2003
% Change Retail Sales (KWH)	+3.8	-.2	+5.1
Avg. Indust. Use (MWH)	733	660	695
Avg. Indust. Revs. per KWH (¢)	5.49	5.57	5.62
Capacity at Peak (Mw)	5725	6490	5802
Peak Load, Summer (Mw)	5687	5803	6332
Annual Load Factor (%)	53.2	52.6	50.9
% Change Customers (yr-end)	+4.1	+3.1	+3.3

| Fixed Charge Cov. (%) | 375 | 274 | 250 |

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	7.5%	10.5%	Nil
"Cash Flow"	10.5%	2.5%	4.5%
Earnings	--	1.5%	2.5%
Dividends	--	7.5%	4.5%
Book Value	6.0%	4.5%	3.5%

QUARTERLY REVENUES ($ mill.)
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	938.8	1294	1574	744.6	4551.4
2002	501.5	616.4	873.0	644.4	2637.3
2003	552.7	683.3	847.7	734.2	2817.9
2004	574.4	722.7	886.8	766.1	2950
2005	630	770	930	820	3150

EARNINGS PER SHARE A
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	.70	.79	1.77	.42	3.68
2002	.63	.89	1.19	d.18	2.53
2003	.22	.60	1.20	.50	2.52
2004	.33	.78	1.15	.34	2.60
2005	.40	.80	1.40	.50	3.10

QUARTERLY DIVIDENDS PAID B=
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.35	.35	.35	.375	1.43
2001	.375	.375	.375	.40	1.53
2002	.40	.40	.40	.425	1.63
2003	.425	.425	.425	.45	1.73
2004	.45	.45	.45	.475	

BUSINESS
Pinnacle West Capital Corporation (parent of Arizona Public Service) supplies electricity to approx. 1,780,000 people in 11 of 15 Arizona counties. Electric revenue sources: residential, 50%; commercial, industrial, and other, 50%. Power costs: 36% of electric revenues; labor costs: 13% of total revenues. The mining industry is the largest industrial customer. Energy sources: coal, 20%; nuclear, 15%; gas & other, 11%; purch. power, 54%. Has 7,200 employees; 35,623 stockholders. Reported '03 depreciation rate: 3.4%. Est'd plant age: 7 years. Chairman & CEO: William J. Post. Pres.: Jack E. Davis. Inc.: Arizona. Address: 400 E. Van Buren St., Suite 700, P.O. Box 52132, Phoenix, AZ 85072-2132. Tel.: 602-379-2568. Internet: www.pinnaclewest.com.

Pinnacle West has an agreement with outside parties covering its electric rate filing. The settlement calls for an increase of $75.5 million, down from the requested $175 million. Furthermore, it lowers the allowed return on equity from the present 11.25% to 10.25% and provides for a capital structure of 55% long-term debt and 45% common equity for ratemaking purposes. (The company had sought a 50/50 split.) On the plus side, the parties recommend that PNW's APS regulated utility be allowed to acquire unregulated Pinnacle West Energy's (PWE) five plants and place them in the rate base at a value of $700 million. In exchange, APS will forego any present or future claims of stranded costs related to PWE assets. The Arizona regulators are expected to act on the settlement by yearend.

The noncore subsidiaries are average performers. SunCor, a real estate developer and landowner in Arizona, contributed $55 million to corporate net in 2003, but may earn somewhat less this year. It plans sales of up to $100 million by the end of 2005 and will transfer the proceeds to its parent rather than reinvesting in housing development. El Dorado, PNW's investment arm, which earned $7 million last year, may only break even in 2004. It has an agreement to sell its stake in a company specializing in nuclear fuel technology for $16 million, for a profit of $6 million, and will then limit investments to fields related to economic development.

Earnings may be a tad higher this year. PNW will benefit from lower regulatory asset amortization and customer growth. Other pluses include the absence of 2003's Cholla 3 coal-fired plant's forced outage and the expiration last June 30th of five years of rate reductions. But these gains will be largely offset by increased costs related to placing new plants in service. On balance, we estimate earnings of $2.60 a share in 2004. The pending rate order suggests substantial improvement next year. For now, the stock is untimely.

Dividends are growing at a healthy rate. A low payout ratio and our projection of steady earnings gains to 2007-2009 point to above-average dividend hikes over the same period. Utility investors might consider these high-quality shares.

Arthur H. Medalie   November 12, 2004

PNM RESOURCES NYSE-PNM

| RECENT PRICE | 24.02 | P/E RATIO | 17.3 (Trailing: 17.5 Median: 10.5) | RELATIVE P/E RATIO | 0.95 | DIV'D YLD | 2.7% | VALUE LINE |

TIMELINESS 3 Raised 11/5/04	
SAFETY 2 Raised 8/16/02	
TECHNICAL 2 Raised 10/22/04	
BETA .85 (1.00 = Market)	

LEGENDS
- 2.16 x Dividends p sh divided by Interest Rate
- .... Relative Price Strength
- 3-for-2 split 6/04
- Options: No
- Shaded area indicates recession

High/Low range: 9.3/6.5, 9.1/7.3, 12.2/8.1, 13.7/11.5, 15.8/10.5, 16.5/11.6, 14.3/9.9, 18.9/9.8, 25.2/15.3, 20.5/11.5, 19.6/12.6, 24.2/18.7

Target Price Range 2007 | 2008 | 2009

2007-09 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	25	(+5%)	4%
Low	20	(-15%)	-1%

% TOT. RETURN 10/04

	THIS STOCK	VL. ARITH. INDEX
1 yr.	27.2	12.6
3 yr.	-17.5	49.3
5 yr.	19.0	66.7

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	0	0
Options	5	0	3	3	0	1	0	0	2
to Sell	4	0	3	3	0	1	0	0	1

Institutional Decisions

	4Q2003	1Q2004	2Q2004
to Buy	69	83	74
to Sell	57	52	66
Hld's(000)	49740	52732	53012

Percent shares traded: 24 / 16 / 8

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
13.44	14.61	13.65	13.68	13.60	13.95	14.44	12.90	14.10	18.12	17.43	18.96	27.46	40.09	19.92	24.11	26.30	27.50	Revenues per sh	30.80
2.77	2.43	1.64	1.76	2.10	2.34	2.55	2.38	2.61	2.58	3.04	2.82	3.16	4.31	2.83	3.05	3.40	3.55	"Cash Flow" per sh	3.95
1.31	1.15	.21	.21	.50	.81	1.11	.91	1.15	1.25	1.50	1.29	1.55	2.61	1.07	1.15	1.40	1.45	Earnings per sh A	1.55
1.25	.25	--	--	--	--	--	--	.24	.42	.51	.53	.53	.53	.57	.61	.63	.66	Div'd Decl'd per sh B •	.74
1.38	1.18	1.30	1.28	1.52	1.61	1.90	1.70	1.42	2.05	1.56	2.00	4.51	4.09	2.78	2.30	2.00	2.00	Cap'l Spending per sh	2.00
12.02	12.01	11.57	11.79	10.00	8.86	10.08	11.22	12.04	12.84	13.75	14.74	15.76	17.25	16.60	17.84	18.60	19.35	Book Value per sh C	21.60
62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	62.66	61.05	58.68	56.68	58.68	60.39	60.50	60.50	Common Shs Outst'g D	61.00
7.9	7.8	34.7	29.1	16.5	9.5	7.5	10.6	11.0	10.9	9.8	9.5	8.5	7.3	15.1	14.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	15.0
.66	.59	2.58	1.86	1.00	.56	.49	.71	.69	.58	.51	.54	.55	.37	.82	.84			Relative P/E Ratio	1.00
12.0%	2.8%	--	--	--	--	--	--	1.9%	3.3%	3.5%	4.4%	4.1%	2.6%	3.5%	3.6%			Avg Ann'l Div'd Yield	3.2%

CAPITAL STRUCTURE as of 6/30/04
Total Debt $1047.8 mill. Due in 5 Yrs $362.5 mill.
LT Debt $985.3 mill. LT Interest $59.4 mill.
(LT interest earned: 3.3x)
Pension Assets-12/03 $425.7 mill. Oblig. $463.8 mill.
Pfd Stock $12.8 mill. Pfd Div'd $.6 mill.
128,000 shs. 4.58%, $100 par w/o mandatory redemption.
Sinking fund began 2/1/84.

Common Stock 60,421,857 shs. as of 7/30/04

MARKET CAP: $1.5 billion (Mid Cap)

	2001	2002	2003		
				Revenues ($mill)	904.7 / 808.5 / 883.4 / 1135.3 / 1092.4 / 1157.5 / 1611.3 / 2352.1 / 1169.0 / 1455.7 / 1590 / 1665 → 1880
				Net Profit ($mill)	75.7 / 60.9 / 72.6 / 79.3 / 105.2 / 79.9 / 92.7 / 156.3 / 64.3 / 68.9 / 85.0 / 88.0 → 85.0
				Income Tax Rate	36.9% / 45.5% / 35.2% / 37.1% / 34.9% / 34.6% / 44.5% / 34.2% / 24.5% / 29.0% / 29.0% / 29.0% → 29.0%
				AFUDC % to Net Profit	.4% / -- / -- / -- / -- / -- / -- / -- / -- / 1.7% / 2.0% / 2.0% → 2.0%
				Long-Term Debt Ratio	51.5% / 50.5% / 48.2% / 46.6% / 53.2% / 52.0% / 50.4% / 48.2% / 49.8% / 47.5% / 46.5% / 45.5% → 42.5%
				Common Equity Ratio	43.2% / 48.7% / 50.9% / 52.5% / 45.4% / 47.3% / 48.9% / 51.1% / 49.5% / 51.9% / 53.0% / 54.0% → 57.0%
				Total Capital ($mill)	1460.5 / 1444.5 / 1481.0 / 1531.2 / 1896.4 / 1901.2 / 1891.3 / 1978.7 / 1966.9 / 2077.3 / 2125 / 2170 → 2320
				Net Plant ($mill)	1696.7 / 1574.4 / 1552.7 / 1573.2 / 1593.8 / 1562.4 / 1617.3 / 1781.0 / 1867.3 / 2194.4 / 2210 / 2205 → 2145
				Return on Total Cap'l	7.4% / 6.2% / 6.6% / 6.7% / 6.9% / 5.9% / 6.6% / 9.5% / 4.7% / 4.7% / 5.5% / 5.5% → 5.5%
				Return on Shr. Equity	10.7% / 8.5% / 9.5% / 9.7% / 11.8% / 8.8% / 9.9% / 15.3% / 6.5% / 6.3% / 7.5% / 7.5% → 7.0%
				Return on Com Equity E	11.0% / 7.9% / 9.5% / 9.8% / 12.1% / 8.8% / 10.0% / 15.4% / 6.5% / 6.3% / 7.5% / 7.5% → 7.0%
				Retained to Com Eq	11.0% / 7.9% / 7.6% / 6.5% / 8.4% / 5.2% / 6.5% / 12.3% / 3.1% / 3.0% / 4.0% / 4.0% → 4.0%
				All Div'ds to Net Prof	8% / 8% / 21% / 34% / 31% / 42% / 35% / 20% / 53% / 53% / 45% / 45% → 45%

ELECTRIC OPERATING STATISTICS

	2001	2002	2003
% Change Retail Sales (KWH)	+2.3	+2.1	+2.1
Avg. Indust. Use (MWH)	4252	5186	4566
Avg. Indust. Revs. per KWH (¢)	5.16	5.16	5.00
Capacity at Peak (Mw)	1521	1742	1742
Peak Load, Summer (Mw)	1397	1456	1661
Annual Load Factor (%)	69.9	67.5	64.5
% Change Customers (yr-end)	+2.4	+1.5	+3.6

| Fixed Charge Cov. (%) | 481 | 177 | 231 |

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	7.5%	11.0%	1.5%
"Cash Flow"	5.0%	4.5%	2.5%
Earnings	12.5%	4.5%	-5%
Dividends	--	8.0%	4.5%
Book Value	5.5%	6.0%	4.0%

QUARTERLY REVENUES ($ mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	736.5	666.1	621.9	327.6	2352.1
2002	314.0	264.6	289.4	301.0	1169.0
2003	387.7	340.2	385.2	342.6	1455.7
2004	443.7	365.6	410	370.7	1590
2005	460	385	430	390	1665

EARNINGS PER SHARE A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2001	1.07	.83	.59	.12	2.61
2002	.42	.19	.30	.16	1.07
2003	.35	.29	.27	.24	1.15
2004	.41	.28	.45	.26	1.40
2005	.40	.30	.47	.28	1.45

QUARTERLY DIVIDENDS PAID B•

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2000	.133	.133	.133	.133	.53
2001	.133	.133	.133	.133	.53
2002	.133	.147	.147	.147	.57
2003	.147	.153	.153	.153	.61
2004	.153	.16	.16	.16	

BUSINESS: PNM Resources, parent of Public Service Company of New Mexico, sells electricity (75% of revenues), gas (25%), other less than (1%) in north-central New Mexico (population: 1,300,000). Largest customer: City of Albuquerque. Electric revenue breakdown: residential, 36%; commercial, 45%; industrial, 12%; other, 7%. Area's military establishments are major customers. Fuels: coal, 68%; nuclear, 30%; gas/oil, 2%. Fuel costs: 55% of revs.; labor costs: 16%. '03 depreciation rate: 3.3%. Est'd plant age: 9 years. Has 2,637 employees, 14,762 stockholders. Chairman, Chief Executive Officer & President: Jeffry E. Sterba. Incorp.: New Mexico. Address: 414 Silver Avenue, South West, Albuquerque, New Mexico 87103. Telephone: 505-241-2477. Internet: www.pnm.com.

PNM Resources has an agreement to buy privately held TNP Enterprises. It would purchase all of TNP's outstanding common shares for $189 million, with equal amounts of cash and PNM common stock. It would also assume $835 million of TNP's net debt and senior redeemable cumulative preferred stock. TNP provides transmission and distribution electric services in Texas and in southern New Mexico. It owns no generating assets. In the first full year after closing, PNM expects overhead cost reductions will lift earnings by 10% and free cash flow by 20%. The transaction is subject to various federal and state commission approvals. Closing is targeted for the summer of 2005. We won't include the acquisition in our estimates until it is consummated.

The company has issued requests for power. It seeks up to 296 megawatts (mw) of peaking and intermediate load capacity starting in 2006. Some 165 mw of summer capacity will be needed in the northern part of New Mexico and 131 mw in the south. The request results not only from customer growth but from a 15% reserve margin required by the state com-mission. (The current margin is only 5%.) The company expects to notify successful bidders by November 10th. A portion of the additional power will be available for expansion of PNM's thriving wholesale marketing operations.

Earnings are on an upward path. New long-term power contracts and higher prices are boosting wholesale operations. Too, retail energy sales continue to rise. PNM will also benefit from the absence of last year's one-time charge of $0.24 a share for the call premium paid on retired debt and from 2004's bond refinancings at lower rates. A full year of the $22 million gas rate increase in June, 2003 is another plus. All told, we estimate a 22% rise in 2004 earnings, to $1.40 a share, and a modest gain next year.

Income-oriented investors will likely fare better elsewhere. Though a low payout ratio and our projection of modest earnings gains from the current level to 2007-2009 point to above-average dividend growth over that timeframe, this stock's yield will probably remain below the group average 3 to 5 years out.

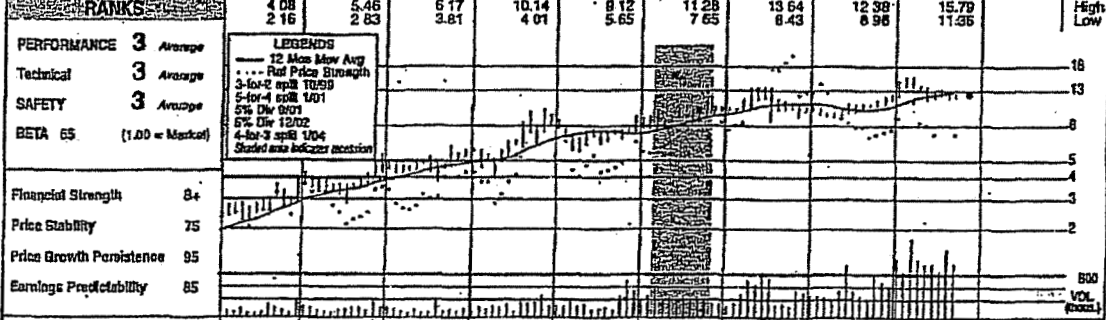Arthur H. Medalie   November 12, 2004

(A) EPS diluted. Next egs rep't due late Jan. Excl. nonrecur. gains (losses) '88, ($3.21); '90, (37¢); '92, ($2.28); '93, ($1.90); '94, 7¢; '95, net 23¢; '97, 3¢; '98, net (16¢); '99, 5¢; '00, (B) Div'ds historically paid in mid-Feb., mid-May, mid-Aug., and mid-Nov. • Div'd reinvest plan avail. (C) Incl. in-tang. In '03: $7.15/sh. (D) In mill. (E) Rate base: net orig. cost. Elect. ROE allow. in '90: 12.52%; earned on avg. com. eq. '03: 6.7%. Regul. Clim: Avg.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	60
Earnings Predictability	50

SOUTHERN CO. NYSE-SO

| RECENT PRICE | 33.25 | P/E RATIO | 16.2 | (Trailing: 16.5 Median: 14.0) | RELATIVE P/E RATIO | 0.86 | DIV'D YLD | 4.4% | VALUE LINE |

| | | | High: | 23.6 | 22.1 | 25.0 | 25.9 | 26.3 | 31.6 | 29.6 | 35.0 | 35.7 | 31.1 | 32.0 | 33.4 | | Target Price Range 2007 | 2008 | 2009 |
| | | | Low: | 18.5 | 17.3 | 19.4 | 21.1 | 19.9 | 23.9 | 22.1 | 20.4 | 20.9 | 23.2 | 27.0 | 27.4 | | | | |

TIMELINESS 3 Raised 9/17/04
SAFETY 2 Lowered 12/8/00
TECHNICAL 3 Lowered 3/12/04
BETA .65 (1.00 = Market)

LEGENDS
— 1.04 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 3/94
Options: Yes
Shaded area indicates recession

2007-09 PROJECTIONS
	Price	Gain	Ann'l Total Return
High	35	(+5%)	6%
Low	25	(-25%)	-1%

Insider Decisions
	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	4	1	0	1	0	0	3	1
to Sell	0	4	1	0	1	0	0	3	1

Institutional Decisions
	4Q2003	1Q2004	2Q2004
to Buy	265	264	205
to Sell	195	211	231
Hld's(000)	263149	269909	280819
Percent shares traded: 6 / 4 / 2

% TOT. RETURN 10/04
	THIS STOCK	VL ARITH. INDEX
1 yr.	11.1	12.6
3 yr.	54.8	49.3
5 yr.	49.4	66.7

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	© VALUE LINE PUB., INC.	07-09
12.63	13.70	15.30	18.41	16.32	17.39	14.76	14.53	14.71	15.31	16.00	16.35	Revenues per sh A	17.65
3.22	3.52	3.64	3.90	4.25	4.17	3.69	3.54	3.45	3.54	3.50	3.65	"Cash Flow" per sh	4.10
1.52	1.66	1.68	1.58	1.73	1.83	2.01	1.61	1.85	1.97	2.00	2.10	Earnings per sh B	2.45
1.18	1.22	1.26	1.30	1.34	1.34	1.34	1.34	1.36	1.39	1.42	1.46	Div'd Decl'd per sh C	1.70
2.34	2.09	1.82	2.71	2.87	3.84	3.26	3.74	3.79	2.72	2.95	3.20	Cap'l Spending per sh	3.00
12.46	13.09	13.61	14.08	14.02	13.82	15.67	11.42	12.15	13.13	13.75	14.65	Book Value per sh D	17.40
657.00	670.00	677.00	685.00	698.63	666.00	682.00	699.00	716.50	734.80	740.00	750.00	Common Shs Outst'g E	780.00
12.9	13.2	13.8	14.0	15.7	14.3	13.2	14.6	14.6	14.8	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	13.0
.85	.88	.86	.81	.82	.82	.86	.75	.80	.86			Relative P/E Ratio	.85
6.0%	5.6%	5.5%	5.9%	4.9%	5.1%	5.0%	5.7%	5.0%	4.7%			Avg Ann'l Div'd Yield	5.3%
8297.0	9180.0	10358	12611	11403	11585	10066	10155	10549	11251	11850	12250	Revenues ($mill) A	13750
1076.0	1191.0	1234.0	1245.0	1372.0	1457.0	1501.0	1306.0	1510.0	1611.0	1535	1595	Net Profit ($mill)	1930
38.9%	39.2%	37.8%	36.9%	24.1%	25.6%	31.0%	29.9%	25.9%	29.3%	30.0%	30.0%	Income Tax Rate	32.0%
2.7%	2.1%	1.9%	1.6%	1.8%	1.9%	--	--	1.5%	1.6%	1.5%	2.0%	AFUDC % to Net Profit	1.5%
44.1%	44.9%	42.8%	46.4%	45.9%	46.2%	37.1%	43.8%	43.1%	45.9%	53.5%	52.5%	Long-Term Debt Ratio	49.0%
47.6%	47.4%	49.7%	43.5%	42.9%	37.8%	50.6%	42.2%	43.4%	43.6%	44.0%	45.0%	Common Equity Ratio	49.0%
17211	18510	18553	22158	22817	24372	21147	18925	20086	22135	23250	24300	Total Capital ($mill)	27650
21117	23026	23269	23652	24124	24544	21622	23084	24642	27534	28975	30545	Net Plant ($mill)	35215
7.9%	7.9%	8.1%	7.1%	7.6%	7.8%	8.4%	8.1%	8.5%	8.5%	8.0%	8.0%	Return on Total Cap'l	8.0%
11.2%	11.7%	11.6%	10.5%	11.1%	11.5%	11.3%	12.3%	13.2%	13.5%	14.0%	14.0%	Return on Shr. Equity	13.5%
12.1%	12.6%	12.2%	11.2%	12.2%	13.6%	12.3%	14.0%	15.1%	14.9%	14.5%	14.5%	Return on Com Equity F	14.0%
2.7%	3.3%	3.0%	2.0%	2.7%	3.6%	4.1%	2.5%	4.1%	4.5%	4.0%	4.5%	Retained to Com Eq	4.0%
79%	75%	77%	84%	81%	77%	71%	85%	76%	73%	73%	70%	All Div'ds to Net Prof	70%

In September 2000, Southern conducted an initial public offering in its global independent power marketing and trading subsidiary, called Mirant. Issuing 66.7 million shares, the company and Mirant shared $1.8 billion in gross proceeds. In April 2001, management spun off the remaining 80.3% stake in Mirant to Southern investors; 0.4 of a common share in the subsidiary was distributed for each common share in the parent held. Mirant Corp. filed for Chapter 11 bankruptcy protection in July 2003.

CAPITAL STRUCTURE as of 9/30/04
Total Debt $13,520 mill. Due in 5 Yrs $6,655 mill.
LT Debt $12,707 mill. LT Interest $570 mill.
(LT interest earned: 4.6x)

Pension Assets-12/03 $5.2 bill. Oblig. $4.6 bill.
Pfd Stock $569.7 mill. Pfd Div'd $29.6 mill.
Incl. 4.20%-7.00%, cum. sub. pfd. ($100 par);
5.20%- 5.83%, cum. sub. pfd ($25 par); 4.95% cum. sub. pfd. ($100,000 liq. val).

Common Stock 739,686,919 shs.
MARKET CAP: $24.6 billion (Large Cap)

ELECTRIC OPERATING STATISTICS
	2001	2002	2003
% Change Retail Sales (KWH)	-3.2	+4.5	Nil
Avg. Indust. Use (MWH)	3778	3847	3887
Avg. Indust. Revs. per KWH (¢)	4.05	3.86	3.94
Capacity at Peak (Mw)	34579	36353	38679
Peak Load, Summer (Mw)	29700	32355	32949
Annual Load Factor (%)	62.0	51.1	62.0
% Change Customers (yr-end)	+1.4	+1.8	+1.7

| Fixed Charge Cov. (%) | 257 | 295 | 332 |

ANNUAL RATES
of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '01-'03 to '07-'09
Revenues	1.5%	-2.5%	3.0%
"Cash Flow"	1.5%	-2.5%	2.5%
Earnings	2.0%	1.5%	5.0%
Dividends	2.0%	1.0%	4.0%
Book Value	.5%	-2.5%	6.0%

Cal- endar	QUARTERLY REVENUES (mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	2270	2561	3165	2159	10155
2002	2214	2630	3248	2457	10549
2003	2548	2845	3318	2540	11251
2004	2732	3009	3441	2668	11850
2005	2825	3100	3575	2750	12250

Cal- endar	EARNINGS PER SHARE B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2001	.26	.40	.79	.16	1.61
2002	.32	.47	.82	.24	1.85
2003	.41	.49	.85	.22	1.97
2004	.45	.47	.87	.21	2.00
2005	.47	.50	.90	.23	2.10

Cal- endar	QUARTERLY DIVIDENDS PAID A C				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2000	.335	.335	.335	.335	1.34
2001	.335	.335	.335	.335	1.34
2002	.335	.335	.343	.343	1.36
2003	.343	.343	.35	.35	1.39
2004	.35	.35	.358	.358	

BUSINESS: The Southern Company's five operating subsidiaries supply electricity to about 122,000 square miles of Georgia (48% of 2003 revenues); Alabama (36%); Florida (8%); and Mississippi (8%). Revenue distrib. ('03): residential, 40%; industrial, 24%; commercial, 35%; other, 1%. Textile, chemical, and paper companies are largest customer groups, accounting for the bulk of industrial revenues. Fuel sources ('03): coal, 66%; nuclear, 15%; hydro, 4%; gas, 9%; purch. pwr, 6%. Fuel & Purchased Power costs: 33% of '03 electricity revs. Has 25,760 employees, 134,070 shareholders of record. '03 deprec. rate: 2.8%. Chrmn, Pres., and CEO: David M. Ratcliffe. Inc.: Del. Addr.: 270 Peachtree St. N.W., Atlanta, GA 30303. Tel.: 404-506-5000. Internet: www.southernco.com.

Southern Co.'s 2005 earnings prospects appear bright ... We expect the company to achieve its annual share-net growth goal of 5%. Retail utility operations are benefiting from a recovery in the Southeast. Most notably, strength in Alabama's auto, steel, and chemical sectors is driving power sales higher. A healthy industrial base is helping to enlarge the number of residential and commercial ratepayers across Southern's service territory. Efficient management of low-cost power plants and effective expense controls are producing dependable earnings streams. Assuming that temperatures stay close to the historical norm and that the hurricane season is easier, year-over-year earnings comparisons should be positive, especially in the September period. The wholesale business should also do well next year. Southern has been busy lining up long-term supply pacts with cooperatives, municipalities, and power distribution companies. This business likely will account for two percentage points of the total yearly earnings advance.
... as long as the company continues to receive favorable rate treatment.

Up to now, Southern has secured very reasonable rate orders in most of its state jurisdictions. Currently, Georgia Power has a case on file for about a $280 million annual revenue hike, based on a 12.5% return on equity. The utility needs to recoup higher purchase power, operating and maintenance, system expansion, and depreciation costs. The state public service commission staff has recommended a $57 million rate cut and only a 9.25% rate of return. A final ruling is due later this month. Our estimates reflect a fair decision (and the inclusion of the McIntosh plant in the rate base). Separately, Southern is still waiting for the Federal Energy Regulatory Commission to rule on whether or not it has an unfair advantage in the wholesale arena. Given its extensive transmission network, the company has a tough case to prove, and faces more modest returns on investment. All in all, The stock is a worthwhile current income holding, but the high share price limits potential total returns to 2007-2009. That's despite our expectation of positive rate treatment.
David M. Reimer   December 3, 2004

(A) 2000 data restated to reflect Mirant spinoff. (B) Includes Mirant earnings of 49¢ in '00. Excludes nonrecurring gain (loss): 2Q, '03, 11¢; 4Q, '03, (5¢). Next earnings report due late Jan. (C) Dividends historically paid in early Mar., June, Sep., and Dec. • Div'd reinvest. plan available. (D) Incl. deferred chgs. In '03, $1.19/sh. (E) In mill., adj'd for split. (F) Rate base: AL, MS, fair value; FL, GA, original cost. Allowed return on common eq.: 10.0%-14.5%. Earned on avg. com. eq., '03: 16.05%. Regulatory Clim.: AL, MS-Avg; GA, FL-Above Avg.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	NMF
Earnings Predictability	90

SOUTHWEST WATER NDQ-SWWC

RECENT PRICE	12.43	
TRAILING P/E RATIO	24.4	
RELATIVE P/E RATIO	1.27	
DIV'D YLD	1.6%	
VALUE LINE	4708	

RANKS

		High	Low
		4.08 / 2.16	5.46 / 2.83	6.17 / 3.81	10.14 / 4.01	9.12 / 5.65	11.28 / 7.65	13.64 / 8.43	12.38 / 8.96	15.79 / 11.36

PERFORMANCE 3 Average
Technical 3 Average
SAFETY 3 Average
BETA .65 (1.00 = Market)

LEGENDS
— 12 Mos Mov Avg
.... Rel Price Strength
3-for-2 split 10/99
5-for-4 split 1/01
5% Div 9/01
6% Div 12/02
4-for-3 split 1/04
Shaded area indicates recession

Financial Strength B+
Price Stability 75
Price Growth Persistence 95
Earnings Predictability 85

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	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
SALES PER SH	5.86	6.19	6.20	6.79	8.25	8.99	10.05	11.79	--	
"CASH FLOW" PER SH	.51	.59	.65	.72	.84	.95	.95	1.00	--	
EARNINGS PER SH	.17	.23	.28	.34	.42	.46	.44	.49	.50 A,B	.55 C/NA
DIV'DS DECL'D PER SH	.09	.10	.11	.12	.14	.15	.16	.18	--	
CAP'L SPENDING PER SH	1.04	.82	.67	.58	.61	1.17	1.97	1.25	--	
BOOK VALUE PER SH	2.65	2.78	2.98	3.36	3.79	4.23	4.71	5.40	--	
COMMON SHS OUTST'G (MILL)	11.29	11.47	11.53	11.90	12.69	12.86	13.01	14.67	--	
AVG ANN'L P/E RATIO	16.6	16.9	17.2	19.5	17.0	19.8	24.8	21.2	24.9	22.6/NA
RELATIVE P/E RATIO	1.04	.97	.89	1.12	1.11	1.01	1.35	1.21	--	
AVG ANN'L DIV'D YIELD	3.4%	2.7%	2.3%	1.6%	2.0%	1.7%	1.5%	1.7%	--	
SALES ($MILL)	66.2	71.0	72.2	80.9	104.7	115.5	130.8	173.0	--	Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.
OPERATING MARGIN	14.6%	16.0%	17.1%	17.0%	16.1%	90.8%	90.8%	12.9%	--	
DEPRECIATION ($MILL)	3.9	4.2	4.3	4.5	5.3	6.1	6.4	7.5	--	
NET PROFIT ($MILL)	1.9	2.6	3.4	4.2	5.4	6.2	6.0	7.2	--	
INCOME TAX RATE	41.8%	41.6%	39.5%	39.0%	37.0%	38.0%	34.9%	35.9%	--	
NET PROFIT MARGIN	2.9%	3.7%	4.6%	5.2%	5.1%	5.4%	4.6%	4.2%	--	
WORKING CAP'L ($MILL)	d4.1	d6.7	d2.7	1.7	1.2	4.8	d1.8	4.0	--	
LONG-TERM DEBT ($MILL)	30.7	29.8	33.4	33.5	46.4	58.1	81.0	73.1	--	
SHR. EQUITY ($MILL)	30.4	32.4	35.1	40.5	48.8	55.0	61.8	79.7	--	
RETURN ON TOTAL CAP'L	5.5%	6.8%	7.1%	7.6%	7.6%	7.6%	5.8%	6.2%	--	
RETURN ON SHR. EQUITY	6.3%	8.0%	9.5%	10.3%	11.1%	11.4%	9.7%	9.0%	--	
RETAINED TO COM EQ	2.9%	4.5%	6.0%	7.0%	7.8%	7.8%	6.3%	5.8%	--	
ALL DIV'DS TO NET PROF	55%	45%	38%	33%	31%	32%	35%	36%	--	

A No. of analysts changing earn. est. in last 16 days: 0 up, 0 down, consensus 5-year earnings growth 8.3% per year. B Based upon 3 analysts' estimates. C Based upon 4 analysts' estimates.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	11.0%	17.5%
"Cash Flow"	10.5%	5.5%
Earnings	15.5%	12.5%
Dividends	10.5%	10.5%
Book Value	11.5%	14.5%

Fiscal Year	QUARTERLY SALES ($mill.)				Full Year
	1Q	2Q	3Q	4Q	
12/31/02	28.2	32.7	34.6	35.3	130.8
12/31/03	36.1	41.5	51.4	44.0	173.0
12/31/04	39.7	45.7			
12/31/05					

Fiscal Year	EARNINGS PER SHARE				Full Year
	1Q	2Q	3Q	4Q	
12/31/01	.04	.13	.17	.12	.46
12/31/02	.04	.12	.14	.14	.44
12/31/03	d.01	.14	.23	.13	.49
12/31/04	--	.15	.23	.13	
12/31/05	.02				

Calendar	QUARTERLY DIVIDENDS PAID				Full Year
	1Q	2Q	3Q	4Q	
2001	.038	.038	.038	.038	.15
2002	.04	.04	.04	.04	.16
2003	.044	.044	.044	.048	.18
2004	.048	.048	.048	.053	.20

INSTITUTIONAL DECISIONS

	4Q'03	1Q'04	2Q'04
to Buy	32	33	26
to Sell	14	22	27
Hld's(000)	3590	3915	3985

ASSETS ($mill.)	2002	2003	6/30/04
Cash Assets	1.6	5.4	1.9
Receivables	18.7	19.8	25.5
Inventory	0	0	0
Other	11.5	10.2	11.9
Current Assets	29.8	35.4	39.3
Property, Plant & Equip, at cost	255.9	257.4	--
Accum Depreciation	62.0	67.9	--
Net Property	203.9	219.5	227.7
Other	35.0	41.3	44.8
Total Assets	268.7	298.2	311.8
LIABILITIES ($mill.)			
Accts Payable	11.4	11.4	8.2
Debt Due	2.0	2.7	4.1
Other	18.2	17.3	17.1
Current Liab	31.6	31.4	29.4

LONG-TERM DEBT AND EQUITY
as of 6/30/04

Total Debt $64.9 mill   Due in 5 Yrs. NA
LT Debt $60.8 mill.
Including Cap. Leases NA
(37% of Cap'l)
Leases, Uncapitalized Annual rentals NA

Pension Liability None in '03 vs. None in '02

Pfd Stock None   Pfd Div'd Paid None

Common Stock 16,568,295 shares
(63% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Southwest Water Co. operates as a regulated public water utility company in the United States. It has two segments, Services and Utility. The Services segment provides water and wastewater facility maintenance services, equipment maintenance and repair, sewer pipeline cleaning, billing and collection services, and state-certified water and wastewater laboratory analysis on a contract basis. It primarily operates in Texas, New Mexico, California, Colorado, Alabama, Mississippi, and Georgia. This segment also provides utility billing services for multiple family housing units. The Utility segment owns and operates rate-regulated public water utilities in California, New Mexico, and Texas, as well as owns and manages wastewater facilities in New Mexico and Texas. In July, the company acquired a Texas utility consisting of 86 water systems and 11 wastewater systems from Tecon Water Holdings, L.P. for approximately $63 million. Has about 1400 employees. Chairman, C.E.O. & President: Anton C. Garnier Inc.: DE. Address: One Wilshire Building, 624 S Grand Avenue, Ste. 2900, Los Angeles, CA 90017. Tel.: (213) 929-1800. Internet: http://www.swwc.com. AZ

October 29, 2004

TOTAL SHAREHOLDER RETURN
Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-1.76%	-9.65%	17.61%	26.90%	74.08%

YORK WATER CO NDQ-YORW

| RECENT PRICE | 17.10 | TRAILING P/E RATIO | 20.6 | RELATIVE P/E RATIO | 1.07 | DIV'D YLD | 3.3% | VALUE LINE | 4709 |

RANKS

PERFORMANCE 2 Above Average

Technical 3 Average

SAFETY 3 Average

BETA .55 (1.00 = Market)

Financial Strength B+

Price Stability 70

Price Growth Persistence NMF

Earnings Predictability NMF

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

| High | 15 33 | 20 17 | 20 23 | 21 04 | High |
| Low | 8 50 | 12 30 | 14 00 | 16 50 | Low |

© VALUE LINE PUBLISHING, INC.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/2006
REVENUES PER SH	--	--	--	--	6 07	3 06	3.07	3 25	--	
"CASH FLOW" PER SH	--	--	--	--	1.79	88	86	97	--	
EARNINGS PER SH	--	--	--	--	1 24	65	60	70	.75 ᴬᴮ	.77 ᶜ/NA
DIV'D DECL'D PER SH	--	--	--	--	.98	.51	.53	.55	--	
CAP'L SPENDING PER SH	--	--	--	--	2 11	1.12	98	1 61	--	
BOOK VALUE PER SH	--	--	--	--	10.86	5.69	5.85	6.08	--	
COMMON SHS OUTST'G (MILL)	--	--	--	--	3.04	6.31	6.36	6.42	--	
AVG ANN'L P/E RATIO	--	--	--	--	--	17.9	26 9	24.5	22.8	22.2/NA
RELATIVE P/E RATIO	--	--	--	--	--	.92	1.47	1 40	--	
AVG ANN'L DIV'D YIELD	--	--	--	--	--	4.3%	3.3%	3.2%		
REVENUES ($MILL)	--	--	--	--	18 5	19.4	19 6	20 9	--	Bold figures are consensus
NET PROFIT ($MILL)	--	--	--	--	3.8	4.0	3.8	4.4	--	earnings
INCOME TAX RATE	--	--	--	--	35 7%	35.8%	34 9%	34.8%	--	estimates
AFUDC % TO NET PROFIT	--	--	--	--	1.5%	2.2%	3.7%	--	--	and, using the
LONG-TERM DEBT RATIO	--	--	--	--	50 2%	47 7%	46.7%	43 4%	--	recent prices,
COMMON EQUITY RATIO	--	--	--	--	49.8%	52.3%	53.3%	56.6%	--	P/E ratios.
TOTAL CAPITAL ($MILL)	--	--	--	--	65 2	68 6	69.9	69 0	--	
NET PLANT ($MILL)	--	--	--	--	97.0	102.3	108.7	116.5	--	
RETURN ON TOTAL CAP'L	--	--	--	--	7.8%	7.9%	7 4%	8 5%	--	
RETURN ON SHR EQUITY	--	--	--	--	11 8%	11.2%	10 2%	11 4%	--	
RETURN ON COM EQUITY	--	--	--	--	11.6%	11.2%	10.2%	11.4%	--	
RETAINED TO COM EQ	--	--	--	--	2.5%	2.5%	1 3%	2 6%	--	
ALL DIV'DS TO NET PROF	--	--	--	--	78%	78%	88%	77%	--	

ᴬ No. of analysts changing earn. est. in last 16 days: 0 up, 0 down; consensus 5-year earnings growth 7.0% per year. ᴮ Based upon one analyst's estimate. ᶜ Based upon one analyst's estimate.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Revenues	--	6.0%
"Cash Flow"	--	13.0%
Earnings	--	16 5%
Dividends	--	5.0%
Book Value	--	4.0%

Fiscal Year	QUARTERLY SALES ($mill)				Full Year
	1Q	2Q	3Q	4Q	
12/31/02	4.7	4 9	5.3	4.7	19.6
12/31/03	4.8	5.0	5.8	5 3	20.9
12/31/04	5.4	5 5			
12/31/05					

Fiscal Year	EARNINGS PER SHARE				Full Year
	1Q	2Q	3Q	4Q	
12/31/01	13	14	23	15	.65
12/31/02	14	15	18	13	.60
12/31/03	12	16	24	18	70
12/31/04	25	16			
12/31/05					

Calendar	QUARTERLY DIVIDENDS PAID				Full Year
	1Q	2Q	3Q	4Q	
2001	.125	125	125	125	50
2002	13	13	13	13	.52
2003	135	135	135	135	.54
2004	.145	.145	.145	.145	.58

INSTITUTIONAL DECISIONS

	4Q'03	1Q'04	2Q'04
to Buy	5	2	1
to Sell	4	4	6
Hld's(000)	683	681	541

ASSETS ($mill.)

	2002	2003	6/30/04
Cash Assets	.0	0	0
Receivables	2.8	3.2	3.2
Inventory	5	6	7
Other	.4	.3	.7
Current Assets	3.7	4.1	4 6

Property, Plant

& Equip, at cost	127 7	139 1	--
Accum Depreciation	21.0	22.6	--
Net Property	106 7	116 5	130.9
Other	8.0	6.9	7.3
Total Assets	118.4	127 5	142.8

LIABILITIES ($mill.)

Accts Payable	7	1 7	3.0
Debt Due	2.8	9.9	14.4
Other	2.0	2.4	2.2
Current Liab	5.5	14.0	19.6

LONG-TERM DEBT AND EQUITY
as of 6/30/04

Total Debt $50.0 mill.   Due in 5 Yrs. NA
LT Debt $35.6 mill.
Including Cap. Leases NA
(47% of Cap'l)
Leases, Uncapitalized Annual rentals NA

Pension Liability None in '03 vs $1 7 mill in '02

Pfd Stock None   Pfd Div'd Paid None

Common Stock 6,444,689 shares
(53% of Cap'l)

BUSINESS: York Water Company engages in the impounding, purification, and distribution of water in York County, Pennsylvania. The company has two reservoirs, Lake Williams and Lake Redman, which together hold up to 2 75 billion gallons of water. It supplies water for domestic, commercial, industrial, and fire protection purposes. The company serves approximately 149,000 people in 31 municipalities in York County, Pennsylvania. It supplies through the company's own distribution system to the city of York; the boroughs of North York; West York; Manchester; Mount Wolf; New Salem; Hallam; Jacobus; Loganville; Yorkana; Seven Valleys; East Prospect; Jefferson; Glen Rock; New Freedom, Railroad; and portions of the townships of Manchester, East Manchester, West Manchester, North Codorus, Shrewsbury, North Hopewell, Hopewell, Springettsbury, Spring Garden, Conewago, Springfield, York, Hellam, Windsor, Lower Windsor, Dover, and Jackson. Has 92 employees. C.E.O. & President: William Morris. Inc.: PA. Address: 130 East Market Street, York, PA. 17401. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com. A-Z

October 29, 2004

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 9/30/2004

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-5.21%	-13.50%	5.12%	56.16%	102.10%

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	6.1 %	6.1 %	6.1 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.5 (2)	0.5 (2)	0.5 (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	6.6 %	6.6 %	6.6 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.0 (3)	0.0 (3)	0.1 (4)
5.	Adjusted Prospective Bond Yield	6.6	6.6	6.7
6.	Equity Risk Premium (5)	4.0	4.2	4.2
7.	Risk Premium Derived Common Equity Cost Rate	10.6 %	10.8 %	10.9 %

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 bonds of 0.48%, rounded to 0.5% from page 4 of this Schedule.

(3) No adjustment necessary as the average Moody's bond rating of the proxy group is A2.

(4) One-third of the average yield spread of Baa over A rated public utility bonds of 0.28% (1 / 3 x 0.28% = 0.09%, rounded to 0.1%) from page 4 of this Schedule in order to reflect the average A3 Moody's bond rating of the proxy group.

(4) From page 5 of this Schedule.

<u>Aqua Illinois, Inc. - Woodhaven Lakes Water Division</u>
Comparison of Bond Ratings and Business Profile for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
<u>Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance</u>

	November 2004 Moody's Bond Rating		November 2004 Standard & Poor's Bond Rating				Standard & Poor's Business Position / Profile (2)
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	
Proxy Group of Six C. A. Turner Water Companies							
American States Water Co. (3)	A2	6	A-	7	A-	7	3
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2
Artesian Resources, Inc.	NR	--	NR	--	NR	--	--
California Water Service Group (5)	A2	6	NR	--	A+	5	3
Middlesex Water Company	NR	--	A+	5	A	6	3
York Water Company	NR	--	NR	--	A-	5	2
Average	A2	6.0	A+	5.3	A+	5.6	2.6
Proxy Group of Three Value Line (Standard Edition) Water							
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Service Group (5)	A2	6	NR	--	A+	5	3.0
Average	A2	6.0	A+ / A	5.5	A	5.7	2.7
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance							
AGL Resources, Inc. (6)	A3	7	A-	7	A-	7	2.0
American States Water Co. (3)	A2	6	A-	7	A-	7	3.0
Aqua America, Inc. (4)	NR	--	AA-	4	A+	5	2.0
California Water Services Group (5)	A2	6	NR	--	A+	5	3.0
Cinergy Corp. (6)	Baa1	8	BBB+	8	BBB+	8	5.0
Consolidated Edison, Inc. (7)	A1	5	A	6	A	6	2.0
Dominion Resources, Inc. (8)	A2 / A3	6.5	A- / BBB+	7.5	A- / BBB+	8	6.0
Green Mountain Power Corp.	Baa1	8	BBB	9	BBB	9	5.0
KeySpan Corp. (9)	A2	6	A+	5	A	6	2.0
Middlesex Water Company	NR	--	A+	5	A	6	3.0
Northwest Natural Gas Co.	A2	6	A	6	A	6	1.0
Pinnacle West Capital Corp. (10)	Baa1	8	BBB	9	BBB	9	5.0
PNM Resources, Inc. (11)	Baa2	9	BBB	9	BBB	9	6.0
Southern Company (12)	A1	5	A+	5	A	6	4.0
Southwest Water Company	NR	--	NR	--	NR	--	--
Average	A3	6.7	A	6.7	A-	6.9	3.5

Notes: (1) From page 3 of this Schedule.
    (2) From Standard & Poor's U.S. Utilities and Power Ranking List, December 2, 2004.
    (3) Ratings and business profile are those of Southern California Water Company
    (4) Ratings and business profile are those of Aqua Pennsylvania, Inc.
    (5) Ratings and business profile are those of California Water Service Company.
    (6) Ratings are business profile are those of Atlanta Gas Light Company.
    (7) Ratings and business profile are a composite of those of Consolidated Edision of NY, Orange & Rockland Utilities, and Rockland Electric Co.
    (8) Ratings and business profile are a composite of those of Consolidated Natural Gas and Virginia Electric Power.
    (9) Ratings and business profile are a composite of those of Boston Gas Co., Colonial Gas Co., and Keyspan Energy Delivery - Long Island.
    (10) Ratings and business profile are those of Arizona Public Service Company.
    (11) Ratings and business profile are those of Public Service Co. of New Mexico.
    (12) Ratings and business profile are a composite of those of Alabama Power Co., Georgia Power Co., Gulf Power Co., Mississippi Power Co., and Savannah Electric & Power Co.

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

Aqua Illinois, Inc. – Woodhaven Lakes Water Division
Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

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-

Years	Corporate Bonds Aaa Rated	Public Utility Bonds			Spread - Corporate v. Public Utility Bonds			Spread - Public Utility Bonds	
		Aa Rated	A Rated	Baa Rated	Aa (Pub. Util.) over Aaa (Corp.)	A (Pub. Util.) over Aaa (Corp.)	Baa (Pub. Util.) over Aaa (Corp.)	A over Aa	Baa over A
August-04	5.65 %	5.95 %	6.14 %	6.45 %					
September-04	5.46	5.79	5.98	6.27					
October-04	5.47	5.74	5.94	6.17					
Average of Last 3 Months	5.53 %	5.83 %	6.02 %	6.30 %	0.30 %	0.49 %	0.77 %	0.19 %	0.28 %
Average Spread (2)					0.30 %	0.49 %	0.77 %	0.19 %	0.28 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record , November 2004, Vol. 71, No. 11

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Judgment of Equity Risk Premium for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Calculated equity risk premium based on the total market using the beta approach (1)	3.8 %	4.1 %	4.1 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.2	4.2	4.2
3.	Average equity risk premium	4.0 %	4.2 %	4.2 %

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

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected Based on the Basis of Least Relative Distance
1.	Arithmetic mean total return rate on the Standard & Poor's 500 Composite Index - 1926-2003 (1)	12.4 %	12.4 %	12.4 %
2.	Arithmetic mean yield on Aaa and Aa Corporate Bonds 1926-2003 (2)	(6.1)	(6.1)	(6.1)
3.	Historical Equity Risk Premium	6.3 %	6.3 %	6.3 %
4.	Forecasted 3-5 year Total Annual Market Return (3)	11.2 %	11.2 %	11.2 %
5.	Prospective Yield an Aaa Rated Corporate Bonds (4)	(6.1)	(6.1)	(6.1)
6.	Forecasted Equity Risk Premium	5.1 %	5.1 %	5.1 %
7.	Average of Historical and Forecasted Equity Risk Premium (5)	5.7 %	5.7 %	5.7 %
8.	Adjusted Value Line Beta (6)	0.66	0.72	0.72
9.	Beta Adjusted Equity Risk Premium	3.8 %	4.1 %	4.1 %

Notes: (1) From Stocks, Bonds, Bills and Inflation - 2004 Yearbook Valuation Edition, Ibbotson Associates, Inc., Chicago, IL, 2004.

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

(3) From Note 1, page 4 of Aqua Schedule 3.15.

(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 December 1, 2004 (see page 7 of this Schedule). The estimates are detailed below.

Fourth Quarter 2004	5.6 %
First Quarter 2005	5.8
Second Quarter 2005	6.0
Third Quarter 2005	6.2
Fourth Quarter 2005	6.4
First Quarter 2006	6.5
Average	6.1 %

(5) Average of the Historical Equity Risk Premium of 6.3% from Line No. 3 and the Forecasted Equity Risk Premium of 5.1% from Line No. 6 ((6.3% + 5.1%) / 2 = 5.7%).

(5) From page 9 of this Schedule.

2 ■ BLUE CHIP FINANCIAL FORECASTS ■ DECEMBER 1, 2004

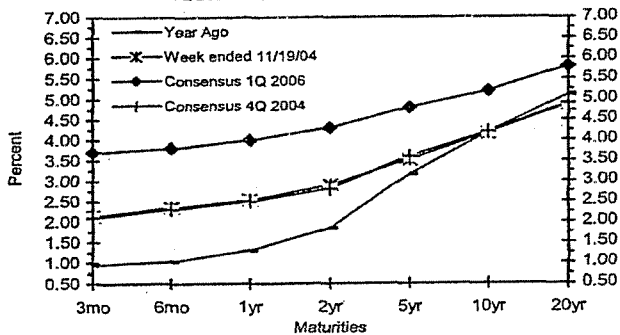## Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

	---History---				---Average For Month---			Latest Q	Consensus Forecasts-Quarterly Avg.					
	---Average For Week Ending---								4Q	1Q	2Q	3Q	4Q	1Q
Interest Rates	Nov.19	Nov.12	Nov.5	Oct.29	Oct.	Sep.	Aug.	3Q 2004	2004	2005	2005	2005	2005	2006
Federal Funds Rate	2.00	1.79	1.78	1.74	1.76	1.61	1.43	1.43	2.0	2.4	2.7	3.1	3.4	3.7
Prime Rate	5.00	4.79	4.75	4.75	4.75	4.75	4.42	4.47	5.0	5.4	5.7	6.1	6.4	6.7
LIBOR, 3-mo.	2.32	2.28	2.20	2.14	2.08	1.89	1.73	1.74	2.2	2.6	3.0	3.3	3.7	3.9
Commercial Paper, 1-mo.	2.02	2.00	1.92	1.85	1.79	1.67	1.48	1.48	2.0	2.5	2.8	3.2	3.5	3.8
Treasury bill, 3-mo.	2.13	2.08	1.99	1.91	1.79	1.68	1.50	1.51	2.1	2.4	2.8	3.1	3.4	3.7
Treasury bill, 6-mo.	2.35	2.30	2.21	2.12	2.05	1.91	1.76	1.79	2.3	2.7	3.0	3.3	3.6	3.8
Treasury bill, 1 yr.	2.53	2.47	2.35	2.27	2.23	2.12	2.02	2.08	2.5	2.9	3.2	3.6	3.8	4.0
Treasury note, 2 yr.	2.89	2.82	2.65	2.57	2.58	2.53	2.51	2.56	2.8	3.2	3.5	3.8	4.1	4.3
Treasury note, 5 yr.	3.52	3.53	3.39	3.30	3.35	3.36	3.47	3.51	3.6	3.9	4.2	4.4	4.6	4.8
Treasury note, 10 yr.	4.17	4.22	4.12	4.05	4.10	4.13	4.28	4.30	4.2	4.5	4.8	5.0	5.1	5.2
Treasury note, 20 yr.	4.88	4.95	4.85	4.79	4.85	4.89	5.07	5.07	4.9	5.2	5.4	5.5	5.7	5.8
Corporate Aaa bond	5.48	5.59	5.50	5.42	5.47	5.46	5.65	5.64	5.6	5.8	6.0	6.2	6.4	6.5
Corporate Baa bond	6.18	6.25	6.19	6.15	6.21	6.27	6.46	6.45	6.3	6.6	6.8	6.9	7.1	7.2
State & Local bonds	4.52	4.58	4.45	4.44	4.49	4.56	4.70	4.71	4.6	4.8	4.9	5.1	5.2	5.2
Home mortgage rate	5.74	5.76	5.70	5.64	5.72	5.76	5.87	5.90	5.8	6.0	6.3	6.4	6.6	6.7

	---History---								Consensus Forecasts-Quarterly Avg.					
	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Key Assumptions	2002	2003	2003	2003	2003	2004	2004	2004	2004	2005	2005	2005	2005	2006
Major Currency Index	100.0	95.1	90.8	90.7	87.8	85.3	88.0	86.5	82.4	81.0	80.3	80.1	81.0	81.3
Real GDP	0.7	1.9	4.1	7.4	4.2	4.5	3.3	3.7	3.7	3.3	3.6	3.6	3.5	3.3
GDP Price Index	2.0	2.7	1.1	1.4	1.6	2.8	3.2	1.3	2.1	2.1	2.0	2.1	2.1	2.2
Consumer Price Index	2.0	3.8	0.7	2.4	0.7	3.5	4.8	1.9	2.9	2.3	2.3	2.4	2.4	2.5

[1]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 November 19, 2004 and Year Ago vs.
4Q 2004 and 1Q 2006 Consensus forecasts

U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield
(Quarterly Average) History   Forecast

Corporate Bond Spreads
As of week ended November 19, 2004

U.S. Treasury Yield Curve
As of week ended November 19, 2004

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

		Over A Rated Public Utility Bonds
Line No.		AUS Consultants - Utility Services Study (1)
		1
Time Period		1928-2003
1.	Arithmetic Mean Holding Period Returns (2): Standard & Poor's Public Utility Index	10.8 %
2.	Arithmetic Mean Yield on: A Rated Public Utility Bonds	(6.6)
3.	Equity Risk Premium	4.2 %

Notes: (1) S&P Public Utility Index and Moody's Pubilc Utility Bond Average Annual Yields 1928-2003, (US Consultants - Utility Services, 2004).

(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.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Value Line Adjusted Betas for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

	Value Line Adjusted Beta
Proxy Group of Six C. A. Turner Water Companies	
American States Water Co.	0.70
Aqua America, Inc.	0.75
Artesian Resources Corp.	NA
California Water Service Group	0.70
Middlesex Water Company	0.60
York Water Company	0.55
Average	0.66
Proxy Group of Three Value Line (Standard Edition) Water	
American States Water Co.	0.70
Aqua America, Inc.	0.75
California Water Service Group	0.70
Average	0.72
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance	
AGL Resources, Inc.	0.80
American States Water Co.	0.70
Aqua America, Inc.	0.75
California Water Services Group	0.70
Cinergy Corp.	0.80
Consolidated Edison, Inc.	0.60
Dominion Resources, Inc.	0.85
Green Mountain Power Corp.	0.60
KeySpan Corp.	0.75
Middlesex Water Company	0.60
Northwest Natural Gas Co.	0.65
Pinnacle West Capital Corp.	0.85
PNM Resources, Inc.	0.85
Southern Company	0.65
Southwest Water Company	0.65
Average	0.72

NA = Not Available

Source of Information: Value Line Investment Survey,
September 17, October 1, October 29, November 12,
and December 3, 2004

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
of the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies,
the Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance

Line No.		Proxy Group of Six C. A. Turner Water Companies	Proxy Group of Three Value Line (Standard Edition) Water Companies	Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
		Traditional Capital Asset Pricing Model		
1.	Risk-Free Rate (1)	5.4 %	5.4 %	5.4 %
2.	Average Company-Specific Market Premium (2)	4.3	4.7	4.7
3.	Capital Asset Pricing Model Derived Company Equity Cost Rate	9.7 %	10.1 %	10.1 %
		Empirical Capital Asset Pricing Model		
4.	Risk-Free Rate (1)	5.4 %	5.4 %	5.4 %
5.	Average Company-Specific Market Premium (3)	4.8	5.1	5.1
6.	Capital Asset Pricing Model Derived Company Equity Cost Rate	10.2 %	10.5 %	10.5 %
7.	Conclusion	10.0 %	10.3 %	10.3 %

Notes: (1) Developed in note 2 of page 4 of this Schedule.

(2) Developed on page 2 of this Schedule.

(3) Developed on page 3 of this Schedule

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Indicated Common Equity Cost Rate Through Use
of the Capital Asset Pricing Model

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 6.5% (1)	CAPM Result Including Risk-Free Rate of 5.4% (2)

Traditional Capital Asset Pricing Model (3)

Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	0.70	4.6 %	10.0 %
Aqua America, Inc.	0.75	4.9	10.3
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	4.6	10.0
Middlesex Water Company	0.60	3.9	9.3
York Water Company	0.55	3.6	9.0
Average	0.66	4.3 %	9.7 % (4)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.70	4.6 %	10.0 %
Aqua America, Inc.	0.75	4.9	10.3
California Water Service Group	0.70	4.6	10.0
Average	0.72	4.7 %	10.1 % (4)
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance			
AGL Resources, Inc.	0.80	5.2 %	10.6 %
American States Water Co.	0.70	4.6	10.0
Aqua America, Inc.	0.75	4.9	10.3
California Water Services Group	0.70	4.6	10.0
Cinergy Corp.	0.80	5.2	10.6
Consolidated Edison, Inc.	0.60	3.9	9.3
Dominion Resources, Inc.	0.85	5.5	10.9
Green Mountain Power Corp.	0.60	3.9	9.3
KeySpan Corp.	0.75	4.9	10.3
Middlesex Water Company	0.60	3.9	9.3
Northwest Natural Gas Co.	0.65	4.2	9.6
Pinnacle West Capital Corp.	0.85	5.5	10.9
PNM Resources, Inc.	0.85	5.5	10.9
Southern Company	0.65	4.2	9.6
Southwest Water Company	0.65	4.2	9.6
Average	0.72	4.7 %	10.1 % (4)

See page 4 for notes.

<u>Aqua Illinois, Inc. - Woodhaven Lakes Water Division</u>
<u>Indicated Common Equity Cost Rate Through Use</u>
<u>of the Capital Asset Pricing Model</u>

	Value Line Adjusted Beta	Company-Specific Risk Premium Based on Market Premium of 6.5% (1)	CAPM Result Including Risk-Free Rate of 5.4% (2)
		<u>Empirical Capital Asset Pricing Model (5)</u>	
Proxy Group of Six C. A. Turner Water Companies			
American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc.	0.75	5.3	10.7
Artesian Resources Corp.	NA	NA	NA
California Water Service Group	0.70	5.0	10.4
Middlesex Water Company	0.60	4.6	10.0
York Water Company	0.55	4.3	9.7
Average	0.66	4.8 %	10.2 % (4)
Proxy Group of Three Value Line (Standard Edition) Water Companies			
American States Water Co.	0.70	5.0 %	10.4 %
Aqua America, Inc.	0.75	5.3	10.7
California Water Service Group	0.70	5.0	10.4
Average	0.72	5.1 %	10.5 % (4)
Proxy Group of Fifteen Utilities Selected on the Basis of Least			
AGL Resources, Inc.	0.80	5.5 %	10.9 %
American States Water Co.	0.70	5.0	10.4
Aqua America, Inc.	0.75	5.3	10.7
California Water Services Group	0.70	5.0	10.4
Cinergy Corp.	0.80	5.5	10.9
Consolidated Edison, Inc.	0.60	4.6	10.0
Dominion Resources, Inc.	0.85	5.8	11.2
Green Mountain Power Corp.	0.60	4.6	10.0
KeySpan Corp.	0.75	5.3	10.7
Middlesex Water Company	0.60	4.6	10.0
Northwest Natural Gas Co.	0.65	4.8	10.2
Pinnacle West Capital Corp.	0.85	5.8	11.2
PNM Resources, Inc.	0.85	5.8	11.2
Southern Company	0.65	4.8	10.2
Southwest Water Company	0.65	4.8	10.2
Average	0.72	5.1 %	10.5 % (4)

See page 4 for notes.

Aqua Illinois, Inc. – Woodhaven Lakes Water Division
Development of the Market-Required Rate of Return on Common Equity Using
the Capital Asset Pricing Model for
the Proxy Group of Six C. A. Turner Water Companies, the
Proxy Group of Three Value Line (Standard Edition) Water Companies and the
Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance
Adjusted to Reflect a Forecasted Risk-Free Rate and Market Return

Notes:

(1)　From the three previous month-end (Sep. '04 –Nov. '04), as well as a recently available (Dec. 3, 2004), Value Line Summary & Index, a forecasted 3-5 year total annual market return of 11.2% 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 44% produces a four-year average annual return of 9.54% ($(1.42^{.25}) - 1$). When the average annual forecasted dividend yield of 1.64% is added, a total average market return of 11.18%, rounded to 11.2%, (1.64% + 9.54%) is derived.

　　　The 3-month and spot forecasted total market return of 11.2% minus the risk-free rate of 5.4% (developed in Note 2) is 5.8% (11.2% - 5.4%). The Ibbotson Associates calculated market premium of 7.2% for the period 1926-2003 results from a total market return of 12.4% less the average income return on long-term U.S. Government Securities of 5.2% (12.4% - 5.2% = 7.2%). This is then averaged with the 7.2% Value Line market premium resulting in a 6.5% market premium. The 6.5% market premium is then multiplied by the beta in column 1 of page 2 of this Schedule.

(2)　Average forecast based upon six quarterly estimates of 20-year Treasury Bond yields per the consensus of nearly 50 economists reported in the Blue Chip Financial Forecasts dated December 1, 2004 (see page 7 of Aqua Schedule 3.14). The estimates are detailed below:

	20-Year Treasury Bond Yield
Fourth Quarter 2004	4.9%
First Quarter 2005	5.2
Second Quarter 2005	5.4
Third Quarter 2005	5.5
Fourth Quarter 2005	5.7
First Quarter 2006	5.8
Average	5.4%

(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)　Includes only those indicated common equity cost rates which are above 8.6%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14).

(5)　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, December 1, 2004
　　　　　　　　　　　　Value Line Investment Survey, September 17, October 1, October 29, November 12, and December
　　　　　　　　　　　　　　3, 2004 Standard Edition and Small and Mid-Cap Edition
　　　　　　　　　　　　Stocks, Bonds, Bills and Inflation – Valuation Edition 2004 Yearbook,
　　　　　　　　　　　　　　Ibbotson Associates, Inc., Chicago, IL

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth 1999 %	2000 %	2001 %	2002 %	2003 %	5-year Average (2) Percent %	Student's T-Test	5-Year Projected (3) Percent %	Student's T-Test
21st Century Ins. Group	0.65	0.73	4.1045	0.1053	12.1	1.8	3.7	7.4	8.5	6.7	(0.92)	13.0	(0.55)
ABM Industries Inc.	0.70	0.61	3.8382	0.0994	14.0	13.7	12.6	12.1	8.2	12.1	(0.55)	13.5	(0.48)
Abbott Labs.	0.60	0.64	4.0020	0.1036	34.7	32.5	32.5	30.4	28.6	31.3	0.74	21.0	0.58
AmerisourceBergen	0.75	0.59	4.1861	0.1363	50.0	35.1	4.9	10.8	11.2	22.4	0.14	10.5	(0.60)
Annaly Mortgage Mgmt.	0.65	0.49	3.5641	0.0923	17.9	12.2	13.8	20.3	15.7	15.9	0.30	15.5	(0.20)
Applied Ind'l Techn.	0.75	0.56	3.9603	0.1025	6.8	10.4	8.0	4.9	5.9	7.4	(0.87)	13.0	(0.55)
Archer Daniels Mid'd	0.70	0.54	3.7699	0.0973	4.5	4.9	8.1	8.8	8.2	6.7	(0.99)	10.0	(0.97)
Arrow Int'l	0.60	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.38)	12.5	(0.62)
Bail Corp.	0.66	0.73	3.9152	0.1014	15.1	18.9	21.0	32.3	28.4	22.9	0.18	24.5	1.07
Bard (C.R.)	0.75	0.59	3.7710	0.0978	20.5	20.4	18.2	20.1	19.5	19.7	0.04	22.0	0.72
Barnes Group	0.75	0.80	3.8747	0.1003	15.8	17.7	9.6	13.0	10.3	13.3	(0.47)	14.0	(0.41)
Beckman Coulter	0.80	0.38	4.0464	0.1047	46.5	36.5	27.3	28.9	20.3	31.5	0.76	14.0	(0.41)
Becton Dickinson	0.76	0.61	3.8551	0.1024	21.8	20.1	18.8	19.3	19.6	19.9	(0.03)	17.5	0.08
Berry Petroleum 'A'	0.70	0.48	3.9777	0.1030	15.5	25.6	14.3	17.6	17.6	18.1	(0.16)	16.5	(0.20)
Blyth Inc.	0.75	0.59	4.0466	0.1047	24.3	23.0	16.5	16.9	17.0	19.6	(0.05)	14.0	(0.41)
Bob Evans Farms	0.65	0.72	3.9146	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.56)	12.0	(0.69)
CLARCOR Inc.	0.65	0.71	3.7284	0.0965	16.6	16.6	15.3	14.8	14.7	15.6	(0.32)	13.5	(0.48)
ChoicePoint Inc.	0.65	0.76	4.0305	0.1043	19.1	18.1	16.3	18.1	16.1	17.3	(0.20)	18.0	(0.13)
Coca-Cola	0.65	0.41	3.8732	0.1003	34.0	39.4	35.0	34.7	34.0	35.4	1.02	33.5 (4)	2.34
Coca-Cola Bottling	0.70	0.52	3.5237	0.0912	14.7	9.8	38.5	69.0	68.5	38.0	1.20	41.0 (4)	3.39
ConAgra Foods	0.65	0.46	4.2245	0.1094	23.9	27.0	17.1	18.2	18.2	20.9	0.04	19.0	0.30
Constellation Brands	0.75	0.62	3.7903	0.0981	15.5	15.8	14.4	16.4	11.2	14.7	(0.38)	11.5	(0.76)
Corn Products Int'l	0.70	0.48	3.5467	0.0918	7.5	6.4	6.7	7.8	8.3	7.3	(0.88)	10.6	(0.90)
Curtiss-Wright	0.65	0.40	3.4561	0.0895	12.3	13.1	11.8	10.1	10.9	11.6	(0.59)	12.5	(0.62)
Dean Foods	0.70	0.64	3.3077	0.0856	20.5	20.1	8.6	17.0	12.6	15.7	(0.31)	10.5	(0.90)
Dentsply Int'l	0.70	0.66	4.1181	0.1064	18.2	19.4	16.0	17.5	15.4	17.9	(0.16)	13.5	(0.48)
Dionex Corp.	0.80	0.66	4.2075	0.1089	34.7	28.7	24.5	21.0	19.7	25.7	0.35	26.0	1.28
ESCO Technologies	0.85	0.72	3.6381	0.0942	3.5	6.4	6.1	7.1	12.0	6.8	(0.91)	11.0	(0.83)
Fortune Brands	0.65	0.41	3.6326	0.0992	12.4	17.1	17.8	21.2	20.9	17.8	(0.16)	16.5	(0.09)
Franklin Electric	0.75	0.62	3.9923	0.1033	27.8	20.8	22.0	21.0	17.9	21.8	0.11	17.5	0.08
Gen'l Dynamics	0.65	0.47	3.9984	0.1035	22.6	23.6	20.8	20.2	16.7	20.8	0.03	16.0	(0.27)
Gillette	0.65	0.76	3.6962	0.0031	41.2	65.0	48.9	53.5	61.8	54.1 (4)	2.26	39.5 (4)	3.18
Golden West Fin'l	0.65	0.74	3.6729	0.0951	14.8	14.6	16.1	16.1	16.6	15.3	(0.20)	22.5	0.79
HNI Corp.	0.70	0.50	4.0067	0.1053	19.6	16.5	15.2	14.1	13.6	15.8	(0.27)	18.0	0.30
Harland (John H.)	0.70	0.67	3.4433	0.0891	25.3	16.7	19.3	12.4	22.0	21.1	0.05	18.5	(0.20)
Hillenbrand Inds.	0.75	0.59	3.7525	0.0971	17.7	18.7	17.7	18.8	21.1	19.0	(0.09)	21.5	0.65
Int'l Flavors & Frag.	0.80	0.67	3.8611	0.1000	22.0	23.7	25.8	32.0	28.9	28.1	0.39	20.5	0.61
Invacare Corp.	0.55	0.31	3.0306	0.0840	16.8	16.1	15.8	13.5	11.6	14.4	(0.40)	12.5	(0.62)
Kellogg	0.80	0.03	3.4208	0.1104	74.5	72.0	61.1	78.4	64.8	68.4 (4)	3.25	28.0	1.88
Kimball Int'l 'B'	0.75	0.59	3.7450	0.0969	12.0	10.3	8.2	6.8	1.3	7.5	(0.86)	9.5	(1.04)
Lancaster Colony	0.65	0.59	3.9241	0.1016	22.0	24.8	19.6	16.6	16.1	20.0	0.02	16.0	(0.13)
Lance Inc.	0.65	0.46	3.6513	0.0945	13.7	12.8	13.4	11.0	13.1	12.8	(0.51)	16.5	(0.20)
Lawson Products	0.65	0.42	4.2544	0.1101	16.9	18.3	8.7	7.7	8.7	11.7	(0.58)	14.0	(0.41)
Libbey Inc.	0.75	0.59	4.0224	0.1041	47.3	39.2	23.8	28.1	20.8	30.8	0.70	17.0	0.01
Lincoln Elec Hldgs.	0.60	0.66	4.2031	0.1088	20.7	19.3	16.8	17.2	11.7	17.1	(0.22)	20.0	0.44
Lockheed Martin	0.60	0.34	3.7430	0.0989	9.0	8.0	10.6	18.0	15.8	11.9	(0.57)	22.0	0.72
Matthews Int'l	0.65	0.41	3.8671	0.1032	21.8	22.0	21.0	21.1	17.5	20.7	0.03	14.5	(0.34)
Murphy Oil Corp.	0.66	0.74	3.3158	0.0858	9.4	24.3	17.8	8.4	13.1	14.2	(0.41)	9.5	(1.04)
New Plan Excel Rlty	0.66	0.48	3.6461	0.0998	9.2	7.9	7.0	7.9	8.1	8.0	(0.83)	12.5	(0.62)
Northrop Grumman	0.60	0.36	3.6461	0.0888	14.8	16.9	6.5	4.8	4.8	9.2	(0.75)	10.5	(0.90)
Occidental Petroleum	0.85	0.73	3.4225	0.0888	7.3	27.8	23.6	16.2	20.3	19.0	(0.09)	11.5	(0.76)
PepsiAmericas Inc.	0.75	0.56	3.7762	0.0978	6.2	6.8	6.3	9.4	9.8	7.5	(0.86)	8.5	(1.04)
Pfizer Inc.	0.65	0.71	3.3984	0.0880	38.2	40.4	45.6	47.9	19.5	38.3	1.22	24.0	1.00
Procter & Gamble	0.60	0.36	4.2173	0.1092	34.4	34.4	36.8	38.9	35.4	35.5	1.03	31.0 (4)	1.88
Quaker Chemical	0.80	0.63	3.8601	0.1007	19.0	20.2	16.8	18.2	13.2	17.1	(0.22)	12.5	(0.02)

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-Nine Non-Utility Companies Comparable to
the Proxy Group of Six C. A. Turner Water Companies (1)

Proxy Group of Seventy-Nine Non-Utility Companies Comparable to the Proxy Group of Six C. A. Turner Water Companies (1)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth					5-year Average (2)		5-Year Projected (3)	
					1999	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
Ralcorp Holdings	0.65	0.28	3.4046	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.60)	11.6	(0.76)
Ruddick Corp.	0.85	0.70	3.7843	0.0960	11.4	10.6	10.6	12.3	12.1	11.5	(0.59)	12.5	(0.62)
Ryan's Family	0.75	0.56	4.2258	0.1094	14.7	14.9	14.2	15.7	14.0	14.7	(0.38)	13.0	(0.55)
SLM Corporation	0.80	0.68	3.6721	0.0925	47.9	34.6	37.3	31.9	33.3	37.0	1.13	25.5	1.21
Sara Lee Corp.	0.60	0.36	3.4174	0.0865	86.3	92.0	99.9	63.6	59.1	80.6 (4)	4.07	32.0 (4)	2.13
Schulman (A.)	0.60	0.66	4.2294	0.1095	13.4	11.7	3.9	9.0	4.2	8.4	(0.60)	8.0	(1.25)
Selective Ins. Group	0.80	0.64	3.6719	0.0951	9.4	4.6	4.6	6.1	7.7	6.5	(0.93)	13.0	(0.55)
Sensient Techn.	0.70	0.54	3.6761	0.0951	16.6	16.7	15.1	16.2	13.4	16.0	(0.29)	13.0	(0.55)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	16.6	15.9	9.4	14.0	19.4	16.5	(0.32)	22.6	0.79
Sigma-Aldrich	0.60	0.69	4.0344	0.1044	11.8	16.2	17.4	14.6	19.3	15.9	(0.30)	17.5	0.08
Smucker (J.M.)	0.65	0.41	3.7441	0.0969	11.4	13.4	12.2	9.3	10.0	11.3	(0.61)	10.0	(0.97)
Standex Int'l	0.80	0.63	3.8787	0.1004	16.9	16.5	14.5	11.4	11.1	14.9	(0.36)	16.5	0.23
Stryker Corp.	0.75	0.58	4.0976	0.1061	23.9	26.9	25.7	23.6	21.0	24.1	0.26	31.5 (4)	2.06
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	26.6	27.8	31.9	35.4	29.3	0.61	28.6	1.63
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	8.6	4.4	5.5	3.8	6.7	(0.92)	10.0	(0.97)
Tennant Co.	0.75	0.60	3.6385	0.0942	17.7	18.2	3.1	8.0	8.5	11.1	(0.62)	12.0	(0.69)
Thomas Inds.	0.75	0.56	3.8254	0.0990	12.6	13.6	11.9	10.4	9.7	11.6	(0.59)	6.5	(1.46)
Thornburg Mtg.	0.70	0.54	3.5956	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.60)	14.0	(0.41)
Universal Corp.	0.70	0.49	3.7086	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.05	17.0	0.01
WD-40 Co.	0.70	0.61	4.2230	0.1093	39.3	38.9	30.6	30.5	27.9	33.4	0.89	21.0	0.58
Walgreen Co.	0.85	0.72	3.7290	0.0965	17.9	17.9	16.7	16.3	16.1	17.0	(0.22)	17.0	0.01
Wendy's Int'l	0.75	0.54	3.9883	0.1032	15.6	16.1	18.8	15.1	13.4	15.8	(0.30)	14.0	(0.41)
West Pharmac. Svcs.	0.70	0.49	3.6054	0.0933	15.7	6.3	11.8	6.4	10.6	10.6	(0.66)	12.0	(0.69)
Zimmer Holdings	0.75	0.59	3.8939	0.1266	42.7	73.6	242.4	70.4	9.3	87.7 (4)	4.55	14.5	(0.34)
Average for the Non-Utility Group	0.73	0.56	3.8382	0.1000									
Average for the Proxy Group of Six C. A. Turner Water Companies	0.66	0.46	3.7805 (5)	0.1014									
Mean										17.5%		15.4%	
Conclusion (6)											16.5% (6)		
Conservative Mean (7)										14.8%		13.6%	
Conservative Conclusion (8)											14.2% (8)		

See pages 5 and 6 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Comparable Earnings Analysis
for a Proxy Group of Ninety-Seven Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)

Proxy Group of Ninety-Seven Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth					5-Year Average (2)		5-Year Projected (3)	
					1999	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
21st Century Ins. Group	0.65	0.73	4.1045	0.1063	12.1	1.9	3.7	7.4	8.5	6.7	(0.86)	13.0	(0.54)
ABM Industries Inc.	0.70	0.51	3.8382	0.0994	14.0	13.7	12.5	12.1	8.2	12.1	(0.52)	13.5	(0.46)
Abbott Labs.	0.60	0.64	4.0020	0.1038	34.7	32.6	32.5	30.4	26.6	31.3	0.74	21.0	0.86
Albemarle Corp.	0.65	0.77	3.1849	0.0819	16.8	17.2	11.7	11.7	12.6	14.0	(0.39)	14.0	(0.39)
Allied Capital Corp.	0.65	0.78	3.6577	0.0947	14.6	13.8	14.8	14.7	10.0	13.6	(0.39)	16.0	(0.24)
Amerada Hess	0.60	0.79	4.0009	0.1038	10.1	25.4	19.3	12.8	9.5	15.4	(0.42)	9.5	(1.21)
Anheuser-Busch	0.60	0.39	3.2183	0.0833	35.8	37.6	42.0	63.4	76.8	51.1 (4)	2.05	38.5 (4)	2.82
Annaly Mortgage Mgmt.	0.65	0.48	3.5641	0.0923	17.8	12.2	13.8	20.3	15.7	15.9	(0.27)	15.5	(0.16)
Applied Ind'l Techn.	0.75	0.59	3.9603	0.1025	6.8	10.4	9.0	4.9	5.9	7.4	(0.63)	13.0	(0.54)
Archer Daniels Mid'ld	0.70	0.54	3.7889	0.0973	4.5	4.9	6.1	6.8	6.2	5.7	(0.64)	10.0	(0.99)
Arrow Int'l	0.60	0.33	3.9025	0.1010	15.8	17.0	14.3	13.1	13.3	14.7	(0.35)	12.5	(0.61)
Bell Corp.	0.65	0.73	3.9152	0.1014	15.1	16.8	21.0	32.3	28.4	22.8	0.19	24.5	1.18
Bemis Inc.	0.80	0.82	4.0391	0.1045	13.2	12.7	8.6	11.1	12.6	11.6	(0.55)	12.0	(0.49)
Bard (C.R.)	0.75	0.59	3.7710	0.1003	20.5	20.4	18.2	20.1	19.5	19.7	(0.02)	22.0	0.01
Barnes Group	0.75	0.60	3.8747	0.1003	15.8	17.7	9.8	13.0	10.3	13.3	(0.44)	14.0	(0.39)
Beckman Coulter	0.80	0.39	4.0484	0.1047	46.5	36.5	27.3	28.9	20.3	31.6	0.78	14.0	(0.39)
Becton Dickinson	0.76	0.81	3.9551	0.1024	21.8	20.1	18.8	19.3	19.8	19.9	(0.01)	17.5	0.13
Berry Petroleum 'A'	0.70	0.48	3.9777	0.1030	16.5	25.6	14.3	17.8	17.5	18.1	(0.13)	16.5	(0.16)
Blyth Inc.	0.75	0.59	4.0458	0.1047	24.3	23.0	18.5	16.9	17.0	19.6	(0.03)	14.0	(0.39)
Bob Evans Farms	0.65	0.72	3.9148	0.1013	12.3	11.1	12.5	13.4	11.4	12.1	(0.52)	12.0	(0.69)
CLARCOR Inc.	0.85	0.71	3.7284	0.0965	16.8	16.6	15.3	14.8	14.7	15.6	(0.29)	13.6	(0.46)
ChoicePoint Inc.	0.85	0.76	4.0308	0.1043	19.1	16.1	16.3	16.1	16.1	17.3	(0.19)	16.0	(0.09)
City National Corp.	0.90	0.79	3.3312	0.0862	18.9	17.7	18.4	18.3	15.3	18.9	(0.20)	14.0	(0.39)
Coca-Cola	0.65	0.41	3.8732	0.1003	34.0	39.4	35.0	34.7	34.0	35.4	1.01	33.5 (4)	2.52
Commercial Metals	0.90	0.81	4.0341	0.1044	11.3	11.0	5.6	8.1	3.7	7.9	(0.80)	14.5	(0.31)
ConAgra Foods	0.70	0.52	3.5237	0.0912	23.9	27.0	17.1	18.2	18.2	20.8	0.08	19.0	0.38
ConocoPhillips	0.85	0.75	3.1745	0.0822	10.5	28.4	11.4	5.1	13.4	13.8	(0.41)	8.0	(1.28)
Com Products Int'l	0.75	0.62	3.7903	0.0981	7.5	6.4	6.7	7.6	8.3	7.3	(0.64)	10.5	(0.91)
Curtiss-Wright	0.70	0.48	3.4687	0.0918	12.3	13.1	11.6	10.1	10.9	11.6	(0.55)	12.5	(0.61)
Dean Foods	0.65	0.40	3.4681	0.0895	20.5	20.1	8.5	17.0	12.6	15.7	(0.28)	10.5	(0.91)
Dentsply Int'l	0.70	0.54	3.3077	0.0856	19.2	19.4	18.0	17.6	15.4	17.9	(0.14)	13.5	(0.46)
Donaldson Co.	0.90	0.81	3.6120	0.0938	23.8	25.1	23.7	22.7	21.3	23.3	0.22	21.5	0.73
Federated Investors	0.90	0.82	3.8584	0.0999	104.4	105.1	72.8	69.6	51.7	78.8 (4)	3.97	28.5	1.93
Ferro Corp.	0.85	0.80	3.5596	0.0921	24.0	23.7	13.0	8.5	6.4	15.0	(0.33)	10.5	(0.01)
Fortune Brands	0.85	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.9	17.9	(0.14)	16.5	(0.01)
Franklin Electric	0.65	0.41	3.9326	0.0982	27.8	21.8	22.0	21.0	17.8	21.9	0.13	17.5	0.13
Gen'l Dynamics	0.75	0.62	3.9823	0.1033	22.5	23.6	20.8	20.2	16.7	20.8	0.05	16.0	(0.24)
Gillette	0.65	0.47	3.9984	0.1035	41.2	65.0	46.9	63.5	61.8	54.1 (4)	2.24	39.6 (4)	3.42
Golden West Fin'l	0.85	0.74	3.6952	0.0931	14.8	18.5	19.1	18.9	18.8	17.2	(0.19)	22.5	0.88
HNI Corp.	0.70	0.50	3.6729	0.0951	19.8	16.7	15.2	14.1	13.8	16.3	(0.24)	19.0	0.38
Harland (John H.)	0.80	0.68	4.0867	0.1053	25.3	14.9	19.3	22.4	22.0	21.1	0.07	15.5	(0.16)
Harte-Hanks	0.80	0.67	3.2423	0.0839	12.0	14.9	14.4	17.0	15.7	14.8	(0.34)	15.0	(0.24)
Hillenbrand Inds.	0.80	0.76	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	(0.07)	21.5	0.73
IHOP Corp.	0.75	0.59	3.6811	0.0953	14.2	13.6	12.9	11.2	11.1	12.6	(0.49)	12.0	(0.69)
Int'l Flavors & Frag.	0.75	0.67	3.7525	0.0971	22.0	23.7	26.8	32.0	26.9	26.1	0.40	20.5	0.88
Investors Corp.	0.80	0.67	3.6911	0.1000	15.8	15.1	15.6	13.5	11.6	14.4	(0.37)	12.5	(0.01)
Johnson & Johnson	0.65	0.48	3.2778	0.0849	28.0	25.5	24.3	30.0	26.8	26.5	0.43	22.5	0.88
Kellogg	0.55	0.31	3.6309	0.0940	74.5	72.6	61.1	79.4	54.5	68.4	3.18	28.0 (4)	1.70
Kirby Corp.	0.80	0.79	3.8446	0.0995	10.4	13.0	13.2	11.9	11.0	11.9	(0.53)	11.5	(0.76)
Lancaster Colony	0.75	0.59	3.7450	0.0969	22.9	24.6	19.6	16.6	18.1	20.0	(0.47)	18.0	(0.09)
Lance Inc.	0.65	0.44	3.9241	0.1016	13.7	12.6	13.4	11.0	13.1	12.8	(0.55)	16.5	(0.16)
Lawson Products	0.65	0.42	3.6513	0.0945	15.9	16.3	6.7	7.7	9.7	11.7	(0.47)	14.0	(0.39)
Lincoln Elec Hldgs.	0.80	0.68	4.0224	0.1041	20.7	19.3	16.8	17.2	11.7	17.1	(0.19)	20.0	0.51
Marathon Oil Corp.	0.85	0.70	3.5433	0.0917	8.0	27.0	20.7	11.1	16.7	16.1	(0.13)	14.0	(0.39)
Matthews Int'l	0.65	0.41	3.7430	0.0969	21.8	22.0	21.0	21.1	17.5	20.7	0.05	14.5	(0.31)
McGraw-Hill	0.80	0.65	3.1551	0.0817	23.7	26.2	25.9	26.6	24.6	25.4	0.36	25.0	1.25
Medtronic Inc.	0.90	0.76	3.9651	0.1028	24.7	25.4	23.0	21.8	22.0	23.0	0.20	20.5	0.58
Merck & Co.	0.65	0.77	3.7757	0.0977	44.5	46.0	45.4	39.3	42.3	43.5	1.55	27.0	1.55

Aqua Illinois, Inc. – Woodhaven Lakes Water Division
Comparable Earnings Analysis
for a Proxy Group of Ninety-Seven Non-Utility Companies Comparable to
the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)

Proxy Group of Ninety-Seven Non-Utility Companies Comparable to the Proxy Group of Three Value Line (Standard Edition) Water Companies (9)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth					5-year Average (2)		5-Year Projected (3)	
					1999	2000	2001	2002	2003	Percent	Student's T-Test	Percent	Student's T-Test
Mercury General	0.90	0.80	3.3096	0.0857	14.7	10.6	9.8	10.2	14.1	11.9	(0.53)	18.0	0.21
Minerals Techn.	0.90	0.79	3.6285	0.0939	12.6	12.6	10.2	9.1	7.3	10.4	(0.63)	10.5	(0.91)
Murphy Oil Corp.	0.85	0.74	3.6871	0.1032	9.4	24.3	17.6	6.4	13.1	14.2	(0.36)	9.5	(1.06)
New Plan Excel Rity	0.65	0.48	3.3158	0.0856	9.2	7.9	7.0	7.8	8.1	8.0	(0.79)	12.5	(0.61)
Northrop Grumman	0.60	0.36	3.8461	0.0996	14.8	15.9	5.5	4.8	4.8	9.2	(0.71)	10.5	(0.91)
Occidental Petroleum	0.85	0.73	3.4225	0.0886	7.3	27.8	23.6	18.2	20.3	19.0	(0.07)	11.5	(0.76)
Pactiv Corp.	0.85	0.77	4.0803	0.1091	7.1	9.3	9.8	24.5	21.7	14.5	(0.36)	16.0	(0.09)
People's Bank	0.65	0.72	3.2209	0.0834	14.3	12.3	2.6	5.9	6.4	8.3	(0.77)	10.5	(0.91)
PepsiAmericas Inc.	0.75	0.58	3.7762	0.0978	6.2	5.8	6.3	9.4	9.6	7.5	(0.82)	9.5	(1.06)
PepsiCo Inc.	0.65	0.44	3.1931	0.0827	26.6	30.1	34.8	37.7	30.0	31.8	0.78	32.0 (4)	2.30
Pfizer Inc.	0.85	0.71	3.3964	0.0880	39.2	40.4	45.8	47.9	19.5	38.3	1.20	24.0	1.10
Protective Life	0.90	0.79	3.7503	0.0971	17.7	12.3	10.1	10.0	9.8	12.0	(0.53)	11.0	(0.84)
Quaker Chemical	0.80	0.63	3.8901	0.1007	19.0	20.2	16.8	16.2	13.2	17.1	(0.19)	12.5	(0.61)
Ralcorp Holdings	0.55	0.29	3.4046	0.0861	11.2	10.8	9.9	12.3	13.0	11.4	(0.57)	11.5	(0.76)
Ruddick Corp.	0.85	0.70	3.7843	0.0980	11.4	10.8	10.8	12.3	12.1	11.5	(0.56)	12.5	(0.61)
SLM Corporation	0.80	0.66	3.6721	0.0925	47.9	34.8	37.3	31.9	33.3	37.0	1.12	25.5	1.33
Sara Lee Corp.	0.50	0.36	3.4174	0.0886	66.3	92.0	99.9	63.8	59.1	80.6 (4)	3.89	32.0 (4)	2.30
Selective Ins. Group	0.80	0.64	3.6719	0.0951	9.4	4.6	4.5	6.1	7.7	6.5	(0.89)	13.0	(0.54)
Sensient Techn.	0.70	0.54	3.6761	0.0951	18.6	16.7	15.1	16.2	13.4	16.0	(0.26)	13.0	(0.54)
ServiceMaster Co.	0.75	0.55	4.0512	0.1049	18.6	15.9	9.4	14.0	19.4	15.5	(0.30)	22.5	0.86
Sigma-Aldrich	0.80	0.69	4.0344	0.1044	11.8	16.2	17.4	14.8	19.3	15.9	(0.27)	17.5	0.13
Smucker (J.M.)	0.65	0.41	3.7441	0.0969	11.4	13.4	12.2	9.3	10.0	11.3	(0.57)	10.0	(0.99)
Standex Int'l	0.80	0.63	3.8767	0.1004	16.9	16.5	14.5	11.4	11.1	14.9	(0.34)	16.5	0.28
Stryker Corp.	0.75	0.58	4.0975	0.1061	23.9	25.9	25.7	23.6	21.0	24.1	0.27	31.5 (4)	2.22
Sysco Corp.	0.80	0.65	3.5151	0.0910	25.4	25.6	27.8	31.9	35.4	29.3	0.61	28.5	1.78
Tecumseh Products 'A'	0.80	0.62	3.9302	0.1017	13.1	6.6	4.4	5.5	3.8	6.7	(0.88)	10.0	(0.99)
Tennant Co.	0.75	0.60	3.6385	0.0942	17.7	18.2	3.1	6.0	9.5	11.1	(0.58)	12.0	(0.69)
Thomas Inds.	0.75	0.56	3.8254	0.0990	12.5	13.5	11.9	10.4	9.7	11.6	(0.55)	6.5	(1.51)
Thornburg Mtg.	0.70	0.54	3.5856	0.0931	8.2	9.2	11.0	14.4	14.2	11.4	(0.57)	14.5	(0.31)
Toro Co.	0.80	0.69	3.2796	0.0849	12.5	14.3	14.8	17.4	18.5	15.5	(0.30)	27.0	1.55
Union Pacific	0.90	0.78	3.2465	0.0841	8.2	9.0	8.7	9.3	8.5	8.7	(0.74)	9.0	(1.13)
Universal Corp.	0.70	0.49	3.7086	0.0960	23.6	23.7	21.4	18.1	18.3	21.0	0.07	17.0	0.06
Unocal Corp.	0.90	0.78	3.4344	0.0889	5.2	26.6	19.2	10.0	16.0	15.4	(0.30)	14.5	(0.31)
Valspar Corp.	0.90	0.61	3.6618	0.0946	20.9	19.8	7.9	16.3	12.8	15.6	(0.29)	13.0	(0.54)
Walgreen Co.	0.85	0.72	3.7290	0.0955	17.9	17.9	16.7	16.3	16.1	17.0	(0.20)	17.0	0.06
Wels Markets	0.70	0.52	3.2491	0.0841	8.5	7.9	10.1	10.4	9.5	9.3	(0.70)	10.5	(0.91)
Wendy's Int'l	0.75	0.54	3.9883	0.1032	15.6	16.1	16.8	15.1	13.4	15.8	(0.28)	14.0	(0.39)
West Pharmac. Svcs.	0.70	0.49	3.6054	0.0933	15.7	8.3	11.8	6.4	10.6	10.6	(0.62)	12.0	(0.68)
Zimmer Holdings	0.75	0.59	3.8939	0.1266	42.7	73.6	242.4	70.4	9.3	87.7 (4)	4.45	14.5	(0.31)
Average for the Non-Utility Group	0.77	0.62	3.7016	0.0961									
Average for the Proxy Group of Three Value Line (Standard Edition) Water Companies	0.72	0.54	3.6320 (10)	0.0940									

	5-year Average	5-Year Projected
Mean	16.7%	15.5%
Conclusion (6)	16.1% (6)	
Conservative Mean (7)	14.4%	13.5%
Conservative Conclusion (8)	14.0% (8)	

See pages 6 and 6 for notes.

Aqua Illinois, Inc. - Woodhaven Lakes Water Division
Comparable Earnings Analysis
for a Proxy Group of Seventy-One Non-Utility Companies Comparable to
the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)

Proxy Group of Seventy-One Non-Utility Companies Comparable to the Proxy Group of Fifteen Utilities Selected on the Basis of Least Relative Distance (11)	Adj. Beta	Unadj. Beta	Standard Error of the Regression	Standard Deviation of Beta	Rate of Return on Net Worth					5-year Average (2)		5-Year Projected (3)	
					1999 %	2000 %	2001 %	2002 %	2003 %	Percent %	Student's T-Test	Percent %	Student's T-Test
Abemate Corp.	0.85	0.77	3.1649	0.0819	16.6	17.2	11.7	11.7	12.6	14.0	(0.30)	14.0	(0.31)
Alberto Culver 'B'	0.70	0.50	2.8480	0.0763	15.2	15.3	16.0	16.0	15.3	15.4	(0.19)	14.6	(0.24)
Alexander & Baldwin	0.85	0.77	3.1103	0.0805	10.8	11.3	9.5	8.0	10.0	9.9	(0.02)	12.5	(0.54)
Allied Capital Corp.	0.85	0.76	3.6577	0.0947	14.6	13.8	14.8	14.7	10.0	13.6	(0.33)	15.0	(0.16)
Anheuser-Busch	0.60	0.36	3.2183	0.0833	35.8	37.6	42.0	63.4	78.6	51.1 (4)	2.60	35.5 (4)	2.00
Amely Mortgage Mgmt.	0.65	0.48	3.5941	0.0923	17.6	12.2	13.8	20.3	15.7	15.9	(0.16)	16.5	(0.09)
Ashland Inc.	0.85	0.70	3.0684	0.0794	9.8	14.9	8.2	5.9	4.5	10.7	(0.59)	9.0	(1.06)
Baldor Electric	0.85	0.74	3.0142	0.0780	18.4	17.7	8.5	8.7	9.5	12.2	(0.44)	15.0	(0.16)
Banta Corp.	0.75	0.50	2.9767	0.0771	15.4	16.6	14.2	13.3	12.2	14.2	(0.29)	14.0	(0.31)
CLARCOR Inc.	0.85	0.71	3.7264	0.0965	16.6	16.8	15.3	14.6	14.7	15.6	(0.17)	13.5	(0.39)
Capitol Fed. Fnl	0.70	0.80	2.9386	0.0761	4.1	7.7	7.4	8.1	8.3	6.7	(0.87)	10.0	(0.81)
Catellus Development	0.80	0.63	3.1379	0.0812	11.9	16.2	22.2	16.0	15.4	16.3	(0.12)	20.5	0.66
Cincinnati Financial	0.85	0.73	3.1407	0.0813	4.7	2.0	3.2	6.4	8.2	4.3	(1.05)	7.5	(1.26)
City National Corp.	0.80	0.79	3.3312	0.0862	18.9	17.7	16.4	16.3	15.3	16.9	(0.07)	14.0	(0.31)
ConAgra Foods	0.70	0.62	3.5237	0.0912	23.9	27.0	17.1	18.2	18.2	20.8	0.24	19.0	0.43
ConocoPhillips	0.85	0.75	3.1745	0.0822	10.5	28.4	11.4	5.1	13.4	13.8	(0.31)	8.0	(1.21)
Crescent Real Est.	0.80	0.64	2.8660	0.0769	6.5	6.0	7.0	15.3	15.2	9.8	(0.63)	14.5	(0.24)
Curtiss-Wright	0.70	0.48	3.5467	0.0918	12.3	13.1	11.8	10.1	10.9	11.6	(0.49)	12.5	(0.54)
Dean Foods	0.65	0.40	3.4581	0.0895	20.5	20.1	8.5	17.0	12.8	15.7	(0.16)	10.5	(0.64)
Dentsply Int'l	0.70	0.54	3.3077	0.0858	19.2	19.4	18.0	17.0	15.4	17.9	0.01	13.5	(0.39)
First Midwest Bancorp	0.80	0.76	2.9450	0.0762	18.2	16.9	18.4	18.3	17.8	18.1	0.02	18.6	0.28
Fortune Brands	0.85	0.72	3.6381	0.0942	12.4	17.1	17.8	21.2	20.0	17.9	0.02	18.5	0.08
Golden West Fin'l	0.86	0.75	3.5952	0.0931	14.8	14.8	16.1	19.1	18.8	17.3	0.01	22.5	0.98
HNI Corp.	0.85	0.74	3.6729	0.0951	18.6	18.5	16.2	14.1	13.6	16.3	(0.12)	19.0	0.43
Harte-Hanks	0.80	0.66	3.2423	0.0839	12.6	14.9	14.4	17.0	16.7	14.9	(0.23)	18.0	(0.18)
Healthcare Rlty Trust	0.65	0.43	3.0801	0.0797	8.5	8.0	7.9	9.0	7.7	8.2	(0.75)	11.5	(0.69)
Hersey Foods	0.60	0.37	3.1464	0.0816	28.9	28.1	32.9	31.8	37.1	31.4	1.06	33.5 (4)	2.50
Hillenbrand Inds.	0.60	0.67	3.4433	0.0891	17.7	18.7	17.7	19.8	21.1	19.0	0.09	21.6	0.81
Hormel Foods	0.85	0.41	2.9793	0.0771	19.0	19.5	18.3	17.0	14.8	17.7	(0.01)	17.6	0.21
Hospitality Properties	0.80	0.68	3.1431	0.0814	7.4	8.5	8.2	8.7	7.0	8.0	(0.77)	8.0	(1.21)
IHOP Corp.	0.65	0.59	3.6811	0.0953	14.2	13.6	12.9	11.2	11.1	12.6	(0.41)	12.0	(0.61)
Int'l Flavors & Frag.	0.75	0.59	3.7525	0.0971	22.0	23.7	28.8	32.0	29.9	28.1	0.65	20.5	0.66
Johnson & Johnson	0.65	0.46	3.2776	0.0849	28.0	25.5	24.3	30.0	28.8	28.6	0.68	22.5	0.98
Kellogg	0.55	0.31	3.6306	0.0940	74.5	72.8	61.1	79.4	64.5	68.4 (4)	3.95	24.0	1.76
Kimberly-Clark	0.70	0.49	3.0057	0.0778	31.6	31.2	30.9	30.9	25.4	30.0	0.85	24.0	1.18
Kraft Foods	0.60	0.37	2.6494	0.0843	13.0	14.2	8.0	13.6	12.1	12.2	(0.44)	11.0	(0.76)
Lawson Products	0.85	0.42	3.6513	0.0945	16.9	18.3	8.7	7.7	9.7	11.7	(0.48)	14.0	(0.31)
Marathon Oil Corp.	0.85	0.70	3.5433	0.0917	8.0	27.0	20.7	11.1	10.7	16.1	0.02	14.0	(0.31)
McClatchy Co.	0.75	0.60	3.0524	0.0790	8.4	9.3	6.3	12.5	11.8	9.9	(0.02)	10.5	(0.84)
McGraw-Hill	0.80	0.65	3.1551	0.0817	23.7	26.2	25.9	28.6	24.6	26.4	0.59	25.0	1.33
Media General 'A'	0.85	0.78	3.1339	0.0811	6.3	4.6	1.5	5.0	4.8	4.3	(1.05)	6.5	(1.43)
Meredith Corp.	0.90	0.78	3.0251	0.0783	21.3	21.3	17.6	11.2	18.4	18.0	0.02	17.0	0.13
Minerals Techn.	0.90	0.79	3.6265	0.0939	12.8	12.6	10.2	9.1	7.3	10.4	(0.58)	10.5	(0.84)
New Plan Excel Rlty	0.85	0.46	3.3158	0.0858	9.2	7.9	7.0	7.8	8.1	8.0	(0.77)	12.5	(0.54)
New York Times	0.85	0.77	3.1153	0.0808	21.4	28.1	23.6	24.1	21.5	23.5	0.46	23.0	1.03
Occidental Petroleum	0.85	0.73	3.4225	0.0888	7.3	27.8	23.8	16.2	20.3	19.0	0.09	11.5	(0.66)
People's Bank	0.85	0.72	3.2209	0.0834	14.3	9.3	2.8	5.9	6.4	8.3	(0.74)	10.5	(0.84)
PepsiCo Inc.	0.65	0.44	3.1931	0.0827	28.8	30.1	34.8	37.7	30.0	31.8	1.09	32.0 (4)	2.37
Pfizer Inc.	0.65	0.71	3.3984	0.0880	39.2	40.4	45.6	47.9	19.5	38.3	1.60	24.0	1.18
Plum Creek Timber	0.70	0.64	2.9762	0.0771	17.4	16.8	9.2	10.6	8.7	12.7	(0.40)	16.0	(0.01)
Popular Inc.	0.80	0.64	3.1070	0.0804	14.2	13.6	13.4	14.6	17.1	14.8	(0.25)	15.5	(0.09)
Pulitzer Inc.	0.75	0.59	2.9221	0.0756	2.6	4.4	1.3	4.3	5.9	3.7	(1.10)	6.5	(1.43)
RLI Corp.	0.75	0.55	3.1468	0.0815	10.7	8.8	9.0	8.4	10.6	9.5	(0.65)	11.0	(0.76)
Ratcorp Holdings	0.55	0.29	3.4046	0.0881	11.2	10.8	9.9	12.3	13.0	11.4	(0.50)	11.5	(0.69)
SLM Corporation	0.80	0.66	3.5721	0.0925	47.9	34.8	37.3	31.9	33.3	37.0	1.50	25.5	1.40

Aqua Illinois, Inc. – Woodhaven Lakes Water Divison
Comparable Earnings Analysis

Notes: (1)   The criteria for selection of the proxy group of seventy-nine non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of seventy-nine non-utility companies was selected based upon the proxy group of six C. A. Turner water companies' unadjusted beta range of 0.15 - 0.75 and standard error of the regression range of 3.2822 – 4.2788. 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 accompanying 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 2003.

(3)   2007-2009.

(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 mean historical and projected returns as fully explained in Ms. Ahern's accompanying testimony.

(5)   The standard deviation of the proxy group of six C. A. Turner water companies' standard error of the regression is 0.1661. 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

$$\text{Thus, } 0.1661 = \frac{3.7805}{\sqrt{518}} = \frac{3.7805}{22.7596}$$

(6)   Mid-point of the arithmetic mean of the historical five year average and five year projected rate of return on net worth.

(7)   Arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.6%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14.)

(8)   Mid-point of the arithmetic mean of historical five year rates of return and five year projected rates of return on net worth, common equity or partners' capital excluding those 20% and above as well as those below 8.8%, i.e., 200 basis points above the prospective yield of 6.6% on A rated Moody's public utility bonds (from page 1 of Aqua Schedule 3.14.)

(9)   The criteria for selection of the proxy group of ninety-seven non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of ninety-seven non-utility companies was selected based upon the proxy group of three Value Line (Standard Edition) water companies' unadjusted beta range of 0.26 - 0.82 and standard error of the

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<u>Comparable Earnings Analysis</u>

regression range of 3.1532– 4.1108. 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 accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(10)   The standard deviation of the proxy group of three Value Line (Standard Edition) water companies' standard error of the regression is 0.1596 (3.6320 / 22.7596).

(11)   The criteria for selection of the proxy group of seventy-one non-utility companies was that the non-utility companies be domestic and have a meaningful rate of return on net worth, common equity or partners' capital for each of the five years ended 2003 or projected 2007 - 2009 as reported in Value Line Investment Survey (Standard Edition). The proxy group of seventy-one non-utility companies was selected based upon the proxy group of fifteen utilities selected on the basis of least relative distance's unadjusted beta range of 0.27 - 0.79 and standard error of the regression range of 2.8609– 3.7297. 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 accompanying direct testimony. Plus or minus three standard deviations captures 99.73% of the distribution of unadjusted betas and standard errors of the regression.

(12)   The standard deviation of the proxy group of fifteen utilities selected on the basis of least relative distance's standard error of the regression is 0.1448 (3.2953 / 22.7596).

Source of Information: Value Line, Inc., September 16, 2004
                         Value Line Investment Survey (Standard Edition)