CALIFORNIA
STATE BOARD
OF EQUALIZATION

Capitalization Rate Study

Property and Special Taxes Department
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Executive Summary

"The income approach to value includes any method of converting an income stream into a present value estimate (i.e., an indicator of current fair market value). The income approach is also called the capitalization approach because capitalization is the process of converting an expected income into an indicator of value.

The methods or techniques used in the income approach may be relatively simple (e.g., income or rent multipliers and direct capitalization), or more complex (e.g., various yield capitalization techniques). All of these methods are referred to as capitalization techniques because they convert an expected future income stream into a present value estimate.

The income approach requires careful application because small variations in its key variables (capitalization rate, duration of income stream, estimated income and expenses, etc.) will be mathematically leveraged into a wide range of estimated value. This is particularly true for the capitalization rate variable. The accuracy of the income approach is no greater than the validity of the assumptions used to estimate the key variables. The mathematical techniques used in the approach, while sometimes complicated, are merely tools for converting these assumptions into an estimate of current market value."[1]

I. Authority for Capitalization Rate Study

Property Tax Rule 8 (g) (2) provides the authority for the method in which the capitalization rates were developed in this study. The rule states "the capitalization rate may be developed…

> By deriving a weighted average of the capitalization rates for debt and for equity capital appropriate to the California money markets (the band-of-investment method) and adding increments for expenses that are excluded from outgo because they are based on the value that is being sought or the income that is being capitalized. The appraiser shall weight the rates for debt and equity capital by the respective amounts of such capital he deems most likely to be employed by prospective purchasers."

II. Band of Investment Approach

In its simplest form, the band of investment method assumes that a purchaser would pay cash (or equity) for a portion of the property and would borrow the balance of the purchase price. For example:

Debt	30%	x	Cost of Debt	7%	=	2.1%
Equity	70%	x	Cost of Equity	12%	=	8.4%
Weighted Average Cost of Capital						10.5%

[1] Assessors' Handbook 501, Basic Appraisal, Revised January 2002

Executive Summary

This booklet contains a study for each of the eight major state assessee industry groups[2] in California. Industry data was compiled by groups with similar Value Line financial ratings.

Generally accepted appraisal procedures were used to estimate the cost of capital for debt and equity. The long term debt cost is the cost for a particular risk class of debt on the lien date. The equity rate reflects the rate of return or compensation that will satisfy the risk that a prospective purchaser would assume by investing in the property.

The rates derived in this study are basic capitalization rates and represent the return on investment only. Any increments required to be added by Property Tax rule 8(g)(2), such as income or ad valorem tax components are in addition to the rates listed.

A. *Capital Structure - Prospective Purchaser vs. Company Specific*

State assessees often ask why the Board does not use the current capital structure of individual companies in the band-of-investment method. As explained in Rule 8 (g)(2), the appraiser shall weight the rates of debt and equity capital by the respective amounts of such capital deemed most likely to be employed by a prospective purchaser.

Therefore, the capital structure contemplated is a representative or typical structure of an industry group of companies with a similar bond rating, not that of the present owner. The objective of doing so is to strike an optimum capital structure from the perspective of a potential investor.

B. *Company Specific Debt Rates*

In many cases the debt component of the capital structure for a prospective purchaser and the individual company being assessed may be similar. In cases where, in the judgement of staff, the debt ratings of the individual companies being assessed and the debt ratings of prospective purchasers are similar, the company-specific bond rating has been used to develop the appropriate debt component of the recommended capitalization rate.

C. *Impact of Holding Companies on Determination of Capital Structure*

Many of the larger state assessees are subsidiaries of their holding company. Stock purchases related to a subsidiary must be made through the parent holding company. Since there is no direct market data for state assesses that are subsidiaries of a holding company, staff must rely, in great part, upon market data related to the holding company.

[2] Gas, Electric & Water; Natural Gas Transmission; Local Exchange; Electric Generation; Interexchange; Wireless; Pipelines; Railroads

Executive Summary

III. Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) is a widely accepted theory used to estimate the cost of equity capital. In the application the CAPM, the most sensitive component affecting the outcome is the estimate of the beta[3] statistic. The choice of different time frames and frequencies of measurement in the calculation of the beta can produce significantly different results. Another factor in the use of beta is the choice of whether to use an unadjusted beta or a beta adjusted to reflect the fact that betas tend to revert to the mean over time. In this study, betas were obtained from three separate sources: one adjusted (Value Line) and two unadjusted. Generally the betas from the three sources are averaged to establish the beta used to estimate the cost of equity capital for a specific industry. In general, the average beta for highly regulated industries such as gas or electric transmission and distribution understates the risk inherent in those securities. For companies in highly regulated environments, the Value Line adjusted beta was chosen as a better estimate of the relative risk in the calculation of the required equity return.

IV. Flotation Costs

When new issues of both debt and equity capital are sold to investors, the issuing company incurs transaction costs such as underwriting fees, legal expenses, and prospectus preparation costs. These costs of issuing securities are known as flotation costs. Flotation costs effectively reduce the net proceeds that a firm will receive from issuing securities. This is much like closing costs on a home mortgage. The cost of capital is adjusted upward to reflect the flotation costs incurred to issue the securities. Since the flotation costs are reflected in the weighted average cost of capital, the flotation costs should not be allowed as expenses in projecting cash flows to be capitalized. Each basic capitalization rate in this study has been adjusted to reflect flotation costs.

V. Size Adjustment

Investors typically consider small capitalization stocks as riskier investments than large capitalization stocks. It follows that investors require additional return to take on the risk of an investment in a small capitalization stock. According to Ibbotson & Associates[4], the additional risk is not reflected in the calculation of beta. Where the Capital Asset Pricing Model was relied upon in assigning the cost of capital to companies whose size is ranked in the lower deciles of the New York Stock Exchange, the size premium adjustment as reported by Ibbotson Associates in the 2004 Valuation Edition Yearbook was considered.

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[3] The covariance of the returns of a security regressed against the returns of the overall market - a measurement of relative volatility

[4] SBBI: Valuation Edition 2004 Yearbook

Executive Summary

VI. Utilization of Other Studies and Data

Staff appraisers considered data and capitalization rate studies submitted by assessees and interested parties and, where appropriate utilized them in the development of the staff derived rates.

The capitalization rates published in this study are intended to be applied to the unitary operations of the companies subject to assessment by the California State Board of Equalization.

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Gas, Electric and Water Companies

SBE No.	Company Name	Ratings: Financial	Ratings: Preferred Stock	Ratings: Bond	Capital Structure: Common Equity	Capital Structure: Preferred Stock	Capital Structure: Debt	Rates of Return: Common Equity	Rates of Return: Preferred Stock	Rates of Return: Debt	Basic Cap Rate
Gas and Electric Companies											
141	**San Diego Gas & Electric Co.**	B++	baa1	Baa1	48%	2%	50%	10.71%	7.26%	6.64%	**8.61%**
184	**Avista Corporation**	B	ba3	Baa3	48%	2%	50%	10.71%	8.03%	6.89%	**8.75%**
148	**Southern California Edison Co.**	C++	ba2	Baa2	48%	2%	50%	12.13%	8.03%	6.77%	**9.36%**
146	**Sierra Pacific Power Co.**	C+	caa1	B2	48%	2%	50%	12.13%	8.64%	7.52%	**9.75%**
135	**Pacific Gas & Electric Co.**	C	ba2	Ba3	48%	2%	50%	12.13%	8.03%	7.14%	**9.55%**
106	**PacifiCorp**	Not Rated	baa3	Baa2	48%	2%	50%	12.13%	7.57%	6.77%	**9.36%**
103	**Anza Electric Cooperative, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
160	**Valley Electric Association, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
173	**Surprise Valley Electrification Corp.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
176	**Plumas-Sierra Rural Electric Corp.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
185	**Mountain Utilities**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
191	**Arizona Public Service Company**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
193	**Southwest Transmission Coop., Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
Natural Gas Distribution Companies											
149	**Southern California Gas, Co.**	B++	baa1	A1	48%	2%	50%	10.71%	7.26%	6.64%	**8.61%**
152	**Southwest Gas Corporation**	B		Baa2	50%		50%	10.71%		6.77%	**8.74%**
192	**Alpine Natural Gas Operating Co. No. One LLC**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
194	**West Coast Gas Company, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
195	**Wild Goose Storage, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
198	**Lodi Gas Storage, LLC**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
Water Companies											
101	**Southern California Water Co.**	B+		A2	60%		40%	11.15%		6.39%	**9.25%**

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Natural Gas Transmission Companies

		Ratings		Capital Structure		Rates of Return		**Basic**
		Common		Common		Common		**Cap**
SBE No.	**Company Name**	Equity	Bond	Equity	Debt	Equity	Debt	**Rate**
180	**North Baja Pipeline, LLC**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
187	**Mojave Pipeline Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
188	**Kern River Gas Transmission Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
189	**Standard Pacific Gas Line, Inc.**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
190	**Tuscarora Gas Transmission Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
196	**Questar Southern Trails Pipeline Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
197	**El Paso Natural Gas Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Local Exchange Companies

		Ratings		Capital Structure		Rates of Return		**Basic**
				Common		Common		**Cap**
SBE No.	**Company Name**	Financial	Bond	Equity	Debt	Equity	Debt	**Rate**
279	**SBC California**	A+	A1	80%	20%	11.26%	6.36%	**10.28%**
201	**Verizon California Inc.**	A+	A1	80%	20%	11.26%	6.36%	**10.28%**
294	**SureWest Telephone**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
284	**Citizens Telecommunications Company of California**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
270	**Citizens Telecommunications Company of The Golden State**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
311	**Citizens Telecommunications Company of Tuolumne**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
	Other Local Exchange Companies	Not Rated	Not Rated	70%	30%	13.87%	7.76%	**12.04%**

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Electric Generation Facilities

	Ratings		Capital Structure		Rates of Return		**Basic**
			Common		Common		**Cap**
Company Name	Financial	Bond	Equity	Debt	Equity	Debt	**Rate**
Recently Constructed Facilities [1]	C+	NR	60%	40%	13.90%	8.41%	**11.70%**
Composite Facilities [2]	C+	NR	60%	40%	14.96%	8.41%	**12.34%**
Older Facilities [3]	C+	NR	60%	40%	15.67%	8.79%	**12.91%**

[1] Recently Constructed Facilities **-** Facilities constructed after September 1996 incorporating modern electric generation technologies at the time they were built.

[2] Composite Facilities **-** Facilities that were sold off by vertically integrated electric utilities and for which replacements of some obsolete generation units with modern electric generation technologies have been made.

[3] Older Facilities **-** Facilities that were sold off by vertically integrated electric utilities for which no replacements, other than for routine maintenance, have been made.

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Interexchange Telephone Companies

SBE No.	Company Name	Ratings: Common Equity	Ratings: Bond	Capital Structure: Common Equity	Capital Structure: Long Term Debt	Rates of Return: Common Equity	Rates of Return: Long Term Debt	Basic Cap Rate
2310	**AT&T Communications, Inc.**	B+	Baa2	65%	35%	12.83%	7.02%	**10.79%**
2014	**Sprint Communications Co., L.P.**	B	Baa3	65%	35%	12.83%	7.14%	**10.84%**
7677	**Talk America, Inc.**	B	NR	65%	35%	12.83%	8.28%	**11.24%**
7522	**Time Warner Telecom of California, L.P.**	C+	Caa1	55%	45%	14.92%	7.65%	**11.65%**
2463	**Qwest Communications Corporation**	C+	Caa1	55%	45%	14.92%	7.65%	**11.65%**
7761	**Level 3 Communications, Inc.**	C	Caa2	55%	45%	14.92%	7.78%	**11.71%**
7686	**Primus Telecommunications, Inc.**	C+	Caa3	55%	45%	14.92%	7.91%	**11.77%**
2043	**Pac West Telecomm, Inc.**	C	Ca	55%	45%	14.92%	8.28%	**11.93%**
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	18.06%	8.28%	**13.66%**
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	21.20%	9.05%	**15.73%**

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Wireless Companies

SBE No.	Company Name	Rating	Capital Structure: Common Equity	Capital Structure: Debt	Rates of Return: Common Equity	Rates of Return: Debt	Basic Cap Rate
2512	**Verizon Wireless (VAW) LLC**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2513	**Sacramento Valley Limited Partnership**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2532	**Los Angeles SMSA, Ltd. Partnership**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2559	**GTE Mobilnet of California, Ltd. Partnership**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2606	**AT&T Wireless Services of California, LLC**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2720	**Sprint Telephony PCS, L.P.**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2722	**Sprint Spectrum L.P.**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2737	**Nextel of California, Inc.**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2748	**Pacific Bell Wireless, LLC**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2755	**Southwestern Bell Mobile Systems, LLC**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2756	**Cingular Wireless, LLC**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2552	**Fresno MSA Limited Partnership**	NR-3	60%	40%	16.75%	7.53%	**13.06%**
2627	**GTE Mobilnet of Santa Barbara L.P.**	NR-3	60%	40%	16.75%	7.53%	**13.06%**
	Other Wireless Companies	NR-4	60%	40%	19.25%	7.78%	**14.66%**
	Wireless Reseller Companies	NR-5	60%	40%	22.25%	8.80%	**16.87%**

NR-1: Companies representing large wireless markets in California
NR-2: Companies representing large to midsize wireless markets in California
NR-3: Companies representing midsize wireless markets in California
NR-4: Other wireless carriers (including Radio Telephones)
NR-5: All wireless reseller companies

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study
Pipeline Companies

		Ratings		Capital Structure		Rates of Return		**Basic**
		Common		Common				**Cap**
SBE No.	**Company Name**	Equity	Bond	Equity	Debt	Equity	Debt	**Rate**
461	**SFPP, L.P.**	B+	Baa	70%	30%	13.09%	6.73%	11.18%
402	**CALNEV Pipe Line Company**	NR-1	NR-b	70%	30%	13.09%	6.73%	11.18%
465	**All American Pipeline, L.P.**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
479	**Chevron Pipeline Company**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
468	**Equilon California Pipeline Company LLC**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
486	**Pacific Pipeline System, LLP**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
480	**Unocap**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
	Other Pipeline Companies	NR-3	NR-c	70%	30%	14.66%	7.75%	12.59%

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Railroads

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Common Equity	Bond	Common Equity	Debt	Common Equity	Debt	
804	**Burlington Northern & Santa Fe Railroad Co.**	B+	Baa2	66%	34%	13.25%	6.73%	**11.03%**
843	**Union Pacific Railroad Company**	B+	Baa2	66%	34%	13.25%	6.73%	**11.03%**
802	**Central Oregon & Pacific Railroad**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
810	**California Northern Railroad**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
813	**Pacific Harbor Lines**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
850	**Modesto & Empire Traction Company**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
865	**San Diego & Imperial Valley Railroad Co. Inc.**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
882	**Trona Railway Co.**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
897	**San Joaquin Valley Railroad Company**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
899	**Arizona & California Railroad**	N/R-1	N/R-1	60%	40%	15.34%	8.26%	**12.51%**
	Other Railroad Companies	N/R-2	N/R-2	60%	40%	15.60%	9.28%	**13.07%**

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Gas, Electric and Water Companies

		Ratings			Capital Structure			Rates of Return			**Basic**
			Preferred		Common	Preferred		Common	Preferred		**Cap**
SBE No.	**Company Name**	Financial	Stock	Bond	Equity	Stock	Debt	Equity	Stock	Debt	**Rate**
Gas and Electric Companies											
141	**San Diego Gas & Electric Co.**	B++	baa1	Baa1	48%	2%	50%	10.71%	7.26%	6.64%	**8.61%**
184	**Avista Corporation**	B	ba3	Baa3	48%	2%	50%	10.71%	8.03%	6.89%	**8.75%**
148	**Southern California Edison Co.**	C++	ba2	Baa2	48%	2%	50%	12.13%	8.03%	6.77%	**9.36%**
146	**Sierra Pacific Power Co.**	C+	caa1	B2	48%	2%	50%	12.13%	8.64%	7.52%	**9.75%**
135	**Pacific Gas & Electric Co.**	C	ba2	Ba3	48%	2%	50%	12.13%	8.03%	7.14%	**9.55%**
106	**PacifiCorp**	Not Rated	baa3	Baa2	48%	2%	50%	12.13%	7.57%	6.77%	**9.36%**
103	**Anza Electric Cooperative, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
160	**Valley Electric Association, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
173	**Surprise Valley Electrification Corp.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
176	**Plumas-Sierra Rural Electric Corp.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
185	**Mountain Utilities**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
191	**Arizona Public Service Company**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
193	**Southwest Transmission Coop., Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.00%	**10.94%**
Natural Gas Distribution Companies											
149	**Southern California Gas, Co.**	B++	baa1	A1	48%	2%	50%	10.71%	7.26%	6.64%	**8.61%**
152	**Southwest Gas Corporation**	B		Baa2	50%		50%	10.71%		6.77%	**8.74%**
192	**Alpine Natural Gas Operating Co. No. O**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
194	**West Coast Gas Company, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
195	**Wild Goose Storage, Inc.**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
198	**Lodi Gas Storage, LLC**	Not Rated		Not Rated	50%		50%	13.87%		8.25%	**11.06%**
Water Companies											
101	**Southern California Water Co.**	B+		A2	60%		40%	11.15%		6.39%	**9.25%**

Industry Notes

For 2004, capitalization rates have been developed separately for gas and electric companies, gas distribution companies, and water companies.

GAS AND ELECTRIC COMPANIES

- Gas and electric companies have undergone major changes brought about by deregulation in 1998, and the re-imposition of rate-return regulation on utility-retained generation assets in response to the energy crisis between the late 2000 and early 2001. As of January 1, 2004, the re-regulation of the electric generation operations of PG&E and SCE essentially returned all major electric public utilities in California to regulation under the California Public Utility Commission. The objective of the 2004 capitalization rate study is to develop capitalization rates that reflect regulated gas and electric operations.

- The sample companies from which the capitalization rates were derived were engaged primarily in regulated gas and electric operations. In this year's capitalization rate study, we have narrowed the sample pool of companies to those that reflect characteristics comparable to the companies operating in California.

- Staff used the Capital Asset Pricing Model in the development of equity rates. The Discounted Cash Flow (DCF) model was considered but not relied upon this year because of negative dividend growth projected by the financial reporting companies.

GAS DISTRIBUTION COMPANIES

- There were sufficient data on comparable gas distribution companies to enable staff to develop capitalization rates using the DCF model. Staff relied solely on the DCF because regulation enables gas distribution companies to generate predictable cash flows (the premise of the DCF model).

WATER COMPANIES

- Staff relied solely on the DCF because regulation enables water companies to generate predictable cash flows (the premise of the DCF model).

2004 Capitalization Rate Study
Gas and Electric Companies
Flotation Cost Adjustment

Equity					Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate		Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B++	10.23%	4.50%	10.71%	[1]	baa1	7.14%	1.70%	7.26%	Aa3	6.22%	1.70%	6.33%
B	10.23%	4.50%	10.71%		baa3	7.44%	1.70%	7.57%	A3	6.40%	1.70%	6.51%
C++	11.58%	4.50%	12.13%	[1]	ba3	7.89%	1.70%	8.03%	Baa1	6.53%	1.70%	6.64%
C	11.58%	4.50%	12.13%	[1]	b3	8.34%	1.70%	8.48%	Baa2	6.65%	1.70%	6.77%
NR	13.25%	4.50%	13.87%		caa1	8.49%	1.70%	8.64%	Baa3	6.77%	1.70%	6.89%
					caa3	8.64%	1.70%	8.79%	Ba1	6.90%	1.70%	7.02%
									Ba2	7.02%	1.70%	7.14%
									B2	7.39%	1.70%	7.52%
									B3	7.51%	1.70%	7.64%
									NR	7.86%	1.70%	8.00%

[1] In a CPUC decision on May 8, 2003, D 03 05 037, the rate of return on equity for PG&E was set at 11.22%, for SCE at 11.60%, for Sierra at 10.90% , and SDG&E at 10.90%.

Formula : Cost of Capital Adjusted for Flotation Costs

$$\text{Adjusted Rate} = \frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

2004 Capitalization Rate Study
Gas and Electric Companies

Summary of Rates of Return

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return (1)	Moody's P/S Yields	Moody Rating	Rate of Return (2)	Moody's Bond Yields	Moody Rating	Rate of Return (2)
			aa1	6.55%	Aaa=NA	Aaa2	5.96%
B++	10.23%	aa=NA	aa2	6.62%		Aaa3	6.04%
B	10.23%		aa3	6.69%		Aa1	6.11%
C++	11.58%		a1	6.77%	Aa=6.19%	Aa2	6.19%
C	11.58%	a=6.84%	a2	6.84%		Aa3	6.22%
NR	13.25% (3)		a3	6.99%		A1	6.25%
	(4)		baa1	7.14%	A=6.28%	A2	6.28%
		baa=7.29%	baa2	7.29%		A3	6.40%
			baa3	7.44%		Baa1	6.53%
			ba1	7.59%	Baa=6.65%	Baa2	6.65%
			ba2	7.74%		Baa3	6.77%
			ba3	7.89%		Ba1	6.90%
			b1	8.04%		Ba2	7.02%
			b2	8.19%		Ba3	7.14%
			b3	8.34%		B1	7.27%
			caa1	8.49%		B2	7.39%
			caa3	8.64%		B3	7.51%
						NR	7.86%

Notes:

(1) The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources.

(2) Rates of Return on Preferred Stocks and Bonds were based on Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" as of the December 2003 report. However, because Moody assigns a yield to the groups Aaa, Aa, A and Baa for bonds; and aa, a, and baa for preferred stocks, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

(3) For companies whose common equity are not rated (NR), staff judgment is used in assigning the rates of return because the circumstances or reasons for not rating the common equity are different for each company.

(4) Common Equity Rate of Return based on the CAPM-Ex Ante Return on Equity.

2004 Capitalization Rate Study
Gas and Electric Companies
Capital Asset Pricing Model - Ex Ante

Component	Value Line Ratings A++, A+	B++, B+, B	C++, C+,C
Expected Future Return, S&P 500[3]	11.92%	11.92%	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%	5.16%	5.16%
Risk Premium	6.76%	6.76%	6.76%
Beta [2]	0.70	0.75	0.95
Adjusted Risk Premium	4.73%	5.07%	6.42%
Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%	5.16%	5.16%
Projected Return on Common Equity	**9.89%**	**10.23%**	**11.58%**

[1] Wall Street Journal 12/31/03 data

[2] The estimated betas are based on the gas and electric beta analysis. Staff is placing greater reliance on Value Line's median beta.

[3] Dividend Yield for S&P 500 @ 12/31/2003	1.63%
5 Year projected growth per First Call	10.29%
Expected future return, S&P 500	11.92%

2004 Capitalization Rate Study
Gas and Electric Companies
Capital Asset Pricing Model - Ex Post

Component	Value Line Ratings		
	A++, A+	B++, B+, B	C++, C+
Common Stock Return (1926 - 2003) [1]	12.40%	12.40%	12.40%
Less: Income-Long Term Government Bonds (1926-2003) [1]	5.20%	5.20%	5.20%
Risk Premium	7.20%	7.20%	7.20%
Beta [2]	0.70	0.75	0.95
Adjusted Risk Premium	5.04%	5.40%	6.84%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%	5.16%	5.16%
Projected Return on Common Equity	**10.20%**	**10.56%**	**12.00%**

[1] Ibbotson Associates Study
[2] The estimated betas are based on the gas and electric beta analysis. Staff is placing greater reliance on Value Line's median beta.
[3] Wall Street Journal 12/31/03 data

2004 Capitalization Rate Study
Gas and Electric Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A++	Consolidated Edison	43.01	3.00	2.85	2.24	2.26	5.25%	1.00%	2.46%	6.98%	6.25%	7.71%
A+	Ameren	46.00	3.00	2.95	2.54	2.54	5.52%	0.50%	2.38%	6.52%	6.02%	7.90%
A+	FPL Group Inc	65.42	4.90	4.02	2.32	2.40	3.67%	3.50%	4.82%	7.49%	7.17%	8.49%
A+	MDU Resources	23.81	1.60	1.60	0.66	0.70	2.94%	5.50%	7.43%	6.72%	8.44%	10.37%
A	CH Energy Group	46.90	2.65	2.12	2.16	2.16	4.61%	5.00%	2.10%	5.65%	9.61%	6.70%
A	Cinergy Corp	38.81	2.75	2.55	1.84	1.88	4.84%	1.50%	3.53%	7.09%	6.34%	8.38%
A	Constellation Energy	39.16	2.95	2.70	1.04	1.12	2.86%	4.50%	7.83%	7.53%	7.36%	10.69%
A	Exelon Corp	66.36	5.40	5.00	1.92	2.06	3.10%	3.50%	5.45%	8.14%	6.60%	8.55%
A	GT Plains Energy	31.82	2.15	2.20	1.66	1.66	5.22%	5.00%	4.17%	6.76%	10.22%	9.38%
A	NStar	48.50	3.40	3.38	2.13	2.17	4.47%	2.00%	4.33%	7.01%	6.47%	8.81%
A	Pinnacle West Cap	40.02	3.00	2.55	1.73	1.83	4.57%	5.50%	4.89%	7.50%	10.07%	9.46%
A	Scana Corp	34.25	2.45	2.38	1.30	1.38	4.03%	5.00%	4.48%	7.15%	9.03%	8.51%
A	Southern Co	30.25	1.90	1.85	1.36	1.39	4.60%	3.00%	4.85%	6.28%	7.60%	9.44%
A	Vectren Corp	24.65	1.70	1.60	1.11	1.15	4.67%	3.50%	6.78%	6.90%	8.17%	11.44%
	Mean						4.31%	3.50%	4.68%	6.98%	7.81%	8.99%
	Median						4.58%	3.50%	4.65%	6.99%	7.48%	8.68%
	Weighted Average										7.22%	8.87%

Source: Columns a,b,d,e,f,g and i were extracted from Value Line.
Source: Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and Thomson FN.com.
Source: Column c was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Gas and Electric Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	Energy East	22.40	1.70	1.60	1.00	1.04	4.64%	4.00%	3.48%	7.59%	8.64%	8.12%
B++	Sempra Energy	30.06	2.65	3.20	1.00	1.00	3.33%	0.00%	5.09%	8.82%	3.33%	8.41%
B++	Wisconsin Energy	33.45	2.30	2.25	0.80	0.80	2.39%	0.00%	6.88%	6.88%	2.39%	9.27%
B+	Cleco Corporation	17.98	1.40	1.35	0.90	0.90	5.30%	0.50%	1.28%	7.79%	5.80%	6.58%
B+	Duke Energy	20.45	1.10	0.10	1.10	0.60	5.30%	-9.50%	0.18%	5.38%	-4.20%	5.48%
B+	Northeast Utilities	20.17	1.30	1.25	0.58	0.62	3.07%	9.00%	8.73%	6.45%	12.07%	11.81%
B+	Puget Energy, Inc.	23.77	1.75	1.35	1.00	1.00	4.21%	-6.00%	5.00%	7.36%	-1.79%	9.21%
B	Avista Corporation	18.12	1.10	1.00	0.49	0.51	2.81%	5.00%	4.11%	6.07%	7.81%	6.92%
B	DPL Inc	20.88	1.30	0.95	0.94	0.96	4.60%	1.50%	3.44%	6.23%	6.10%	8.04%
B	Duquesne Light	18.34	1.20	1.15	1.00	1.00	5.52%	-7.00%	5.50%	6.62%	-1.48%	11.02%
	Mean						4.12%	-0.25%	4.37%	6.92%	3.87%	8.49%
	Median						4.51%	0.25%	4.56%	6.75%	4.56%	8.27%
	Weighted Average										0.79%	7.43%

Note: In a CPUC decision on May 8, 2003, D 03 05 037, the rate of return on equity for PG&E was set at 11.22%, for SCE at 11.60%, for Sierra at 10.90&, and SDG&E at 10.90%.
Staff places no reliance on the equity rates derived for this pool because the companies do not reflect the impact of CPUC decisions on January 2004 on California utilities.

Source: Columns a,b,d,e,f,g and i were extracted from Value Line.
Source: Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and Thomson FN.com.
Source: Column c was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Gas and Electric Companies

Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
C++	CMS Energy Corp	8.52	0.70	0.45	0.00	0.00	0.00%	-18.00%	4.07%	8.22%	-18.00%	4.07%
C+	Edison International	21.93	2.00	1.90	Nil	0.20	0.91%	19.00%	2.50%	9.12%	19.91%	3.41%
C+	Sierra Pacific	7.34	0.30	1.30	Nil	0.00	0.00%	-100.00%	2.50%	4.09%	-100.00%	2.50%
C	PG&E Corporation	27.77	2.36	3.02	0.00	0.00	0.00%	0.00%	3.90%	8.50%	0.00%	3.90%
	Mean						0.23%	-24.75%	3.24%	7.48%	-24.52%	3.47%
	Median						0.00%	-9.00%	3.20%	8.36%	-9.00%	3.66%
	Weighted Average										-9.18%	3.74%

Note: In a CPUC decision on May 8, 2003, D 03 05 037, the rate of return on equity for PG&E was set at 11.22%, for SCE at 11.60%, for Sierra at 10.90&, and SDG&E at 10.90%.
Staff places no reliance on the equity rates derived for this pool because the companies do not reflect the impact of CPUC decisions on January 2004 on California utilities.

Source: Columns a,b,d,e,f,g and i were extracted from Value Line.
Source: Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and Thomson FN.com.
Source: Column c was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Gas and Electric Companies

Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A++	Consolidated Edison	1.00%	3.20%	3.18%	2.46%
A+	Ameren	1.00%	3.00%	3.13%	2.38%
A+	FPL Group Inc	5.00%	5.00%	4.47%	4.82%
A+	MDU Resources	7.50%	6.80%	8.00%	7.43%
A	CH Energy Group	1.50%	NA	2.69%	2.10%
A	Cinergy Corp	3.00%	3.70%	3.90%	3.53%
A	Constellation Energy	10.00%	6.50%	6.99%	7.83%
A	Exelon Corp	6.00%	5.00%	5.35%	5.45%
A	GT Plains Energy	4.50%	4.00%	4.00%	4.17%
A	NStar	3.50%	5.00%	4.50%	4.33%
A	Pinnacle West Cap	5.50%	5.00%	4.17%	4.89%
A	Scana Corp	5.00%	4.30%	4.14%	4.48%
A	Southern Co	6.00%	4.60%	3.94%	4.85%
A	Vectren Corp	7.50%	6.00%	6.83%	6.78%
B++	Energy East	1.00%	5.00%	4.43%	3.48%
B++	PNM Resources	-4.50%	5.00%	5.00%	1.83%
B++	Sempra Energy	3.50%	5.70%	6.06%	5.09%
B++	Wisconsin Energy	8.00%	6.20%	6.43%	6.88%
B+	Cleco Corporation	Nil	NA	1.28%	1.28%
B+	Duke Energy	-7.50%	4.30%	3.73%	0.18%
B+	Empire District	6.00%	10.00%	1.50%	5.83%
B+	Northeast Utilities	18.00%	4.00%	4.20%	8.73%
B+	Puget Energy, Inc.	4.50%	5.00%	5.50%	5.00%
B	Avista Corporation	3.50%	4.50%	4.33%	4.11%
B	DPL Inc	1.50%	4.50%	4.33%	3.44%
B	Duquesne Light	7.50%	5.00%	4.00%	5.50%
C++	CMS Energy Corp	NMF	4.00%	4.13%	4.07%
C+	Edison International	0.50%	3.50%	3.50%	2.50%
C+	Sierra Pacific	NMF	3.00%	2.00%	2.50%
C	PG&E Corp.	0.00	6.00%	5.71%	3.90%
	Mean	4.04%	4.92%	4.38%	4.33%
	Median	4.50%	5.00%	4.19%	4.25%

2004 Capitalization Rate Study
Gas and Electric Companies

Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Mkt Value Equity ($millions)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Equity ($millions)	Total Capital ($millions)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity ratio
A++	Consolidated Edison	225,326,323	43.01	9,691.29	6,404.00	212.60	9,691.29	16,307.89	39%	1%	59%	0.65
A+	Ameren	162,400,592	46.00	7,470.43	4,046.00	234.00	7,470.43	11,750.43	34%	2%	64%	0.53
A+	FPL Group Inc	183,947,177	65.42	12,033.82	8,331.00	226.00	12,033.82	20,590.82	40%	1%	58%	0.68
A+	MDU Resources	113,215,405	23.81	2,695.66	938.60	16.20	2,695.66	3,650.46	26%	0%	74%	0.35
A	CH Energy Group	15,762,000	46.90	739.24	293.90	33.50	739.24	1,066.64	28%	3%	69%	0.38
A	Cinergy Corp	178,070,206	38.81	6,910.90	4,129.90	62.80	6,910.90	11,103.60	37%	1%	62%	0.59
A	Constellation Energy	167,271,886	39.16	6,550.37	5,016.30	190.00	6,550.37	11,756.67	43%	2%	56%	0.74
A	Exelon Corp	327,021,190	66.36	21,701.13	12,571.00	509.00	21,701.13	34,781.13	36%	1%	62%	0.57
A	GT Plains Energy	69,196,322	31.82	2,201.83	1,060.70	39.00	2,201.83	3,301.53	32%	1%	67%	0.47
A	NStar	53,032,546	48.50	2,572.08	2,202.60	43.00	2,572.08	4,817.68	46%	1%	53%	0.84
A	Pinnacle West Cap	91,271,421	40.02	3,652.68	3,133.10	0.00	3,652.68	6,785.78	46%	0%	54%	0.86
A	Scana Corp	110,748,408	34.25	3,793.13	2,852.00	115.00	3,793.13	6,760.13	42%	2%	56%	0.73
A	Southern Co	732,199,800	30.25	22,149.04	9,750.00	2,603.00	22,149.04	34,502.04	28%	8%	64%	0.39
A	Vectren Corp	75,617,313	24.65	1,863.97	1,091.50	0.20	1,863.97	2,955.67	37%	0%	63%	0.59
	Mean								37%	2%	62%	0.60
	Median								37%	1%	62%	
	Weighted Average								36%	3%	61%	

Source: Columns a,b,c,f and g were extracted from Value Line.
Source: Column d was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Gas and Electric Companies

Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Mkt Value Equity ($millions)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Equity ($millions)	Total Capital ($millions)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity ratio
B++	Energy East	146,044,151	22.40	3,271.39	3,990.10	114.80	3,271.39	7,376.29	54%	2%	44%	1.18
B++	Sempra Energy	208,714,412	30.06	6,273.96	4,414.00	203.00	6,273.96	10,890.96	41%	2%	58%	0.68
B++	Wisconsin Energy	117,664,930	33.45	3,935.89	3,422.20	30.40	3,935.89	7,388.49	46%	0%	53%	0.86
B+	Cleco Corporation	47,261,027	17.98	849.75	903.50	25.40	849.75	1,778.65	51%	1%	48%	1.03
B+	Duke Energy	907,533,097	20.45	18,559.05	22,487.00	134.00	18,559.05	41,180.05	55%	0%	45%	1.20
B+	Northeast Utilities	127,369,219	20.17	2,569.04	4,278.00	116.20	2,569.04	6,963.24	61%	2%	37%	1.59
B+	Puget Energy, Inc.	94,031,408	23.77	2,235.13	2,287.30	95.60	2,235.13	4,618.03	50%	2%	48%	0.98
B	Avista Corporation	48,277,032	18.12	874.78	979.90	31.50	874.78	1,886.18	52%	2%	46%	1.08
B	DPL Inc	126,501,404	20.88	2,641.35	1,946.80	22.90	2,641.35	4,611.05	42%	0%	57%	0.73
B	Duquesne Light	75,303,230	18.34	1,381.06	1,126.50	70.40	1,381.06	2,577.96	44%	3%	54%	0.78
	Mean								50%	1%	49%	1.01
	Median								50%	2%	48%	
	Weighted Average								51%	1%	48%	

Source: Columns a,b,c,f and g were extracted from Value Line.
Source: Column d was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Gas and Electric Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Mkt Value Equity ($millions)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Equity ($millions)	Total Capital ($millions)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity ratio
C++	CMS Energy Corp	161,130,925	8.52	1,372.84	7,070.00	440.00	1,372.84	8,882.84	80%	5%	15%	3.90
C+	Edison International	325,811,206	21.93	7,145.04	12,358.00	1,368.00	7,145.04	20,871.04	59%	7%	34%	1.45
C+	Sierra Pacific	117,175,700	7.34	860.07	3,080.80	50.00	860.07	3,990.87	77%	1%	22%	3.39
C	PG&E Corporation	412,035,998	27.77	11,442.24	4,034.00	480.00	11,442.24	15,956.24	25%	3%	72%	0.34
	Mean								60%	4%	36%	2.27
	Median								68%	4%	28%	
	Weighted Average								53%	5%	42%	

Note Staff is not placing any reliance on the LT Debt % due to a small number of companies in this rating.

Source: Columns a,b,c,f and g were extracted from Value Line.
Source: Column d was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Gas and Electric Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
A++	Consolidated Edison	0.60	-0.14	-0.14	0.11	0.65	0.43	0.06
A+	Ameren	0.70	0.06		0.38	0.53	0.53	0.04
A+	FPL Group Inc	0.65	0.20	0.18	0.34	0.68	0.46	0.08
A+	MDU Resources	0.75	0.28		0.52	0.35	0.62	0.01
A	CH Energy Group	0.75	0.17		0.46	0.38	0.61	0.00
A	Cinergy Corp	0.80	0.03	-0.02	0.27	0.59	0.59	0.04
A	Constellation Energy	0.85	0.37	0.34	0.52	0.74	0.59	0.05
A	Exelon Corp	0.70	0.08	0.08	0.29	0.57	0.52	0.12
A	GT Plains Energy	0.75	0.50	0.50	0.58	0.47	0.58	0.01
A	NStar	0.70	0.24		0.47	0.84	0.47	0.02
A	Pinnacle West Cap	0.70	0.25	0.21	0.39	0.86	0.46	0.03
A	Scana Corp	0.65	0.15	0.12	0.31	0.73	0.45	0.03
A	Southern Co	0.60	-0.24	-0.45	-0.03	0.39	0.49	0.08
A	Vectren Corp	0.75	0.34		0.55	0.59	0.56	0.01
	Mean	0.71	NMF	0.09	0.37	0.60	0.53	0.04
	Median	0.70	NMF	0.12	0.38		0.53	
	Weighted				0.26		0.51	

Relevered Beta based on 48% Debt Capital Structure and mean Unlevered Beta 0.82 [2]

Relevered Beta based on 48% Debt Capital Structure and a weighted average Unlevered Beta 0.79 [2]

Formulas:
1 Unlevered Beta = Value Line Beta/[1+(1-t)(D/E)]
2 Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]
Where: D/E is the debt to equity ratio
t is the tax rate (assumed to be 40%)

Source: Columns a,b,c were extracted from Value Line.
Source: Column d was extracted from Zacks.com.
Source: Column e was extracted from Standard and Poor's Stock Reports.
Source: Column g was extracted from capital structure worksheet included in the 2004 Capitalization Rate Study.

2004 Capitalization Rate Study
Gas and Electric Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
B++	Energy East	0.75	0.28	0.32	0.45	1.18	0.44	0.11
B++	Sempra Energy	0.80	0.16	0.13	0.36	0.68	0.57	0.09
B++	Wisconsin Energy	0.65	-0.09	-0.08	0.16	0.86	0.43	0.08
B+	Cleco Corporation	1.00	0.57	0.55	0.71	1.03	0.62	0.02
B+	Duke Energy	1.00	0.51	0.44	0.65	1.20	0.58	0.62
B+	Northeast Utilities	0.70	0.41	0.39	0.50	1.59	0.36	0.14
B+	Puget Energy, Inc.	0.65	0.08	0.07	0.27	0.98	0.41	0.06
B	Avista Corporation	0.75	0.21		0.48	1.08	0.45	0.03
B	DPL Inc	0.85	0.43	0.45	0.58	0.73	0.59	0.04
B	Duquesne Light	0.70	0.25	0.28	0.41	0.78	0.48	0.02
	Mean	0.79	0.28	0.28	0.46	1.01	0.49	0.12
	Median	0.75	0.27	0.32	0.48		0.47	
	Weighted				0.51		0.52	

Relevered Beta based on 50% Debt Capital Structure and mean Unlevered Beta 0.79 [2]

Relevered Beta based on 50% Debt Capital Structure and a weighted average Unlevered Beta 0.84 [2]

Formulas:
1 Unlevered Beta = Value Line Beta/[1+(1-t)(D/E)]
2 Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]
Where: D/E is the debt to equity ratio
t is the tax rate (assumed to be 40%)

Source: Columns a,b,c were extracted from Value Line.
Source: Column d was extracted from Zacks.com.
Source: Column e was extracted from Standard and Poor's Stock Reports.
Source: Column g was extracted from capital structure worksheet included in the 2004 Capitalization Rate Study.

2004 Capitalization Rate Study
Gas and Electric Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
C++	CMS Energy Corp	1.20	1.45	1.40	1.35	3.90	0.36	0.70
C+	Edison International	0.90	0.12	0.11	0.38	1.45	0.48	0.61
C+	Sierra Pacific	1.00	1.05		1.03	3.39	0.33	0.27
C	PG&E Corporation	0.90		0.32	0.61	0.34	0.75	0.11
	Mean	1.00	0.87	0.61	0.84	2.27	0.48	0.42
	Median	0.95	1.05	0.32	0.82		0.42	
	Weighted				0.68		0.53	

Relevered Beta based on 50% Debt Capital Structure and mean Unlevered Beta 0.77 [2]

Relevered Beta based on 50% Debt Capital Structure and a weighted average Unlevered Beta 0.85 [2]

Formulas:
1 Unlevered Beta = Value Line Beta/[1+(1-t)(D/E)]
2 Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]
Where: D/E is the debt to equity ratio
t is the tax rate (assumed to be 40%)

Source: Columns a,b,c were extracted from Value Line.
Source: Column d was extracted from Zacks.com.
Source: Column e was extracted from Standard and Poor's Stock Reports.
Source: Column g was extracted from capital structure worksheet included in the 2004 Capitalization Rate Study.

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Flotation Cost Adjustment

Equity				Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A, B++	9.46%	4.50%	9.90%	baa1	7.14%	1.70%	7.26%	A1	6.33%	1.70%	6.44%
B+, B	9.79%	4.50%	10.25%	baa3	7.44%	1.70%	7.57%	Baa2	6.65%	1.70%	6.77%
NR	13.25%	4.50%	13.87%					NR	8.11%	1.70%	8.25%

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Summary of Rates of Return

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return (1)	Moody's P/S Yields	Moody Rating	Rate of Return (2)	Moody's Bond Yields	Moody Rating	Rate of Return (2)
			aa1	6.55%	Aaa=NA	Aaa2	5.96%
A, B++	9.46%	aa=NA	aa2	6.62%		Aaa3	6.04%
			aa3	6.69%		Aa1	6.11%
B+, B	9.79%		a1	6.77%	Aa=6.19%	Aa2	6.19%
		a=6.84%	a2	6.84%		Aa3	6.22%
NR	13.25%		a3	6.99%		A1	6.25%
	(3)		baa1	7.14%	A=6.28%	A2	6.28%
		baa=7.29%	baa2	7.29%		A3	6.40%
			baa3	7.44%		Baa1	6.53%
			ba1	7.59%	Baa=6.65%	Baa2	6.65%
			ba2	7.74%		Baa3	6.77%
			ba3	7.89%		Ba1	6.90%
			b1	8.04%		Ba2	7.02%
			b2	8.19%		Ba3	7.14%
			b3	8.34%		B1	7.27%
			caa1	8.49%		B2	7.39%
			caa3	8.64%		B3	7.51%
						NR	7.86%

Notes:

(1) The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources.

(2) Rates of Return on Preferred Stocks and Bonds were based on Moody's "Utility Preferred Stock Yields" "Utility Bond Yields" as of December 2003. However, because Moody assigns a yield to the groups Aaa, Aa, A and Baa for bonds; and aa, a, and baa for preferred stocks, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

(3) For companies whose common equity are not rated (NR), staff judgment is used in assigning the rates of return because the circumstances or reasons for not rating the common equity are different for each company.

2004 Capitalization Rate Study
Natural Gas Distribution Companies

Capital Asset Pricing Model - Ex Ante

Component	Value Line Ratings			
	A	B++	B+	B
Expected Future Return, S&P 500	11.92%	11.92%	11.92%	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%	5.16%	5.16%	5.16%
Risk Premium	6.76%	6.76%	6.76%	6.76%
Beta [2]	0.68	0.68	0.73	0.73
Adjusted Risk Premium	4.61%	4.61%	4.90%	4.90%
Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%	5.16%	5.16%	5.16%
Projected Return on Common Equity	**9.77%**	**9.77%**	**10.06%**	**10.06%**

[1] Wall Street Journal 12/31/03 data

[2] The estimated betas are based on the natural gas distribution beta analysis.

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Asset Pricing Model - Ex Post

Component	Value Line Ratings			
	A	B++	B+	B
Common Stock Return (1926 - 2003) [1]	12.40%	12.40%	12.40%	12.40%
Less: Income-Long Term Government Bonds (1926-2003) [1]	5.20%	5.20%	5.20%	5.20%
Risk Premium	7.20%	7.20%	7.20%	7.20%
Beta [2]	0.68	0.68	0.73	0.73
Adjusted Risk Premium	4.91%	4.91%	5.22%	5.22%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%	5.16%	5.16%	5.16%
Projected Return on Common Equity	**10.07%**	**10.07%**	**10.38%**	**10.38%**

[1] Ibbotson Associates Study
[2] The estimated betas are based on the natural gas distribution beta analysis.
[3] Wall Street Journal 12/31/03 data

2004 Capitalization Rate Study
Natural Gas Distribution Companies

Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A	Peoples Energy	42.04	2.80	2.87	2.12	2.16	5.14%	1.50%	4.27%	6.66%	6.64%	9.40%
A	WGL Holdings	27.79	1.70	2.30	1.28	1.29	4.64%	1.00%	3.93%	6.12%	5.64%	8.57%
B++	AGL Resources	29.10	2.10	2.00	1.11	1.12	3.85%	0.50%	5.50%	7.22%	4.35%	9.35%
B++	Energen Corp.	41.03	2.90	3.10	0.73	0.75	1.83%	NMF	8.00%	7.07%	1.83%	9.83%
B++	New Jersey Resources	38.51	2.45	2.38	1.23	1.30	3.38%	3.00%	6.77%	6.36%	6.38%	10.14%
B++	Northwest Natural Gas Co.	30.75	1.95	1.75	1.27	1.30	4.23%	1.50%	4.46%	6.34%	5.73%	8.68%
B++	Piedmont Natural Gas	43.46	2.30	2.15	1.66	1.72	3.96%	4.00%	6.23%	5.29%	7.96%	10.19%
B++	South Jersey Industries	40.50	2.80	2.65	1.56	1.62	4.00%	3.00%	5.17%	6.91%	7.00%	9.17%
	Mean						3.88%	2.07%	5.54%	6.50%	5.69%	9.42%
	Median						3.98%	1.50%	5.34%	6.51%	6.05%	9.38%
	Weighted Average										5.52%	9.46%

Source: Columns a,b,d,e,f and g were extracted from the December 19, 2003 Value Line.
Source: Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and Thomson FN.com.
Source: Column c was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Natural Gas Distribution Companies

Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B+	Atmos Energy Corp.	24.30	1.60	1.71	1.20	1.22	5.02%	2.00%	6.39%	6.58%	7.02%	11.41%
B+	Laclede Gas	28.55	1.80	1.82	1.34	1.34	4.69%	0.50%	4.17%	6.30%	5.19%	8.86%
B+	NUI Corp.	16.12	1.05	0.92	0.98	0.52	3.23%	0.00%	2.23%	6.51%	3.23%	5.45%
B+	UGI Corporation	33.90	2.35	2.29	1.13	1.18	3.48%	4.00%	8.38%	6.93%	7.48%	11.86%
B	Cascade Natural Gas	21.09	1.35	0.87	0.96	0.96	4.55%	0.50%	4.25%	6.40%	5.05%	8.80%
B	Southern Union Co.	18.40	1.35	0.74	0.00	0.00	0.00%	0.00%	16.50%	7.34%	0.00%	16.50%
B	Southwest Gas Co.	22.45	1.55	1.20	0.82	0.86	3.83%	1.50%	7.33%	6.90%	5.33%	11.16%
C++	Semco Energy	4.90	0.30	0.20	0.40	0.25	5.10%	0.00%	3.25%	6.12%	5.10%	8.35%
	Mean						3.74%	1.06%	6.56%	6.64%	4.80%	10.30%
	Median						4.19%	0.50%	5.32%	6.55%	5.15%	10.01%
	Weighted Average										4.43%	9.79%

Source: Columns a,b,d,e,f and g were extracted from the December 19, 2003 Value Line.
Source: Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and Thomson FN.com.
Source: Column c was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Zacks	Thomson FN	Value Line	Average
A	Peoples Energy	4.00%	4.80%	4.00%	4.27%
A	WGL Holdings	3.90%	3.88%	4.00%	3.93%
B++	AGL Resources	5.30%	4.71%	6.50%	5.50%
B++	Energen Corp.	8.00%	NA	NMF	8.00%
B++	New Jersey Resources	6.30%	6.00%	8.00%	6.77%
B++	Northwest Natural Gas Co.	4.20%	4.17%	5.00%	4.46%
B++	Piedmont Natural Gas	6.00%	5.20%	7.50%	6.23%
B++	South Jersey Industries	4.00%	5.00%	6.50%	5.17%
B+	Atmos Energy Corp.	6.00%	5.67%	7.50%	6.39%
B+	Laclede Gas	3.50%	4.00%	5.00%	4.17%
B+	NUI Corp.	NA	1.95%	2.50%	2.23%
B+	UGI Corporation	6.30%	6.33%	12.50%	8.38%
B	Cascade Natural Gas	NA	4.00%	4.50%	4.25%
B	Southern Union Co.	NA	4.00%	29.00%	16.50%
B	Southwest Gas Co.	6.00%	5.50%	10.50%	7.33%
C++	Semco Energy	NA	3.50%	3.00%	3.25%
	Mean	5.29%	4.58%	7.73%	6.05%
	Median	5.65%	4.71%	6.50%	5.34%
	Weighted Average				7.20%

Source: Column 'a' based on the December 19, 2003 Value Line Financial Strength ratings.

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Mkt Value Equity ($millions)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Equity ($millions)	Total Capital ($millions)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity ratio
A	Peoples Energy	36,666,025	42.04	1,541.44	744.30	0.00	1,541.44	2,285.74	33%	0%	67%	0.48
A	WGL Holdings	48,600,881	27.79	1,350.62	620.70	28.20	1,350.62	1,999.52	31%	1%	68%	0.45
B++	AGL Resources	64,266,376	29.10	1,870.15	1,130.20	0.00	1,870.15	3,000.35	38%	0%	62%	0.60
B++	Energen Corp.	36,143,645	41.03	1,482.97	503.00	0.00	1,482.97	1,985.97	25%	0%	75%	0.34
B++	New Jersey Resources	27,202,388	38.51	1,047.56	273.70	0.00	1,047.56	1,321.26	21%	0%	79%	0.26
B++	Northwest Natural Gas Co.	25,858,818	30.75	795.16	450.80	0.00	795.16	1,245.96	36%	0%	64%	0.57
B++	Piedmont Natural Gas	33,564,851	43.46	1,458.73	460.00	0.00	1,458.73	1,918.73	24%	0%	76%	0.32
B++	South Jersey Industries	13,001,350	40.50	526.55	328.70	1.70	526.55	856.95	38%	0%	61%	0.62
	Mean								30.7%	0.2%	69.1%	0.46
	Median								31.8%	0.0%	67.5%	
	Weighted Average								30.9%	0.2%	68.9%	

Source: Columns a,b,c, f and g were extracted from the December 19, 2003 Value Line.
Source: Column d was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Mkt Value Equity ($millions)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Equity ($millions)	Total Capital ($millions)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity ratio
B+	Atmos Energy Corp.	51,279,963	24.30	1,246.10	864.70	0.00	1,246.10	2,110.80	41%	0%	59%	0.69
B+	Laclede Gas	19,114,458	28.55	545.72	304.60	1.30	545.72	851.62	36%	0%	64%	0.56
B+	NUI Corp.	16,021,722	16.12	258.27	319.30	0.00	258.27	577.57	55%	0%	45%	1.24
B+	UGI Corporation	42,451,000	33.90	1,439.09	1,135.90	0.00	1,439.09	2,574.99	44%	0%	56%	0.79
B	Cascade Natural Gas	11,132,000	21.09	234.77	164.90	0.00	234.77	399.67	41%	0%	59%	0.70
B	Southern Union Co.	72,945,392	18.40	1,342.20	2,041.50	0.00	1,342.20	3,383.70	60%	0%	40%	1.52
B	Southwest Gas Co.	34,035,635	22.45	764.10	1,404.10	0.00	764.10	2,168.20	65%	0%	35%	1.84
C++	Semco Energy	27,936,269	4.90	136.89	475.50	0.00	136.89	612.39	78%	0%	22%	3.47
	Mean								53%	0%	47%	1.35
	Median								50%	0%	50%	
	Weighted Average								53%	0%	47%	

Source: Columns a,b,c, f and g were extracted from the December 19, 2003 Value Line.
Source: Column d was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
A	Peoples Energy	0.75	-0.10	-0.07	0.19	0.48	0.58	0.12
A	WGL Holdings	0.70	0.13	0.11	0.31	0.45	0.55	0.10
B++	AGL Resources	0.75	0.20	0.28	0.41	0.60	0.55	0.20
B++	Energen Corp.	0.70	0.09	0.09	0.29	0.34	0.58	0.07
B++	New Jersey Resources	0.70	0.03	0.04	0.26	0.26	0.61	0.04
B++	Northwest Natural Gas Co.	0.60	-0.17	-0.22	0.07	0.57	0.45	0.08
B++	Piedmont Natural Gas	0.70	-0.04	-0.04	0.21	0.32	0.59	0.07
B++	South Jersey Industries	0.55	0.08	0.08	0.24	0.62	0.40	0.06
	Mean	0.68	0.03	0.03	0.25	0.46	0.54	0.09
	Median	0.70	0.06	0.06	0.25		0.57	
	Weighted				0.27		0.55	

Relevered Beta based on 50% Debt Capital Structure and mean Unlevered Beta	0.86 [2]
Relevered Beta based on 50% Debt Capital structure and a weighted average Unlevered Beta	0.88 [2]

Formulas:

[1] Unlevered Beta = Value Line's Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]
Where: D/E is the debt to equity ratio
t is the tax rate (assumed to be 40%)

Source: Columns a,b,c were extracted from the December 19, 2003 Value Line.
Source: Column d was extracted from Zacks.com.
Source: Column e was extracted from Standard and Poor's Stock Reports.
Source: Column g was extracted from capital structure worksheet included in the 2004 Capitalization Rate Study.

2004 Capitalization Rate Study
Natural Gas Distribution Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
B+	Atmos Energy Corp.	0.65	-0.04	0.01	0.21	0.69	0.46	0.14
B+	Laclede Gas	0.70	-0.02	0.01	0.23	0.56	0.52	0.04
B+	NUI Corp.	0.70	-0.02	0.03	0.24	1.24	0.40	0.07
B+	UGI Corporation	0.75	0.08	0.09	0.31	1.24	0.43	0.07
B	Cascade Natural Gas	0.70	0.08	0.08	0.29	0.70	0.49	0.03
B	Southern Union Co.	0.90	0.57	0.59	0.69	1.52	0.47	0.48
B	Southwest Gas Co.	0.75	0.14	0.19	0.36	1.84	0.36	0.37
C++	Semco Energy	0.65	0.53	NMF	0.59	3.47	0.21	0.20
	Mean	0.73	0.17	0.14	0.36	1.41	0.42	0.17
	Median	0.70	0.08	0.08	0.48		0.44	
	Weighted				0.42		0.43	

Relevered Beta based on 50% Debt Capital Structure and mean Unlevered Beta 0.67 [2]

Relevered Beta based on 50% Debt Capital structure and a weighted average Unlevered Beta 0.69 [2]

Formulas:

[1] Unlevered Beta = Value Line's Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio

t is the tax rate (assumed to be 40%)

Source: Columns a,b,c were extracted from the December 19, 2003 Value Line.
Source: Column d was extracted from Zacks.com.
Source: Column e was extracted from Standard and Poor's Stock Reports.
Source: Column g was extracted from capital structure worksheet included in the 2004 Capitalization Rate Study.

2004 Capitalization Rate Study
Water Companies
Flotation Cost Adjustment

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A, B++, B+	10.65%	4.50%	11.15%	A2	6.28%	1.70%	6.39%
NR	10.65%	4.50%	11.15%				

Formula - Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

2004 Capitalization Rate Study
Water Companies
Summary of Rates of Return

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return (1)	Moody's P/S Yields	Moody Rating	Rate of Return (2)	Moody's Bond Yields	Moody Rating	Rate of Return (2)
A, B++, B+	10.65%		aa1	6.55%	Aaa=NA	Aaa2	5.96%
		aa=NA	aa2	6.62%		Aaa3	6.04%
NR	10.65%		aa3	6.69%		Aa1	6.11%
	(3)		a1	6.77%	Aa=6.19%	Aa2	6.19%
		a=6.84%	a2	6.84%		Aa3	6.22%
			a3	6.99%		A1	6.25%
			baa1	7.14%	A=6.28%	A2	6.28%
		baa=7.29%	baa2	7.29%		A3	6.40%
			baa3	7.44%		Baa1	6.53%
					Baa=6.65%	Baa2	6.65%
						Baa3	6.77%

Notes:

(1) The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources.

(2) Rates of Return on Preferred Stocks and Bonds were based on Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" as of December 2003. However, because Moody assigns a yield to the groups Aaa, Aa, A and Baa for bonds; and aa, a, and baa for preferred stocks, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

(3) Southern California Water Company (SCWC) is the principal susidiary of American States Water Co. As a stand alone company, SCWC is not rated by Value Line. Because American States Water Co.is part of the pool in determining the A, B++, B+ rate of return, it is staff's judgement that SCWC, as the only NR company, should receive a A, B++, B+ rate of return.

2004 Capitalization Rate Study

Water Companies

Capital Asset Pricing Model - Ex Ante

Component	Value Line Ratings A, B++, B+
Expected Future Return, S&P 500	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%
Risk Premium	6.76%
Beta [2]	0.69
Adjusted Risk Premium	4.66%
Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%
Projected Return on Common Equity	**9.82%**

[1] Wall Street Journal 12/31/03 data

[2] The estimated beta is based on staff's beta analysis.

2004 Capitalization Rate Study
Water Companies
Capital Asset Pricing Model - Ex Post

Component	Value Line Ratings A, B++, B+
Common Stock Return (1926 - 2003) [1]	12.40%
Less: Income-Long Term Government Bonds (1926-2003) [1]	5.20%
Risk Premium	7.20%
Beta [2]	0.69
Adjusted Risk Premium	4.96%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%
Projected Return on Common Equity	**10.12%**

[1] Ibbotson Associates Study
[2] The estimated beta is based on staff's beta analysis.
[3] Wall Street Journal 12/31/03 data

2004 Capitalization Rate Study
Water Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	CA Water Service Group	27.40	1.45	1.03	1.12	1.13	4.12%	1.00%	6.50%	5.29%	5.12%	10.62%
B+	Philadelphia Sububurban	22.10	0.90	0.80	0.46	0.49	2.22%	7.00%	9.23%	4.07%	9.22%	11.45%
B+	American States Water	25.00	1.45	1.05	0.88	0.90	3.60%	1.50%	3.00%	5.80%	5.10%	6.60%
	Mean						3.31%	3.17%	6.24%	5.05%	6.48%	9.56%
	Median						3.60%	1.50%	6.50%	5.29%	5.12%	10.62%
	Weighted Average										7.97%	10.65%

Source: Columns a,b,d,e,f,g and i were extracted from the October 31,2003 Value Line.
Source: Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and Thomson FN.com.
Source: Column c was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Water Companies
Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B++	CA Water Service Group	9.00%	4.00%	NA	6.50%
B+	Philadelphia Sububurban	10.00%	8.70%	9.00%	9.23%
B+	American States Water	6.00%	0.00%	3.00%	3.00%
	Mean	8.33%	4.23%	6.00%	6.24%
	Median	9.00%	4.00%	6.00%	6.50%
	Weighted Average				7.54%

Source:
Columns a, b and c were extracted from the November 1, 2003 Value Line.
Column d was extracted from the Zacks Investment Research, Inc.
Column e was extracted from the Thomson Financial Network.

2004 Capitalization Rate Study
Water Companies

Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Mkt Value Equity ($millions)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Equity ($millions)	Total Capital ($millions)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity ratio
B++	CA Water Service Group	16,932,046	27.40	463.94	270.90	3.50	463.94	738.34	37%	0%	63%	0.58
B+	Philadelphia Sububurban	87,253,365	22.10	1,928.30	584.10	0.20	1,928.30	2,512.60	23%	0%	77%	0.30
B+	American States Water	15,196,970	25.00	379.92	230.80	0.00	379.92	610.72	38%	0%	62%	0.61
	Mean								32.6%	0.2%	67.3%	0.50
	Median								36.7%	0.0%	62.8%	
	Weighted Average								28.1%	0.1%	71.8%	

Source: Columns a,b,c,f and g were extracted from Value Line.
Source: Column d was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Water Companies

Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
B++	CA Water Service Group	0.60	0.04	NA	0.60	0.58	0.45	0.11
B+	Philadelphia Sububurban	0.70	-0.31	-0.27	0.70	0.30	0.59	0.24
B+	American States Water	0.60	0.00	0.06	0.60	0.61	0.44	0.12
	Mean	0.63	-0.09	-0.11	0.63	0.50	0.49	0.16
	Median	0.60	0.00	-0.11	0.60		0.45	
	Weighted				0.81		0.65	

Relevered Beta based on 40% Debt Capital Structure and median unlevered Beta. 0.69 [2]

Relevered Beta based on 40% Debt Capital structure and a weighted average Beta 0.92 [2]

<u>Formulas:</u>

[1] Unlevered Beta = Value Line Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio

t is the tax rate (assumed to be 40%)

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Natural Gas Transmission Companies

SBE No.	Company Name	Ratings: Common Equity	Ratings: Bond	Capital Structure: Common Equity	Capital Structure: Debt	Rates of Return: Common Equity	Rates of Return: Debt	Basic Cap Rate
180	**North Baja Pipeline, LLC**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
187	**Mojave Pipeline Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
188	**Kern River Gas Transmission Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
189	**Standard Pacific Gas Line, Inc.**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
190	**Tuscarora Gas Transmission Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
196	**Questar Southern Trails Pipeline Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**
197	**El Paso Natural Gas Company**	Not Rated	Not Rated	70%	30%	12.04%	6.77%	**10.46%**

Industry Notes

- Staff relied upon the results of the following models in forecasting equity rates:

  1. Discounted Cash Flow analysis
  2. Capital Asset Pricing Model - Consideration was given to both the ex post and ex ante risk premiums.

- In forecasting return on common equity, staff also considered the 2004 Cost of Capital Study for Interstate Natural Gas Pipeline Industry.

2004 Capitalization Rate Study
Natural Gas Transmission Companies
Flotation Cost Adjustment

Equity				Bond			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
Not Rated	11.50%	4.50%	12.04%	Not Rated	6.65%	1.70%	6.77%

Formula - Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

2004 Capitalization Rate Study
Natural Gas Transmission Companies

Summary of Return on Common Equity

Description	Value Line B++, B+, B, C+		
	2004	2003	Change
E/P Ratio - Mean	6.99%	6.49%	0.50%
E/P Ratio - Median	6.89%	7.36%	-0.47%
Dividends Yield + Dividends Growth - Mean	8.43%	7.15%	1.28%
Dividends Yield + Dividends Growth - Median	6.38%	7.37%	-0.99%
Dividends Yield + Earnings Growth - Mean	10.69%	11.20%	-0.51%
Dividends Yield + Earnings Growth - Median	10.15%	11.50%	-1.35%
Capital Asset Pricing Model (CAPM) - Ex Ante	10.77%	12.14%	-1.37%
Capital Asset Pricing Model (CAPM) - Ex Post	11.14%	10.75%	0.39%
Valuation Division Recommendation:	11.50%	12.50%	-1.00%

Interstate gas transmission companies are regulated by the Federal Energy Regulatory Commission (FERC). California is the second largest natural gas market in the United States.

The Discounted Cash Flow (DCF) model is computed using data from a sample of gas transmission companies with similar risk and operations. In addition to the financial risk, staff also considered business risk. The decrease in the DCF model this year was primarily caused by a decrease in the growth rate.

The information considered by staff includes the results of DCF analysis (Dividends Yield + Dividends Growth and Dividends Yield + Earnings Growth) and the results of the Capital Asset Pricing Model (CAPM) analysis.

2004 Capitalization Rate Study
Natural Gas Transmission Companies

Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	2004 Est. Earnings	2003 Earnings	2003 Dividends	2004 Est. Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	Div Yld+ Div Grwh (h+i)	Div Yld+ Engs Grwh (h+j)
B+	Cabot Oil & Gas 'A'	29.35	2.00	2.50	0.16	0.20	0.68%	4.00%	8.00%	6.81%	4.68%	8.68%
B+	Devon Energy	57.26	5.25	7.30	0.20	0.20	0.35%	4.50%	7.50%	9.17%	4.85%	7.85%
B++	EOG Resources	46.17	2.40	3.85	0.18	0.20	0.43%	5.00%	13.54%	5.20%	5.43%	13.98%
B+	Equitable Resources	42.92	3.05	2.75	0.97	1.20	2.80%	17.50%	10.56%	7.11%	20.30%	13.36%
B++	National Fuel Gas	24.44	1.70	1.89	1.06	1.10	4.50%	3.50%	4.97%	6.96%	8.00%	9.47%
B++	Questar Corp.	35.15	2.35	2.20	0.78	0.82	2.33%	5.00%	8.50%	6.69%	7.33%	10.83%
	Mean						1.85%	6.58%	8.85%	6.99%	8.43%	10.69%
	Median						1.51%	4.75%	8.25%	6.89%	6.38%	10.15%
	Weighted Average										6.70%	9.74%

Source:

Columns a, b, d - g, i, were extracted from the December 19, 2003 Value Line.

Column c was extracted from the Yahoo Market Guide.

Column j is an average of Value Line, Zacks, and Thomson.

2004 Capitalization Rate Study
Natural Gas Transmission Companies
Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B+	Cabot Oil & Gas 'A'	11.00%	N/A	5.00%	8.00%
B+	Devon Energy	7.50%	N/A	N/A	7.50%
B++	EOG Resources	7.00%	8.80%	24.83%	13.54%
B+	Equitable Resources	12.00%	9.90%	9.78%	10.56%
B++	National Fuel Gas	4.00%	6.70%	4.20%	4.97%
B++	Questar Corp.	7.50%	9.40%	8.60%	8.50%
	Mean	8.17%	8.70%	10.48%	8.85%
	Median	7.50%	9.10%	8.60%	8.25%
	Weighted Average				8.64%

2004 Capitalization Rate Study
Natural Gas Transmission Company

Capital Asset Pricing Model - Ex Ante

Component	Industry Computation
Expected Future Return, S&P 500 [1]	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Risk Premium	6.76%
Beta [3]	0.83
Adjusted Risk Premium	5.61%
Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Projected Return on Common Equity	10.77%

[1] Dividend Yield for S&P 500@12/31/2003	1.63%
5 Year projected growth per First Call	10.29%
Expected future Return, S&P 500	11.92%

[2] Wall Street Journal 12/31/2003 data

[3] Value Line's beta was used because Zack's and Standard & Poor's betas appear inconsistent and would not be meaningful.

2004 Capitalization Rate Study
Natural Gas Transmission Companies

Capital Asset Pricing Model - Ex Post

Component	Industry Computation
Common Stock Return (1926 - 2003) [1]	12.40%
Less: Long Term Government Bonds [1]	5.20%
Risk Premium	7.20%
Beta [2]	0.83
Adjusted Risk Premium	5.98%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%
Projected Return on Common Equity	11.14%

[1] Ibbotson Associates Study

[2] Value Line's beta was used because Zack's and Standard & Poor's betas appear inconsistent and would not be meaningful.

[3] Wall Street Journal 12/31/2003 data

2004 Capitalization Rate Study
Natural Gas Transmission Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line's Beta	Zack's Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
B+	Cabot Oil & Gas 'A'	0.95	N/A	0.55	0.75	0.30	0.64	0.009
B+	Devon Energy	0.85	N/A	0.47	0.66	0.66	0.47	0.360
B++	EOG Resources	0.85	0.65	0.69	0.73	0.22	0.65	0.035
B+	Equitable Resources	0.70	0.27	0.24	0.40	0.24	0.35	0.019
B++	National Fuel Gas	0.75	0.21	0.21	0.39	0.58	0.29	0.045
B++	Questar Corp.	0.80	0.53	0.54	0.62	0.34	0.52	0.034
	Mean	0.82	0.42	0.45	0.59	0.39	0.49	
	Median	0.83	0.40	0.51	0.64		0.50	
	Weighted				0.63		0.49	0.50

Relevered Beta based on 30% Debt Capital Structure 0.61 [2]

Relevered Beta based on 30% Debt Capital Structure and a weighted average Beta 0.61 [2]

Formulas:

[1] Unlevered Beta = Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = Unlevered Beta X [1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio

t is the tax rate (assumed to be 40%)

2004 Capitalization Rate Study
Natural Gas Transmission Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m	n
Value Line Rating	Moody's Bond Rating	Moody's P/S Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Market Value Com. Stock (e * f)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Stock ($millions)	Total Cap. ($mill) (h + i + j)	L.T. Debt %	Pfd Stock %	Common Stock %
B+	Baa2	NR	Cabot Oil & Gas 'A'	32,493,157	29.35	953.7	285.0	0.0	953.7	1,238.7	23%	0%	77%
B+	NR	NR	Devon Energy	232,557,000	57.26	13,316.2	8,581.0	150.0	13,316.2	22,047.2	39%	1%	60%
B++	NR	NR	EOG Resources	115,086,149	46.17	5,313.5	1,010.8	148.3	5,313.5	6,472.6	16%	2%	82%
B+	NR	NR	Equitable Resources	62,257,000	42.92	2,672.1	632.3	0.0	2,672.1	3,304.4	19%	0%	81%
B++	NR	NR	National Fuel Gas	81,438,290	24.44	1,990.4	1,147.8	0.0	1,990.4	3,138.2	37%	0%	63%
B++	NR	NR	Questar Corp.	83,043,728	35.15	2,919.0	1,005.2	0.0	2,919.0	3,924.2	26%	0%	74%
			Mean								26.5%	0.5%	73.0%
			Median								24.3%	0.0%	75.7%
			Weighted Average								31.6%	0.8%	67.7%

NR - Not Rated

Source:

Columns a, d, e, h, i, were extracted from the December 19, 2003 Value Line.

Columns b, c, were extracted from the 2003 Moody's Public Utility and Industrial Manuals.

Column f was extracted from the Yahoo Market Guide.

2004 Capitalization Rate Study
Natural Gas Transmission Companies

Bonds - Rate of Return

Utility Bond Yield	Bond Rating				
	Aaa	Aa	A	Baa	Avg Utility
As of December 31, 2003	N/A	6.19%	6.28%	6.65%	6.37%

Staff applied a bond rating of Baa2 for the Natural Gas Transmission Companies. The yield rate for utility bonds rated Baa2 was 6.65%.

Source: Moody's Public Utility, Credit Market Trends Service

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Local Exchange Companies

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
279	**SBC California**	A+	A1	80%	20%	11.26%	6.36%	**10.28%**
201	**Verizon California Inc.**	A+	A1	80%	20%	11.26%	6.36%	**10.28%**
294	**SureWest Telephone**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
284	**Citizens Telecommunications Company of California**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
270	**Citizens Telecommunications Company of The Golden State**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
311	**Citizens Telecommunications Company of Tuolumne**	Not Rated	Not Rated	70%	30%	12.57%	6.77%	**10.83%**
	Other Local Exchange Companies	Not Rated	Not Rated	70%	30%	13.87%	7.76%	**12.04%**

Industry Summary

- Staff relied on the following models in the development of equity rates:

  1. Discounted Cash Flow (DCF) – Staff considered the weighted average dividend yield plus earnings growth.
  2. Capital Asset Pricing Model (CAPM) – Staff also considered both the ex ante and ex post premiums.

- Staff's recommended rate of return for common equity for lien date 2004 was based on the relative risk of the companies included in the sample in conjunction with the results of the various financial models. The data and/or information considered by staff include the results of the DCF analysis (Dividend Yield plus Dividend Growth and Dividend Yield plus Earnings Growth) and the CAPM analysis, and the spreads between utility bond yields. For companies with financial ratings of As and Bs, staff placed most weight on the results of the CAPM analysis.

- Staff's recommended capital structure for lien date 2004 was based on the results of the 2004 capitalization rate study for local exchange companies using the same sample of companies that were included in the calculation of the DCF model.

- Sprint Corporation is included in the sample in the 2004 capitalization rate study for both the local exchange and interexchange companies. Sprint generates significant revenues from both local and long distance business operations.

- Citizens Communications is included in the sample for the first time in the 2004 capitalization rate study for local exchange companies. According to the January 2, 2004 issue of Value Line, Citizens generated significant local telephone revenues as compared to its total revenues for calendar year 2002.

- SureWest Telephone (formerly known as Roseville Telephone Co.) is a subsidiary of SureWest Communications.

- Citizens Telecommunications Company of California, Citizens Telecommunications Company of The Golden State, and Citizens Telecommunications Company of Tuolumne are subsidiaries of Citizens Communications.

2004 Capitalization Rate Study
Local Exchange Companies
Flotation Cost Adjustment

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moodys Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A+	10.75%	4.50%	11.26%	Aa2	6.19%	1.70%	6.30%
NR-1	12.00%	4.50%	12.57%	Aa3	6.22%	1.70%	6.33%
NR-2	13.25%	4.50%	13.87%	A1	6.25%	1.70%	6.36%
				A2	6.28%	1.70%	6.39%
				A3	6.40%	1.70%	6.51%
				Baa1	6.53%	1.70%	6.64%
				Baa2	6.65%	1.70%	6.77%
				Not Rated	7.62%	1.70%	7.76%

Formula: Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = Cost of capital unadjusted for flotation costs
f = Flotation cost as a percentage of the value of securities issued

NR-1 : Although no ratings were available for state-assessed companies, a Value Line rating of B was applied to the equity and a Moody bond rating of Baa2 was applied to represent the debt for companies with a value between $50 million - $300 million.

NR-2 : Although no ratings were available for state-assessed companies, the Value Line rating of lower than B was applied to the equity and staff estimate was used for the debt for companies with a value less than $50 million.

2004 Capitalization Rate Study
Local Exchange Companies
Return On Common Equity Summary

Description	A+, A			B++, B+, B		
	2004	2003	Change	2004	2003	Change
E/P Ratio - Mean	6.80%	7.37%	-0.58%	6.15%	8.10%	-1.95%
E/P Ratio - Median	6.91%	7.50%	-0.59%	5.84%	8.00%	-2.15%
Dividend Yield + Dividend Growth - Mean	7.33%	6.14%	1.19%	5.58%	7.03%	-1.45%
Dividend Yield + Dividend Growth - Median	7.09%	6.12%	0.97%	4.80%	5.82%	-1.02%
Weighted Average (Dividend Yield + Dividend Growth - Mean)	7.06%	6.09%	0.97%	4.91%	6.13%	-1.21%
Dividend Yield + Earnings Growth - Mean	6.89%	9.51%	-2.62%	9.01%	10.79%	-1.78%
Dividend Yield + Earnings Growth - Median	6.60%	8.91%	-2.31%	9.19%	12.04%	-2.85%
Weighted Average (Dividend Yield + Earnings Growth - Mean)	5.92%	9.05%	-3.13%	8.00%	9.71%	-1.71%

	A+, A	B++, B+, B	Lower than B
CAPM Analysis - Ex Ante:			
2004 Lien Date	11.39%	12.34%	NMF
2003 Lien Date	11.34%	13.10%	NMF
CAPM Analysis - Ex Post:			
2004 Lien Date	11.79%	12.81%	NMF
2003 Lien Date	10.11%	11.53%	NMF
Discounted Cash Flow:			
2004 Lien Date	5.92%	8.00%	NMF
2003 Lien Date	9.05%	9.71%	NMF
2004 Recommended Rate	10.75%	12.00%	13.25%
2003 SBE Rate	10.75%	12.00%	13.25%

2004 Capitalization Rate Study
Local Exchange Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivsGrw (h+i)	DivYld+ ErngsGrw (h+j)
A+	BellSouth Corp.	28.30	2.10	2.05	0.92	1.01	3.57%	6.50%	4.26%	7.42%	10.07%	7.83%
A+	SBC Communications Inc.	26.07	1.55	1.55	1.37	1.17	4.49%	3.50%	0.22%	5.95%	7.99%	4.71%
A+	Verizon Communications	35.08	2.40	2.61	1.54	1.60	4.56%	0.50%	0.81%	6.84%	5.06%	5.37%
A	ALLTEL Corp.	46.58	3.25	3.05	1.42	1.49	3.20%	3.00%	6.47%	6.98%	6.20%	9.67%
	Mean						3.95%	3.38%	2.94%	6.80%	7.33%	6.89%
	Median						4.03%	3.25%	2.53%	6.91%	7.09%	6.60%
	Weighted Average										7.06%	5.92%
B++	CenturyTel Inc.	32.62	2.50	2.38	0.22	0.24	0.74%	12.00%	6.91%	7.66%	12.74%	7.64%
B	Citizens Communications	12.42	0.50	0.45	0.00	NIL	0.00%	NIL	10.74%	4.03%	0.00%	10.74%
B	Sprint Corporation	16.42	1.50	1.40	0.50	0.50	3.05%	0.00%	2.15%	9.14%	3.05%	5.19%
B	Telephone & Data Systems	62.55	2.35	1.36	0.62	0.66	1.06%	5.50%	11.40%	3.76%	6.56%	12.46%
	Mean						1.21%	5.83%	7.80%	6.15%	5.58%	9.01%
	Median						0.90%	5.50%	8.82%	5.84%	4.80%	9.19%
	Weighted Average										4.91%	8.00%

Source: Columns a, d-g, i, were extracted from the January 2, 2004 Value Line.
Column c was extracted from the January 2, 2004 Wall Street Journal.
Column j was extracted from the long term earnings growth page of this 2004 capitalization rate study.

2004 Capitalization Rate Study
Local Exchange Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Market Value Common	Long Term Debt ($Million)	Preferred Stock ($Million)	Common Stock ($Million)	Total Capital ($Million)	L.T. Debt %	Preferred Stock %	Common Stock %	Value Line Page
A+	BellSouth Corp.	1,848,116,955	28.30	52,301.71	11,646.00	0.00	52,301.71	63,947.71	18.21%	0.00%	81.79%	725
A+	SBC Communications	3,310,700,000	26.07	86,309.95	16,357.00	0.00	86,309.95	102,666.95	15.93%	0.00%	84.07%	737
A+	Verizon Communications	2,761,550,374	35.08	96,875.19	37,961.00	0.00	96,875.19	134,836.19	28.15%	0.00%	71.85%	742
A	ALLTEL Corp.	312,068,829	46.58	14,536.17	5,619.50	0.35	14,536.17	20,156.02	27.88%	0.00%	72.12%	723
	Mean			62,505.75				321,606.86	22.54%	0.00%	77.46%	
	Median			69,305.83					23.05%	0.00%	76.95%	
	Weighted Average								22.26%	0.00%	77.74%	
B++	CenturyTel Inc.	144,205,973	32.62	4,704.00	3,119.00	8.00	4,704.00	7,831.00	39.83%	0.10%	60.07%	726
B	Citizens Communications	284,436,272	12.42	3,532.70	4,302.90	201.30	3,532.70	8,036.90	53.54%	2.50%	43.96%	728
B	Sprint Corporation	903,949,604	16.42	14,842.85	2,789.00	0.00	14,842.85	17,631.85	15.82%	0.00%	84.18%	738
B	Telephone & Data Sys.	57,440,447	62.55	3,592.90	3,233.80	6.60	3,592.90	6,833.30	47.32%	0.10%	52.58%	740
	Mean			6,668.11				40,333.05	39.13%	0.68%	60.20%	
	Median			4,148.45					43.58%	0.10%	56.32%	
	Weighted Average								33.33%	0.54%	66.13%	

Source: Column a, c, f, g, were extracted from the January 2, 2004 Value Line. Capital structure as of September 30, 2003.
Column d was extracted from the January 2, 2004 Wall Street Journal.

2004 Capitalization Rate Study
Local Exchange Companies

Capital Asset Pricing Model - Ex Ante

Component	Value Line Rating A+, A	Value Line Rating B++, B+, B
Expected Future Return, S&P 500 [1]	11.92%	11.92%
Less: Risk Free Return, Long Term Government Bonds[2]	5.16%	5.16%
Ex Ante Risk Premium	6.76%	6.76%
Relevered Beta [3]	0.92	1.06
Adjusted Risk Premium	6.23%	7.18%
Risk Free Return, Long Term Government Bonds [2]	5.16%	5.16%
Projected Equity Yield	11.39%	12.34%

[1] Dividend Yield for S&P 500 Companies @ December 31, 2003 - Standardandpoors.com	1.63%
Next 5 Years Estimated Earnings Growth per First Call - Yahoo Finance, January 3, 2004	10.29%
Expected Future Return for S&P 500 Companies	11.92%

[2] Wall Street Journal, January 2, 2004.

[3] The estimated betas are derived from a representative sample of local exchange companies with similar ratings.

2004 Capitalization Rate Study
Local Exchange Companies

Capital Asset Pricing Model - Ex Post

Component	Value Line Rating A+, A	Value Line Rating B++, B+, B
Common Stock Return (1926-2003)[1]	12.40%	12.40%
Less: Income - Long Term Government Bonds (1926-2003)[1]	5.20%	5.20%
Ex Post Risk Premium	7.20%	7.20%
Relevered Beta [2]	0.92	1.06
Adjusted Risk Premium	6.63%	7.65%
Risk Free Return, Long Term Government Bonds[3]	5.16%	5.16%
Projected Equity Yield	11.79%	12.81%

[1] Ibbotson Associates Study.
[2] The estimated betas are derived from a representative sample of local exchange companies with similar ratings.
[3] Wall Street Journal, January 2, 2004.

2004 Capitalization Rate Study
Local Exchange Companies

Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A+	BellSouth Corp.	6.00%	3.90%	2.87%	4.26%
A+	SBC Communications	(4.50%)	4.40%	0.77%	0.22%
A+	Verizon Communications	(1.50%)	3.40%	0.52%	0.81%
A	ALLTEL Corp.	8.50%	5.50%	5.41%	6.47%
	Mean	2.13%	4.30%	2.39%	2.94%
	Median	2.25%	4.15%	1.82%	2.53%
	Weighted Average				1.66%
B++	CenturyTel Inc.	12.50%	4.30%	3.92%	6.91%
B	Citizens Communications	NMF	13.30%	8.17%	10.74%
B	Sprint Corporation	4.50%	3.10%	(1.16%)	2.15%
B	Telephone & Data Systems	3.50%	14.50%	16.20%	11.40%
	Mean	6.83%	8.80%	6.78%	7.80%
	Median	4.50%	8.80%	6.05%	8.82%
	Weighted Average				6.35%

Source: Columns a, c were extracted from the January 2, 2004 Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonFN.com.

2004 Capitalization Rate Study
Local Exchange Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
A+	BellSouth Corp.	0.95	0.94	0.96	0.95	0.22	0.84	0.04
A+	SBC Communications	1.05	0.82	0.81	0.89	0.19	0.80	0.06
A+	Verizon Communications	1.00	0.98	0.95	0.98	0.39	0.79	0.16
A	ALLTEL Corp.	1.00	0.86	0.91	0.92	0.39	0.75	0.02
	Mean	1.00	0.90	0.91	0.94	0.30	0.80	
	Median	1.00	0.90	0.93	0.94		0.80	
	Weighted				0.94		0.80	0.29
B++	CenturyTel Inc.	1.10	1.02	0.96	1.03	0.66	0.73	0.13
B	Citizens Communications	1.00	1.22	N/A	1.11	1.28	0.63	0.25
B	Sprint Corporation	1.05	1.22	1.20	1.16	0.19	1.04	0.08
B	Telephone & Data Systems	0.95	1.20	1.19	1.11	0.90	0.72	0.15
	Mean	1.03	1.17	1.12	1.10	0.76	0.78	
	Median	1.03	1.21	1.19	1.11		0.73	
	Weighted				1.11		0.84	0.62

	A+, A	B++, B+, B
For A+, A Companies:		
Relevered beta based on 20% debt capital structure	0.91 [2]	-----
Relevered beta based on 20% debt capital structure and a weighted average beta	0.92 [2]	-----
For B++,B+,B Companies:		
Relevered beta based on 30% debt capital structure	-----	0.98 [2]
Relevered beta based on 30% debt capital structure and a weighted average beta	-----	1.06 [2]

Formulas:

[1] Unlevered beta = beta/[1+(1-t)(d/e)]

[2] Relevered beta = Unlevered beta x [1+(1-t)(d/e)]

Where: d/e is the debt to equity ratio
t is the tax rate (assumed to be 40%)

Source: Columns a, c were extracted from the January 2, 2004 Value Line.
Column d was extracted from Zacks.com.

Column e was extracted from the Standard and Poor's Stock Reports, December 2003.

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Electric Generation

Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
	Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Recently Constructed Facilities [1]	C+	NR	60%	40%	13.90%	8.41%	**11.70%**
Composite Facilities [2]	C+	NR	60%	40%	14.96%	8.41%	**12.34%**
Older Facilities [3]	C+	NR	60%	40%	15.67%	8.79%	**12.91%**

[1] Recently Constructed Facilities - Facilities constructed after September 1996 incorporating modern electric generation technologies at the time they were built.

[2] Composite Facilities - Facilities that were sold off by vertically integrated electric utilities and for which replacements of some obsolete generation units with modern electric generation technologies have been made.

[3] Older Facilities - Facilities that were sold off by vertically integrated electric utilities for which no replacements, other than for routine maintenance, have been made.

Industry Notes

- The available information with respect to the capital structure, rates of return, and statistics based on historical operating results and market performance are unreliable due to the small number of pure play electric generation companies and the distressed nature of the surviving companies.

- Staff's recommended capital structure of 60% equity and 40% debt recognizes that a prospective purchaser of an electric generation plant would not be able to employ the high level of debt currently maintained by the companies in the sample. The capital structure selected provides sufficient coverage of interest and principal payments on the debt to support a debt rate less than the companies are currently paying.

- Staff included a risk premium of 100 basis points to the debt rate to recognize the market perception of additional risk present in this industry. This premium is lower than was applied last year because there is significantly less debt in the recommended capital structure than last year.

- The relevered beta used by the staff in calculating the relative risk of electric generation facilities relative to the risk of the overall market reflects that a prospective purchaser using the recommended capital structure is subject to less financial risk than companies in the sample.

- Recommendations for capitalization rates for electric generation facilities submitted by the industry and interested parties have been considered in staff’s analysis.

2004 Capitalization Rate Study
Electric Generation Facilities

Flotation Cost Adjustment

Value Line Rating	Equity			Debt		
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Recommended Rate	Flotation Cost in %	Adjusted Rate
Recently Constructed Facilities[1]	13.27%	4.50%	13.90%	8.27%	1.70%	8.41%
Composite Facilities[1]	14.29%	4.50%	14.96%	8.27%	1.70%	8.41%
Older Facilities [2]	14.96%	4.50%	15.67%	8.64%	1.70%	8.79%

Formula - Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

[1] B1 bond rating with an additional risk premium of 100 basis points. This represents a 236 basis point reduction from last year

[2] Caa1 bond rating with an additional risk premium of 100 basis points. This represents a 236 basis point reduction from last year

2004 Capitalization Rate Study
Electric Generation Facilities

Summary of Rates of Return

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return (1)	Moody's P/S Yields	Moody Rating	Rate of Return (2)	Moody's Bond Yields	Moody Rating	Rate of Return (2)
Recently Constructed Facilities	13.27%		aa1	6.80%	Aaa=NA	Aaa2	5.96%
		aa=6.81%	aa2	6.81%		Aaa3	6.04%
Composite Facilities	14.29%	.	aa3	6.82%		Aa1	6.11%
			a1	6.83%	Aa=6.19%	Aa2	6.19%
Older Facilities	14.96%	a=6.84%	a2	6.84%		Aa3	6.22%
			a3	6.99%		A1	6.25%
			baa1	7.14%	A=6.28%	A2	6.28%
		baa=7.29%	baa2	7.29%		A3	6.40%
			baa3	7.44%		Baa1	6.53%
					Baa=6.65%	Baa2	6.65%
						Baa3	6.77%
						Ba1	6.90%
						Ba2	7.02%
						Ba3	7.14%
						B1	7.27%
						B2	7.39%
						B3	7.51%
						Caa1	7.64%

Notes:

(1) The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources.

(2) Rates of Return on Preferred Stocks and Bonds were based on Moody's "Utility Preferred Stock Yields" as of November 2003 and "Utility Bond Yields" as of November 2003. However, because Moody assigns a yield to the groups Aaa, Aa, A and Baa for bonds; and aa, a, and baa for preferred stocks, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

2004 Capitalization Rate Study

Electric Generation Facilities

Capital Asset Pricing Model - Ex Ante

Component	Types of Facilities		
	Recently Constructed	Composite	Older
Expected Future Return, S&P 500	11.92%	11.92%	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%	5.16%	5.16%
Risk Premium	6.76%	6.76%	6.76%
Beta [2]	1.20	1.35	1.45
Adjusted Risk Premium	8.11%	9.13%	9.80%
Risk Free Return 25 - 30 Year Treasury Bonds [1]	5.16%	5.16%	5.16%
Projected Return on Common Equity	**13.27%**	**14.29%**	**14.96%**

[1] Wall Street Journal 12/31/03 data

[2] The betas are based on staff's judgement. See explanation contained in the Industry Notes.

2004 Capitalization Rate Study

Electric Generation Facilities

Capital Asset Pricing Model - Ex Post

Component	Types of Facilities		
	Recently Constructed	Composite	Older
Common Stock Return (1926 - 2003) [1]	12.40%	12.40%	12.40%
Less: Long Term Government Bonds [1]	5.20%	5.20%	5.20%
Risk Premium	7.20%	7.20%	7.20%
Beta [2]	1.20	1.35	1.45
Adjusted Risk Premium	8.64%	9.72%	10.44%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%	5.16%	5.16%
Projected Return on Common Equity	**13.80%**	**14.88%**	**15.60%**

[1] Ibbotson Associates Study

[2] The betas are based on staff's judgement. See explanation contained in the Industry Notes.

[3] Wall Street Journal 12/31/03 data

2004 Capitalization Rate Study
Electric Generation Facilities
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est. 2004 Earnings	2003 Earnings	2003 Dividends	Est. 2004 Dividends	Dividend Yield (g/c)	Est. Dividends Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
C+	AES Corp.	9.44	0.60	0.45	0.00	0.00	0.00%	0.00%	6.75%	6.36%	0.00%	6.75%
C+	Calpine Corp.	4.81	0.15	0.20	0.00	0.00	0.00%	0.00%	8.17%	3.12%	0.00%	8.17%
C+	Reliant Resources	7.36	0.60	0.10	0.00	0.00	0.00%	0.00%	5.17%	NMF	0.00%	5.17%
	Mean						0.00%	0.00%	6.69%	4.74%	0.00%	6.69%
	Median						0.00%	0.00%	6.75%	4.74%	0.00%	6.75%
	Weighted Average										0.00%	6.69%

Source: Columns a,b,d,e,f,g and i were extracted from the January 9, 2004 Value Line.
Source: Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and Thomson FN.com.
Source: Column c was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Electric Generation Facilities
Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
C+	AES Corp.	-4.00%	13.00%	11.25%	6.75%
C+	Calpine Corp.	-6.00%	6.00%	24.50%	8.17%
C+	Reliant Resources	NMF	5.00%	5.33%	5.17%
	Mean	-5.00%	8.00%	13.69%	6.69%
	Median	-5.00%	6.00%	11.25%	6.75%

2004 Capitalization Rate Study
Electric Generation Facilities
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/03	Mkt Value Equity ($millions)	L.T. Debt ($millions)	Pfd Stock ($millions)	Common Equity ($millions)	Total Capital ($millions)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity ratio
C+	AES Corp.	622,687,808	9.44	5,878.17	15,325.00	0.00	5,878.17	21,203.17	72%	0%	28%	2.61
C+	Calpine Corp.	415,131,672	4.81	1,996.78	16,700.00	0.00	1,996.78	18,696.78	89%	0%	11%	8.36
C+	Reliant Resources	294,591,650	7.36	2,168.19	7,113.30	0.00	2,168.19	9,281.49	77%	0%	23%	3.28
						Mean			79%	0%	21%	4.75
						Median			77%	0%	23%	
						Weighted Average			80%	0%	20%	

Source: Columns a,b,c,f and g were extracted from the January 9, 2004 Value Line.
Source: Column d was extracted from Yahoo Finance and represents 12/31/03 closing stock prices.

2004 Capitalization Rate Study
Electric Generation Facilities
Beta Analysis

a	b	c	d	e	f	g	h	i
Financial Strength Value Line	Company Name	Value Line's Beta	Zack's Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
C+	AES Corp.	1.85	1.92	1.90	1.89	2.61	0.74	1.12
C+	Calpine Corp.	1.95	2.34	2.27	2.19	8.36	0.36	3.18
C+	Reliant Resources	NMF	NA	NA	NA	3.28	NA	0.62
	Mean	1.90	2.13	2.09	2.04	4.75	0.55	1.64
	Median	1.90	2.13	2.09	2.04		0.55	
	Weighted				2.03		0.56	

Relevered Beta based on 40% Debt Capital Structure and mean Unlevered Beta 0.77 [1]

Relevered Beta based on 40% Debt Capital Structure and a weighted average Unlevered Beta 0.79 [2]

Formulas:

[1] Unlevered Beta = Average Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio

t is the tax rate (assumed to be 40%)

Source: Columns a,b,c were extracted from the January 9, 2004 Value Line.
Source: Column d was extracted from Zacks.com.
Source: Column e was extracted from Standard and Poor's Stock Reports.
Source: Column g was extracted from capital structure worksheet included in the 2004 Capitalization Rate Study.

Note: It is staff's opinion that the relevered beta of 0.79 for this industry is too low in light of the other relevant betas of the other industries. Please see Industry Notes for staff's explanation of the betas that are used on pages 69 and 70.

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Interexchange Telephone Companies

		Ratings		Capital Structure		Rates of Return		**Basic**
		Common		Common	Long Term	Common	Long Term	**Cap**
SBE No.	**Company Name**	Equity	Bond	Equity	Debt	Equity	Debt	**Rate**
2310	**AT&T Communications, Inc.**	B+	Baa2	65%	35%	12.83%	7.02%	**10.79%**
2014	**Sprint Communications Co., L.P.**	B	Baa3	65%	35%	12.83%	7.14%	**10.84%**
7677	**Talk America, Inc.**	B	NR	65%	35%	12.83%	8.28%	**11.24%**
7522	**Time Warner Telecom of California, L.P.**	C+	Caa1	55%	45%	14.92%	7.65%	**11.65%**
2463	**Qwest Communications Corporation**	C+	Caa1	55%	45%	14.92%	7.65%	**11.65%**
7761	**Level 3 Communications, Inc.**	C	Caa2	55%	45%	14.92%	7.78%	**11.71%**
7686	**Primus Telecommunications, Inc.**	C+	Caa3	55%	45%	14.92%	7.91%	**11.77%**
2043	**Pac West Telecomm, Inc.**	C	Ca	55%	45%	14.92%	8.28%	**11.93%**
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	18.06%	8.28%	**13.66%**
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	21.20%	9.05%	**15.73%**

2004 Capitalization Rate Study
Interexchange Telephone Companies
Industry Notes

- Staff relied on the Capital Asset Pricing Model in the development of equity rates. Consideration was given to both the ex post and ex ante risk premiums.

- Staff did not consider the Discounted Cash Flow model because of the limited number of companies paying dividends.

- For companies whose common equity, preferred stocks and/or bonds are not rated, staff judgment is used in assigning the rates of return because the circumstances or reasons for not rating the bonds or preferred stocks are different for each company.

- Sprint Corporation is included in the sample for the 2004 capitalization rate study for both local exchange and interexchange companies. Sprint generates significant revenues from both local and long distance business operations.

- The following companies were added to the 2004 Capitalization Rate Study:

  1. Commonwealth Telephone Enterprises
  2. Net2Phone, Inc.
  3. CT Communications, Inc.

- The following companies were omitted from the 2004 Capitalization Rate Study because of a bankruptcy filing or because Value Line reported no meaningful data:

  1. Cable & Wireless, PLC
  2. Broadwing, Inc.

- The capitalization rates derived are intended to be applied only to the companies' unitary interexchange telephone operations.

2004 Capitalization Rate Study
Interexchange Telephone Companies
Flotation Cost Adjustment

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate [1]	Flotation Cost in %	Adjusted Rate
B+	12.25%	4.50%	12.83%	Ba1	6.69%	1.70%	6.81%
B	12.25%	4.50%	12.83%	Baa2	6.90%	1.70%	7.02%
C+	14.25%	4.50%	14.92%	Baa3	7.02%	1.70%	7.14%
C	14.25%	4.50%	14.92%	B3	7.39%	1.70%	7.52%
Not Rated	15.25%	4.50%	15.97%	Caa1	7.52%	1.70%	7.65%
Other IEX Carriers	17.25%	4.50%	18.06%	Caa2	7.64%	1.70%	7.78%
Other IEX Resellers	20.25%	4.50%	21.20%	Caa3	7.77%	1.70%	7.91%
				Not Rated	8.14%	1.70%	8.28%
				Not Rated	8.89%	1.70%	9.05%

[1] The recommended debt rate was adjusted to reflect more risk in this distressed industry.

Formula - Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs
f = Flotation cost as a percentage of the value of securities issued

2004 Capitalization Rate Study
Interexchange Telephone Companies
Summary of Rates of Return

Common Equity		Bonds		
V-L Rating	Rate of Return [1]	Moody's Bond Yield	Moody's Rating	Rate of Return [2]
B+	12.25%	Aa=6.19	Aa2	6.19%
B	12.25%		Aa3	6.22%
C+	14.25%		A1	6.25%
C	14.25%	A=6.28	A2	6.28%
Not Rated	15.25%		A3	6.40%
Other IEX Carriers	17.25%		Ba1	6.44%
Other IEX Resellers	20.25%		Baa1	6.53%
		Baa=6.65	Baa2	6.65%
			Baa3	6.77%
			B3	7.14%
			Not Rated	Note

[1] The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the Capital Asset Pricing Models.

[2] Rates of Return on Bonds were based on Moody's and "Utility Bond Yields" as taken from the December 31, 2003 News Reports. However, because Moody's assigns a yield only to the groups Aa, A and Baa for bonds, staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

Note: For companies whose bonds are not rated, staff judgement is used in assigning the rates of return because the circumstances or reasons for not rating the bonds or preferred stocks are different for each company.

2004 Capitalization Rate Study
Interexchange Telephone Companies

Summary of Rate of Return on Common Equity

	Value Line A, B++, B+, B		
	2004	2003	Change
E/P Ratio-Mean	5.46%	9.99%	-4.53%
E/P Ratio-Median	7.61%	9.99%	-2.38%
Div Yld + Div Growth-Mean	2.50%	3.16%	-0.66%
Div Yld + Div Growth-Median	0.00%	3.16%	-3.16%
Weighted Average - Mean	0.74%	0.77%	-0.03%
Div Yld + Earn.Growth-Mean	9.43%	11.58%	-2.15%
Div Yld + Earn.Growth-Median	10.49%	11.58%	-1.09%
Weighted Average - Mean	0.93%	3.39%	-2.46%

	Value Line Ratings			
	B+, B	C+, C, NR	Other IEX Carriers	Other IEX Resellers
2003	13.50%	14.50%	17.50%	20.50%
CAPM - Ex Ante	11.92%	13.95%	NMF	NMF
CAPM - Ex Post	12.36%	14.52%	NMF	NMF
2004 Valuation Division Recommendation	12.25%	14.25%	17.25%	20.25%

2004 Capitalization Rate Study
Interexchange Telephone Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Financial Strength Value Line	Company Name	Stock Price 12/31/03	Estimated 2004 EPS	2003 EPS	2003 Dividends	Dividend Est. 2004 Amount	Dividend Yield (g/c)	Estimated Dividend Growth	Estimated Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B+	AT&T Corporation	20.3000	2.45	2.35	0.80	1.00	4.93%	7.00%	5.56%	12.07%	11.93%	10.49%
B+	Commonwealth Tel.	37.7500	2.30	2.42	0.00	0.00	0.00%	0.00%	13.22%	6.09%	0.00%	13.22%
B+	Net2Phone, Inc.	6.8000	-0.69	-0.55	0.00	0.00	0.00%	0.00%		-10.15%	0.00%	
B	Sprint Corp. (FON Grp)	16.4200	1.50	1.40	0.50	0.50	3.05%	0.00%	2.15%	9.14%	3.05%	5.19%
B	CT Communications	13.5000	0.64	0.57	0.00	0.00	0.00%	0.00%	15.25%	4.74%	0.00%	15.25%
B	Talk America Holdings	11.5200	1.25	1.11	0.00	0.00	0.00%	0.00%	3.00%	10.85%	0.00%	3.00%
C+	Qwest Comm. Int'l.	4.3200	-0.30	-0.37	0.00	0.00	0.00%	0.00%	-1.90%	-6.94%	0.00%	-1.90%
C+	Primus Telecomm. Grp.	10.1600	0.60	0.06	0.00	0.00	0.00%	0.00%		5.91%	0.00%	
C+	Time Warner Telecom	10.1300	-0.88	-0.99	0.00	0.00	0.00%	0.00%		-8.69%	0.00%	
C	Level 3 Comm., Inc.	5.7000	-1.25	-1.45	0.00	0.00	0.00%	0.00%	18.10%	-21.93%	0.00%	18.10%
C	Pac-West Telecomm,Inc	1.9200	NMF	NMF	0.00	0.00	0.00%	0.00%			0.00%	
	Mean						0.72%	0.64%	7.91%	0.11%	1.36%	9.05%
	Median						0.00%	0.00%	5.56%	5.32%	0.00%	10.49%
	Weighted Average										4.44%	5.92%

The Discounted Cash Flow model is not considered in the derivation of the 2004 capitalization rate because of the limited number of interexchange companies paying dividends.

Source: Columns a,b,d-i were extracted from the January 2, 2004 Value Line.

Source: Column c was extracted from Yahoo Finance December 31, 2003 closing stock prices.

Source: Column j is based on the average estimated earnings growth rate from Value Line, Zack's and Thomson Financial.

2004 Capitalization Rate Study

Interexchange Telephone Companies

Capital Asset Pricing Model - Ex Ante

Component	Value Line Rating	
	B+, B [1]	C+, C [1]
	(a)	(b)
Expected Future Return - S & P 500 [2]	11.92%	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%	5.16%
Risk Premium	6.76%	6.76%
Relevered Beta	1.00	1.30
Adjusted Risk Premium	6.76%	8.79%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%	5.16%
Projected Return on Common Equity	11.92%	13.95%

[1] The estimated betas for B+, B, C+, and C rated companies are based on interexchange data from the Beta Analysis page. Staff's selection of the beta for C+ and C rated companies is in the range of the sample computed with and without Qwest Communications International Inc.

[2] Expected Future Return - S & P 500

Dividend Yield for S&P 500 - 12/31/03	1.63%
5 Year Projected Growth - First Call	10.29%
	11.92%

[3] Wall Street Journal dated January 2, 2004.

2004 Capitalization Rate Study
Interexchange Telephone Companies
Capital Asset Pricing Model - Ex Post

Component	Value Line Rating B+, B [1] (a)	Value Line Rating C+, C [1] (b)
Total Return, Large Company Stocks [2]	12.40%	12.40%
Less: Long Term Government Bonds [2]	5.20%	5.20%
Risk Premium	7.20%	7.20%
Relevered Beta	1.00	1.30
Adjusted Risk Premium	7.20%	9.36%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%	5.16%
Projected Return on Common Equity	12.36%	14.52%

[1] The estimated betas for B+, B, C+, and C rated companies are based on interexchange data from the Beta Analysis page. Staff's selection of the beta for C+ and C rated companies is in the range of the sample computed with and without Qwest Communications International Inc.

[2] Ibbotson Associates Study

[3] Wall Street Journal dated January 2, 2004.

2004 Capitalization Rate Study
Interexchange Telephone Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line's Beta	Zack's Beta	First Call Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	Wtg Avg Debt/Equity Ratio
B+	AT&T Corporation	NMF	1.14	0.67	0.91	0.80	0.61	0.47
B+	Commonwealth Tel.	0.80	0.58	0.62	0.67	0.36	0.55	0.01
B+	Net2Phone, Inc.	1.10	2.04	1.30	1.48	0.05	1.44	0.00
B	Sprint Corp. (FON Grp)	1.05	1.22	1.01	1.09	0.19	0.98	0.07
B	CT Communications	1.10	0.76	1.27	1.04	0.34	0.87	0.00
B	Talk America Holdings	1.10	1.22	1.01	1.11	0.20	0.99	0.00
	Mean	1.03	1.16	0.98	1.05	0.32	0.91	
	Median	1.10	1.18	1.01	1.07		0.92	
	Weighted				0.97		0.76	0.55
C+	Qwest Comm. Int'l.	1.75	2.64	0.95	1.78	2.65	0.69	1.81
C+	Primus Telecomm. Grp.	1.25	2.36	1.50	1.70	0.85	1.13	0.03
C+	Time Warner Telecom	2.25	4.19	1.73	2.72	1.01	1.70	0.06
C	Level 3 Comm., Inc.	1.65	1.61	1.06	1.44	1.38	0.79	0.31
C	Pac-West Telecomm,Inc.	1.25	1.93	0.85	1.34	1.36	0.74	0.01
	Mean	1.63	2.55	1.22	1.80	1.45	1.01	
	Median	1.65	2.36	1.06	1.70		0.79	
	Weighted				1.75		0.78	2.21
	Excluding Qwest Comm. Int'l							
	Mean					1.15	1.09	
	Median						0.96	
	Weighted						0.98	1.26

B or B+ Rating Relevered Beta based on 35% Debt Capital Structure 1.00 [2]

C or C+ Rating Relevered Beta based on 45% Debt Capital Structure 1.16 [2]

C or C+ Rating Relevered Beta based on 45% Debt Capital Structure 1.47 [2]
without Qwest due to the anomalous capital structure.

Formulas:

[1] Unlevered Beta = Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = Unlevered Beta X [1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio
t is the tax rate (assumed to be 40%)

2004 Capitalization Rate Study
Interexchange Telephone Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Bond Rating Moody	Company Name	Common Stock Outstanding	Stock Price 31-Dec-03	(d x e) Mkt Value Equity ($Millions)	Pfd Stock ($Millions)	L.T. Debt ($Millions)	Total Capital ($Millions)	Common Equity %	Pfd Stock %	L.T. Debt %
B+	Baa2	AT&T Corporation	789,873,024	20.30	16,034.4	0.0	12,759.0	28,793.4	55.688%	0.000%	44.312%
B+	NR	Commonwealth Tel.	23,966,085	37.75	904.7	0.0	325.3	1,230.0	73.553%	0.000%	26.447%
B+	NR	Net2Phone, Inc.	45,504,596	6.80	309.4	0.0	15.8	325.2	95.142%	0.000%	4.858%
B	Baa3	Sprint Corp. (FON Grp)	903,949,604	16.42	14,842.9	0.0	2,789.0	17,631.9	84.182%	0.000%	15.818%
B	NR	CT Communications	18,767,146	13.50	253.4	0.4	86.0	339.8	74.570%	0.118%	25.312%
B	NR	Talk America Holdings	26,406,864	11.52	304.2	0.0	59.5	363.7	83.641%	0.000%	16.359%
		Mean							77.796%	0.020%	22.184%
		Median							79.105%	0.000%	20.836%
		Weighted Average							67.063%	0.001%	32.936%
C+	Caa1	Qwest Comm. Int'l.	1,766,172,000	4.32	7,629.9	0.0	20,242.0	27,871.9	27.375%	0.000%	72.625%
C+	Caa3	Primus Telecomm. Grp.	65,521,195	10.16	665.7	46.7	517.1	1,229.5	54.144%	3.798%	42.058%
C+	Caa1	Time Warner Telecom	115,105,754	10.13	1,166.0	0.0	1,176.8	2,342.8	49.770%	0.000%	50.230%
C	Caa2	Level 3 Comm., Inc.	676,971,829	5.70	3,858.7	0.0	5,340.0	9,198.7	41.949%	0.000%	58.051%
C	Ca	Pac-West Telecomm,Inc	36,508,677	1.92	70.1	0.0	95.4	165.5	42.355%	0.000%	57.645%
		Mean							43.118%	0.760%	56.122%
		Median							42.355%	0.000%	57.645%
		Weighted Average							32.813%	0.114%	67.073%
		Excluding Qwest Comm. Int'l.									
		Mean							47.054%	0.950%	51.996%
		Median							46.063%	0.000%	53.937%
		Weighted Average							44.529%	0.361%	55.110%

NR: No rating
Source: Columns a, d, g - i were extracted from the January 2, 2004 Value Line; column b was extracted from the YE Dec. 2003 Moody's Investor Service. Column e was extracted from the December 31, 2003 Yahoo Finance closing stock prices.

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Wireless Companies

			Capital Structure		Rates of Return		**Basic Cap Rate**
SBE No.	**Company Name**	Rating	Common Equity	Debt	Common Equity	Debt	
2512	**Verizon Wireless (VAW) LLC**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2513	**Sacramento Valley Limited Partnership**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2532	**Los Angeles SMSA, Ltd. Partnership**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2559	**GTE Mobilnet of California, Ltd. Partnership**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2606	**AT&T Wireless Services of California, LLC**	NR-1	70%	30%	15.25%	7.02%	**12.78%**
2720	**Sprint Telephony PCS, L.P.**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2722	**Sprint Spectrum L.P.**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2737	**Nextel of California, Inc.**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2748	**Pacific Bell Wireless, LLC**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2755	**Southwestern Bell Mobile Systems, LLC**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2756	**Cingular Wireless, LLC**	NR-2	65%	35%	16.02%	7.27%	**12.96%**
2552	**Fresno MSA Limited Partnership**	NR-3	60%	40%	16.75%	7.53%	**13.06%**
2627	**GTE Mobilnet of Santa Barbara L.P.**	NR-3	60%	40%	16.75%	7.53%	**13.06%**
	Other Wireless Companies	NR-4	60%	40%	19.25%	7.78%	**14.66%**
	Wireless Reseller Companies	NR-5	60%	40%	22.25%	8.80%	**16.87%**

NR-1: Companies representing large wireless markets in California
NR-2: Companies representing large to midsize wireless markets in California
NR-3: Companies representing midsize wireless markets in California
NR-4: Other wireless carriers (including Radio Telephones)
NR-5: All wireless reseller companies

Industry Notes

- Staff relied on the Capital Asset Pricing Model in the development of equity rates. Consideration was given to both the ex post and ex ante risk premium.

- Consideration was given to size premiums in assigning equity rates to the smaller wireless companies.

- The Discounted Cash Flow model was not relied upon because a majority of the companies in the study are not currently paying dividends. In addition, the earnings growth projections may not be sustainable.

- Western Wireless was omitted from the sample due to a lack of sufficient financial information.

2004 Capitalization Rate Study
Wireless Companies
Flotation Cost Adjustment

	Equity			Bond			
Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate [2]	Flotation Cost in %	Adjusted Rate
NR-1	Note [1]		15.25%	Not Rated	6.90%	1.70%	7.02%
NR-2	15.30%	4.50%	16.02%	Not Rated	7.15%	1.70%	7.27%
NR-3	Note [1]		16.75%	Not Rated	7.40%	1.70%	7.53%
NR-4	Note [1]		19.25%	Not Rated	7.65%	1.70%	7.78%
NR-5	Note [1]		22.25%	Not Rated	8.65%	1.70%	8.80%

[1] Staff relied upon the Ex Post and Ex Ante Capital Asset Pricing Model (CAPM) estimating the recommended equity rates for NR-2 categories. Equity rates for the other non-rated categories (NR-1, NR-3, NR-4, NR-5) were extrapolated based on analyzing the relative risks of operating a wireless system within these categories.

[2] Staff reviewed bonds issued by a major wireless company with a presence in the major markets which revealed a bond rating of BBB. Based on this, staff concludes that a reasonable debt rate is 6.90%, with an increase in the rates for the smaller market categories.

Formula - Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs
f = Flotation cost as a percentage of the value of securities issued

2004 Capitalization Rate Study
Wireless Companies
Size Premium

Decile of the New York Stock Exchange	Equity Market Capitalization (in thousands)			Size Premium (Return in excess of CAPM)
1	over		11,366,767	-0.34
2	4,794,027	to	11,366,767	0.50
3	2,585,984	to	4,794,027	0.67
4	1,720,959	to	2,585,984	1.11
5	1,166,799	to	1,720,959	1.36
6	795,983	to	1,166,799	1.59
7	507,820	to	795,983	1.57
8	330,608	to	507,820	2.25
9	166,414	to	330,608	2.90
10	under		166,414	6.34

Source: SBBI:Valuation Edition 2004 Yearbook
Tables 2

2004 Capitalization Rate Study
Wireless Companies

Capital Asset Pricing Model - Ex Ante

Component	Industry Computation
Expected Future Return, S&P 500 [1]	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Ex-Ante Risk Premium	6.76%
Beta [3]	1.45
Adjusted Risk Premium	9.80%
Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Projected Return on Common Equity	14.96%

[1] Expected Future Return , S&P 500

Dividend Yield for S&P 500 - 12/31/03	1.63%
5 Year Projected Growth - First Call	10.29%
	11.92%

[2] From the Wall Street Journal 12/31/03 data

[3] Based on considering an average and weighted average relevered beta

2004 Capitalization Rate Study
Wireless Companies

Capital Asset Pricing Model - Ex Post

Component	Industry Computation
Common Stock Return (1926-2003) [1]	12.40%
Less: Income Return, L/T Government Bonds (1926-2003) [1]	5.20%
Ex-Post Risk Premium	7.20%
Beta [2]	1.45
Adjusted Risk Premium	10.44%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%
Projected Return on Common Equity	15.60%

[1] Ibbotson Associates, Inc. Study
[2] Based on considering an average and weighted average relevered beta.
[3] Wall Street Journal 12/31/03 data

2004 Capitalization Rate Study
Wireless Companies

Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Stock Price 12/31/03	2003 Earnings	2003 Dividends	2004 Estimated Dividends	2004 Div Yield (f/c)	2004 Est. Div Growth	2004 Avg. Erngs Growth	E/P Ratio (d/c)	Div Yld+ DvGwth (g+h)	DvYld+ ErnsGwth (g+i)
A	Alltel Corp.	46.58	3.05	1.42	1.49	3.20%	3.00%	6.47%	6.55%	6.20%	9.67%
B++	CenturyTel Inc	32.62	2.38	0.22	0.24	0.74%	12.00%	6.91%	7.30%	12.74%	7.64%
B	AT&T Wireless Group	7.99	0.23		NMF			21.95%	2.88%		21.95%
B	Telephone & Data Systems[1]	62.55	1.36	0.62	0.66	1.06%	5.50%	11.40%	2.17%	6.56%	12.46%
B	US Cellular	35.50	0.90		NMF			7.71%	2.54%		7.71%
B	Nextel Communications	28.06	1.35		NMF			15.80%	4.81%		15.80%
C+	Sprint PCS Group	5.62	0.43		NMF			18.10%	7.65%		18.10%
		Mean					6.83%	12.62%	4.84%	8.50%	13.33%
		Median					5.50%	11.40%	4.81%	6.56%	12.46%
		Weighted Average									15.84%

[1] Parent company of US Cellular.

Note: Based on dividend yield plus earnings growth, the range of rates indicates 7.64% to 21.95%. The DCF model was not relied upon because a majority of the companies available for inclusion in the study were not paying dividends. In addition, the reported earnings growth rates may not be sustainable.

Sources: Columns a, b, d, e, f, and h were obtained from Value Line.
Column c was obtained from the Wall Street Journal as of December 31, 2003.
Column i is an average of Value Line, Zacks, and Thomson.

2004 Capitalization Rate Study
Wireless Companies

Long-Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	Alltel Corp.	8.50%	5.50%	5.41%	6.47%
B++	CenturyTel Inc	12.50%	4.30%	3.92%	6.91%
B	AT&T Wireless Group	NMF	n/a	21.95%	21.95%
B	Telephone & Data Systems[1]	3.50%	14.50%	16.20%	11.40%
B	US Cellular	1.00%	n/a	14.41%	7.71%
B	Nextel Communications	NMF	18.40%	13.19%	15.80%
C+	Sprint PCS Group	NMF	18.70%	17.50%	18.10%
	Mean	6.38%	12.28%	13.23%	12.62%
	Median	6.00%	14.50%	14.41%	11.40%
	Weighted Average				15.26%

[1] Parent company of US Cellular.

2004 Capitalization Rate Study
Wireless Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poors Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
A	Alltel Corp.	1.00	0.86	0.91	0.92	0.39	0.75	0.06
B++	CenturyTel Inc	1.10	1.02	0.96	1.03	0.66	0.73	0.04
B	AT&T Wireless Group	1.45	n/a	n/a	1.45	0.50	1.12	0.12
B	Nextel Communications	1.80	2.04	2.23	2.02	0.35	1.67	0.11
B	Telephone & Data Systems	0.95	1.20	1.19	1.11	0.90	0.72	0.04
B	US Cellular	1.05	n/a	1.04	1.05	0.27	0.90	0.01
C+	Sprint PCS Group	1.65	3.25	n/a	2.45	2.54	0.97	0.38
C	Western Wireless	1.30	n/a	1.91	1.61	1.39	0.88	0.04
	Mean	1.29	1.67	1.37	1.45	0.87	0.97	
	Median	1.20	1.20	1.12	1.28		0.89	
	Weighted				1.65		1.15	0.79

	30%	40%
Relevered Beta using an average Beta and based on Debt Capital structure of: [2]	1.22	1.35
Relevered Beta using a weighted average Beta and based on Debt Capital structure of: [2]	1.45	1.62

Formulas:

[1] Unlevered Beta = Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = Unlevered Beta X [1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio

t is the tax rate (assumed to be 40%)

Debt Rate

Debt Rate - 6.90% for Major Markets

There was no known debt issuance close to the lien date from any pure wireless operator. However, a review of long-term bond yields as of the lien date for major wireless companies with a presence in the major markets revealed yields ranging from 6.76% to 6.99%, with a bond rating of BBB. Based on this, staff feels that a reasonable debt rate for similar companies should be 6.90%, with an increase in the rates for midsize and smaller companies.

Other Debt Rates Considered

Moody's Utility Bond Yield Average - 12/31/03 [1]	6.37%
Moody's Utility Bond Yield (Baa) - 12/31/03 [1]	6.65%
Standard & Poor's Bond Yield Index (BBB) - Nov. 2003 Average [2]	6.84%
Moody's Public Utility Bonds (Baa) - Nov. 2003 Average [3]	6.69%

[1] Obtained from Moodys.com Internet source as of 1/02/04.
[2] Obtained from Standard & Poor's 2003 Bond Guide.
[3] Obtained from Moody's Mergent Bond Record December 2003.

2004 Capitalization Rate Study
Wireless Companies

Capital Structure

a	b	c	d	e	f	g	h	i	j	k
		Common Equity			Preferred	Long-Term	Total	Ratios		
		Shares	Market	Total	Stock	Debt	Capital	Common	Preferred	Long-Term
Value Line		(Millions)	Value	($Millions)	($Millions)	($Millions)	($Millions)	Equity	Stock	Debt
Rating	Company Name		($)Per Share	(c*d)			(e+f+g)	(e/h)	(f/h)	(g/h)
A	Alltel Corp.	312.07	46.58	14,536.22	0.35	5,619.50	20,156.07	72.12%	0.00%	27.88%
B++	CenturyTel Inc	144.21	32.62	4,704.00	8.00	3,119.00	7,831.00	60.07%	0.10%	39.83%
B	AT&T Wireless Group	2,714.48	7.99	21,688.69	171.00	10,607.00	32,466.69	66.80%	0.53%	32.67%
B	Telephone & Data Systems[1]	57.44	62.55	3,592.87	6.60	3,233.80	6,833.27	52.58%	0.10%	47.32%
B	US Cellular	86.15	35.50	3,058.18		813.20	3,871.38	78.99%		21.01%
B	Nextel Communications	1,099.53	28.06	30,852.73	96.00	10,801.00	41,749.73	73.90%	0.23%	25.87%
C+	Sprint PCS Group	1,035.08	5.62	5,817.15	526.00	14,236.00	20,579.15	28.27%	2.56%	69.18%
C	Western Wireless	91.42	18.36	1,678.42		2,330.60	4,009.02	41.87%		58.13%
						Totals	137,496.31			
				Entire Sample Population:			Mean	59.32%	0.59%	40.24%
							Median	63.44%	0.17%	36.25%
							Weighted Average	62.49%	0.59%	36.92%
				Excluding Sprint PCS Group:			Mean	63.76%	0.19%	36.10%
							Median	66.80%	0.10%	32.67%
							Weighted Average	68.52%	0.24%	31.24%

[1] Parent company of US Cellular.

Sources: Columns a,c,f,g and h were obtained from Value Line dated January 02, 2004.
Column d (stock price) was obtained from Zacks and the Wall Street Journal as of December 31, 2003.

2004 Capitalization Rate Study
Wireless Companies

Comparison of Wireless Companies for Lien Dates 2003 and 2004

	2003					2004					Differences				
Rating	Common Equity Rate	Capital Structure %	Debt Rate	Capital Structure %	Basic Cap Rate	Common Equity Rate	Capital Structure %	Debt Rate	Capital Structure %	Basic Cap Rate	Common Equity Rate	Capital Structure %	Debt Rate	Capital Structure %	Basic Cap Rate
NR-1	13.39%	70%	7.88%	30%	11.74%	15.25%	70%	7.02%	30%	12.78%	1.86%	0%	-0.86%	0%	1.05%
NR-2	14.14%	65%	8.14%	35%	12.04%	16.02%	65%	7.27%	35%	12.96%	1.88%	0%	-0.86%	0%	0.92%
NR-3	14.75%	60%	8.39%	40%	12.21%	16.75%	60%	7.53%	40%	13.06%	2.00%	0%	-0.86%	0%	0.86%
NR-4	17.25%	60%	8.65%	40%	13.81%	19.25%	60%	7.78%	40%	14.66%	2.00%	0%	-0.86%	0%	0.85%
NR-5	20.25%	60%	9.66%	40%	16.02%	22.25%	60%	8.80%	40%	16.87%	2.00%	0%	-0.86%	0%	0.85%

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Pipeline Companies

		Ratings		Capital Structure		Rates of Return		**Basic**
		Common		Common				**Cap**
SBE No.	**Company Name**	Equity	Bond	Equity	Debt	Equity	Debt	**Rate**
461	**SFPP, L.P.**	B+	Baa	70%	30%	13.09%	6.73%	11.18%
402	**CALNEV Pipe Line LLC**	NR-1	NR-b	70%	30%	13.09%	6.73%	11.18%
465	**All American Pipeline, L.P.**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
479	**Chevron Pipeline Company**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
468	**Shell California Pipeline Company L.P.**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
486	**Pacific Pipeline System, LLC**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
480	**Unocap**	NR-2	NR-b	70%	30%	13.61%	6.73%	11.55%
	Other Pipeline Companies	NR-3	NR-c	70%	30%	14.66%	7.75%	12.59%

Industry Notes

- Staff relied primarily on the Discounted Cash Flow model in the development of equity rates.

- In assigning equity rates to smaller pipeline companies, the size premium information from Ibbotson and Associates was considered.

- In prior years, staff has adjusted SFPP's equity rate to reflect the risks of adverse settlements to ongoing revenue rate cases. The equity rate adjustment was not made this year. Any adjustment to reflect the uncertainty of maintaining the projected revenue stream will be made to either the rate of return or the projected income within the appraisal based on evidence submitted by the assessee.

2004 Capitalization Rate Study
Pipeline Companies

Flotation Cost Adjustment

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B+	12.50%	4.50%	13.09%	Baa	6.62%	1.70%	6.73%
NR-1	12.50%	4.50%	13.09%	NR-b	6.62%	1.70%	6.73%
NR-2	13.00%	4.50%	13.61%	NR-c	7.62%	1.70%	7.75%
NR-3	14.00%	4.50%	14.66%				

Formula - Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs
f = Flotation cost as a percentage of the value of securities issued

NR-1 Not Rated-1 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting refined petroleum products.
NR-2 Not Rated-2 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting crude oil.
NR-3 Not Rated-3 pipelines are smaller companies transporting petroleum products or crude oil.
NR-b Although these companies do not have rated debt securities, the rating class "Baa" was chosen to represent these subsidiaries of larger corporations.
NR-c: Issues of this size are not normally rated. An additional increment of 100 basis points (before flotation costs) has been added to the "Baa" rate.

2004 Capitalization Rate Study
Pipeline Companies
Summary of Return on Common Equity

Description	2004	2003	Change
E/P Ratio - Mean	4.70%	6.49%	-1.79%
E/P Ratio - Median	4.06%	6.67%	-2.61%
Dividend Yield + Dividend Growth - Mean	12.20%	14.79%	-2.59%
Dividend Yield + Dividend Growth - Median	12.58%	15.04%	-2.46%
Dividend Yield + Earnings Growth - Mean	12.08%	14.82%	-2.74%
Dividend Yield + Earnings Growth - Median	11.33%	14.28%	-2.95%
Capital Asset Pricing Model (CAPM) - Ex Ante	7.32%	8.07%	-0.75%
Capital Asset Pricing Model (CAPM) - Ex Post	7.46%	7.46%	0.00%

2004 recommended equity rates:

12.50% for Common Carrier product lines
13.00% for Common Carrier crude oil lines
14.00% for all other pipelines

2004 Capitalization Rate Study
Pipeline Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Stock Price 01/01/04	2003 Earnings	2003 Dividends	2004 Est Div	2004 Dividend Yield	2004 Hist. Div Growth	2004 Avg. Erns Growth	E/P Ratio (d/c)	Div Yld+ Div Gwth (g+h)	Div Yld+ Erns Gwth (g+i)
B+	Buckeye Partners, L.P.	45.35	2.60	2.54	2.59	5.71%	1.50%	5.60%	5.73%	7.21%	11.31%
B++	Enbridge Energy	49.90	1.99	3.63	3.70	7.41%	5.50%	0.86%	3.99%	12.91%	8.27%
B++	Kaneb Pipe Line Partners	50.80	2.91	3.16	3.25	6.40%	5.00%	4.93%	5.73%	11.40%	11.33%
B+	Kinder Morgan Energy Partners, L.P.	49.27	2.00	2.63	2.90	5.89%	11.00%	10.17%	4.06%	16.89%	16.05%
B	TEPPCO Partners, L.P.	40.30	1.60	2.50	2.65	6.58%	6.00%	6.83%	3.97%	12.58%	13.41%
		Mean					5.80%	5.68%	4.70%	12.20%	12.08%
		Median					5.50%	5.60%	4.06%	12.58%	11.33%
		Weighted Average									13.72%

Columns a, d, e, f, and h were extracted from Value Line.

Column c was extracted from the Yahoo Market Guide.

Column i is an average of Value Line, Zacks, and Thomson.

2004 Capitalization Rate Study
Pipeline Companies
Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B+	Buckeye Partners, L.P.	6.00%	6.20%	4.60%	5.60%
B++	Enbridge Energy	-10.00%	6.80%	5.78%	0.86%
B++	Kaneb Pipe Line Partners	4.00%	5.00%	5.80%	4.93%
B+	Kinder Morgan Energy Partners, L.P.	11.00%	9.50%	10.00%	10.17%
B	TEPPCO Partners, L.P.	6.50%	6.50%	7.50%	6.83%
	Mean	3.50%	6.80%	6.74%	5.68%
	Median	6.00%	6.50%	5.80%	5.60%
	Weighted Average				7.46%

2004 Capitalization Rate Study
Pipeline Companies

Capital Asset Pricing Model - Ex Ante

Component	Industry Computation
Expected Future Return, S&P 500 [1]	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Risk Premium	6.76%
Beta [3]	0.32
Adjusted Risk Premium	2.16%
Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Projected Return on Common Equity	7.32%

[1] Dividend Yield for S&P 500@12/31/2003	1.63%
5 Year projected growth per First Call	10.29%
Expected future Return, S&P 500	11.92%

[2] Wall Street Journal 12/31/2003 data

[3] Weighted average using betas from Value Line, Zacks, and Standard & Poor for a representative sample of pipeline companies.

2004 Capitalization Rate Study

Pipeline Companies

Capital Asset Pricing Model - Ex Post

Component	Industry Computation
Common Stock Return (1926 - 2003) [1]	12.40%
Less: Long Term Government Bonds [1]	5.20%
Risk Premium	7.20%
Beta [2]	0.32
Adjusted Risk Premium	2.30%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%
Projected Return on Common Equity	7.46%

[1] Ibbotson Associates Study

[2] Weighted average using betas from Value Line, Zacks, and Standard & Poor for a representative sample of pipeline companies.

[3] Wall Street Journal 12/31/2003 data

2004 Capitalization Rate Study
Pipeline Companies
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zack Beta	Standard & Poor's Beta	Average Beta	Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
B+	Buckeye Partners, L.P.	0.60	0.10	n/a	0.35	0.34	0.29	0.06
B++	Kaneb Pipe Line Partners	0.55	0.11	0.08	0.25	0.40	0.20	0.04
B+	Kinder Morgan Energy Partners, L.P.	0.65	0.34	0.27	0.42	0.42	0.34	0.04
B	TEPPCO Partners, L.P.	0.60	0.18	0.13	0.30	0.54	0.23	0.35
	Mean	0.60	0.18	0.16	0.33	0.42	0.26	
	Median	0.60	0.15	0.13	0.33		0.26	
	Weighted Average				0.32		0.25	0.48

Relevered beta based on 30% Debt Capital Structure 0.33 [2]

Relevered beta based on 30% Debt Capital Structure and a weighted average beta 0.31 [2]

Formulas:

[1] Unlevered beta = beta/[1+(1-t)(D/E)]

[2] Relevered beta = Unlevered beta X [1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio

t is the tax rate (assumed to be 40%)

Enbridge Energy was removed because no meaningful beta information was available from Zacks and Standard and Poors.

2004 Capitalization Rate Study
Pipeline Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Moody Bond Rating	Company Name	Partnership Units Outstanding (000)	Unit Price 12/31/03	Market Value Equity (000)	Market Value Preferred (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Preferred %	Equity %
B+	N/R	Buckeye Partners, L.P.	28,957	45.35	1,313,182	0	450,000	1,763,182	25.52%	0.00%	74.48%
B++	N/R	Enbridge Energy	48,945	49.90	2,442,336	0	1,277,700	3,720,036	34.35%	0.00%	65.65%
B++	N/R	Kaneb Pipe Line Partners	28,318	50.80	1,438,534	0	579,900	2,018,434	28.73%	0.00%	71.27%
B+	N/R	Kinder Morgan Energy Partners, L.P.	187,813	49.27	9,253,547	0	3,855,800	13,109,347	29.41%	0.00%	70.59%
B	N/R	TEPPCO Partners, L.P.	62,999	40.30	2,538,844	0	1,360,600	3,899,444	34.89%	0.00%	65.11%
		Total			16,986,442	0	7,524,000	24,510,442			
		Mean							30.58%	0.00%	69.42%
		Median							29.41%	0.00%	70.59%
		Weighted Average							30.70%	0.00%	69.30%

Recommended Capital Structure for Common Carrier Pipelines for Lien Date 01/01/04 is: **Debt 30%**
Equity 70%

Source:

Columns a, d, g, and h were extracted from Value Line.

Column b was extracted from the 2003 Moody's Public Utility and Industrial Manuals.

Column e was extracted from the Yahoo Market Guide.

2004 Capitalization Rate Study
Pipeline Companies
Debt Yield Rate

Average of Industrial and Public Utility Bond Yield:			
Aa	Industrial/Utility Average	6.020%	
A	Industrial/Utility Average	6.200%	
		6.020%	Aa
		6.200%	A
Baa	Industrial/Utility Average	6.620%	
	Recommended	6.620%	Baa/Ba

Bond Rating	Industrial	Public Utility	2003 Average
Aaa	5.640%	N/A	5.640%
Aa	5.850%	6.190%	6.020%
A	6.120%	6.280%	6.200%
Baa	6.590%	6.650%	6.620%

2004 Capitalization Rate Study
Pipeline Companies
Size Premium

Decile of the New York Stock Exchange	Equity Market Capitalization (in thousands)			Size Premium (Return in excess of CAPM)
1	over		11,366,767	-0.34
2	4,794,027	to	11,366,767	0.50
3	2,585,984	to	4,794,027	0.67
4	1,720,959	to	2,585,984	1.11
5	1,166,799	to	1,720,959	1.36
6	795,983	to	1,166,799	1.59
7	507,820	to	795,983	1.57
8	330,608	to	507,820	2.25
9	166,414	to	330,608	2.90
10	under		166,414	6.34

Source: SBBI:Valuation Edition 2004 Yearbook
Tables 2

California State Board of Equalization
Valuation Division
2004 Capitalization Rate Study

Railroads

		Ratings		Capital Structure		Rates of Return		
SBE No.	**Company Name**	Common Equity	Bond	Common Equity	Debt	Common Equity	Debt	**Basic Cap Rate**
804	**Burlington Northern & Santa Fe Railroad Co.**	B+	Baa2	66%	34%	13.25%	6.73%	**11.03%**
843	**Union Pacific Railroad Company**	B+	Baa2	66%	34%	13.25%	6.73%	**11.03%**
802	**Central Oregon & Pacific Railroad**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
810	**California Northern Railroad**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
813	**Pacific Harbor Lines**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
850	**Modesto & Empire Traction Company**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
865	**San Diego & Imperial Valley Railroad Co. Inc.**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
882	**Trona Railway Co.**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
897	**San Joaquin Valley Railroad Company**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
899	**Arizona & California Railroad**	NR-1	NR-1	60%	40%	15.34%	8.26%	**12.51%**
	Other Railroad Companies	NR-2	NR-2	60%	40%	15.60%	9.28%	**13.07%**

Industry Notes

- Staff relied upon the results of the following models in the development of equity rates:

    1. Discounted Cash Flow analysis
    2. Capital Asset Pricing Model - Consideration was given to both the ex post and ex ante risk premiums

- Assessee submitted information supporting the position that Zack's and Standard and Poor's betas for Class 1 railroads understated risk over the five-year measurement period. The submitted information was considered with the Value Line beta in establishing the rate of return estimate for the Capital Asset Pricing Model.

- In recognition of the declining reliance on Equipment Trust Certificates to finance railroad rolling stock, the debt portion of the projected capital structure is solely comprised of unsecured bonds.

2004 Capitalization Rate Study
Railroad Companies

Flotation Cost Adjustment

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost In %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost In %	Adjusted Rate
B+	12.65%	4.50%	13.25%	Baa2[1]	6.62%	1.70%	6.73%
NR-1	14.65%	4.50%	15.34%	NR-1[2]	8.12%	1.70%	8.26%
NR-2	14.90%	4.50%	15.60%	NR-2[3]	9.12%	1.70%	9.28%

Formula - Cost of Capital Adjusted for Flotation Costs

$$\frac{k_u}{1 - f}$$

Where k_u = The cost of capital unadjusted for flotation costs
f = Flotation cost as a percentage of the value of securities issued

[1] Baa2 rate was interpolated by applying the difference between the average of Moody's A3 and Baa1 bond rates.

[2] N/R-1: Represent short line railroad companies with stable historical income. An additional 150 basis points (1.5%) were added to Baa2 bond rate to represent the additional risk premium.

[3] N/R-2: Represent short line railroad companies without stable historical income patterns. An additional 250 basis points (2.5%) we added to the Baa2 bond rate to represent the additional risk premium.

2004 Capitalization Rate Study
Railroad Companies

Equity Rates 2004 vs. 2003

Description	2004	2003	Change
E/P Ratio - Mean	6.87%	7.94%	-1.07%
E/P Ratio - Median	6.93%	8.14%	-1.21%
Dividend Yield + Dividend Growth - Mean	5.14%	-0.48%	5.62%
Dividend Yield + Dividend Growth - Median	4.35%	1.17%	3.18%
Dividend Yield + Earnings Growth - Mean	12.65%	13.98%	-1.33%
Dividend Yield + Earnings Growth - Median	12.92%	14.89%	-1.97%
Capital Asset Pricing Model - Ex post	12.00%	11.87%	0.13%
Capital Asset Pricing Model - Ex ante	11.58%	13.52%	-1.94%

2004 Capitalization Rate Study
Railroad Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/03	Est Erns Value Line 2004	Earnings 2003	Dividends 2003	Est Div 2004	Div Yield 2004 (g/c)	ValueLine Dividend Est Gwth	Average Est Erns Gwth	E/P Ratio (d/c)	Div Yld + Dv Gwth (h+i)	Dv Yld + Erns Gwth (h+j)
Class 1 Railroads:												
B+	Burlington Northern	32.35	2.35	2.05	0.51	0.60	1.85%	7.50%	8.51%	7.26%	9.35%	10.36%
B++	CSX	35.94	2.50	1.90	0.40	0.40	1.11%	-2.00%	13.29%	6.96%	-0.89%	14.40%
B	Norfolk Southern Corp	23.65	1.50	1.27	0.30	0.32	1.35%	-2.00%	12.59%	6.34%	-0.65%	13.95%
B+	Union Pacific	69.48	4.80	4.05	0.92	1.20	1.73%	11.00%	10.17%	6.91%	12.73%	11.90%
				Mean			1.51%	3.63%	11.14%	6.87%	5.14%	12.65%
				Median			1.54%	2.75%	11.38%	6.93%	4.35%	12.92%
				Weighted Average							6.47%	12.42%

Source:

Columns a, d - g, i, were extracted from Value Line.

Column c was extracted from the Yahoo Market Guide.

2004 Capitalization Rate Study
Railroad Companies

Long Term Earnings Growth

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
Class 1 Railroads:					
B+	Burlington Northern	7.50%	8.60%	9.42%	8.51%
B++	CSX	16.00%	11.40%	12.46%	13.29%
B	Norfolk Southern Corp	14.50%	11.70%	11.58%	12.59%
B+	Union Pacific	8.50%	10.30%	11.72%	10.17%
	Mean	11.63%	10.50%	11.30%	11.14%
	Median	11.50%	10.85%	11.65%	11.38%
	Weighted Average				10.86%

2004 Capitalization Rate Study
Railroad Companies
Capital Asset Pricing Model - Ex Ante

Component	Industry Computation
Expected Future Return, S&P 500 [1]	11.92%
Less: Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Risk Premium	6.76%
Beta [3]	0.95
Adjusted Risk Premium	6.42%
Risk Free Return 25 - 30 Year Treasury Bonds [2]	5.16%
Projected Return on Common Equity	11.58%

[1] Dividend yield for S&P 500 @ 12/31/2003	1.63%
5 year projected growth per First Call	10.29%
Expected Future Return, S&P 500	11.92%

[2] Wall Street Journal 12/31/2003 data

[3] Assessee submitted information supporting the position that Zack's and Standard and Poor's betas for Class 1 railroads understated risk over the five-year measurement period. The submitted information was considered with the Value Line beta in establishing the rate of return estimate for the Capital Asset Pricing Model.

2004 Capitalization Rate Study
Railroad Companies

Capital Asset Pricing Model - Ex Post

Component	Industry Computation
Common Stock Return (1926 - 2003) [1]	12.40%
Less: Long Term Government Bonds [1]	5.20%
Risk Premium	7.20%
Beta [2]	0.95
Adjusted Risk Premium	6.84%
Risk Free Return 25 - 30 Year Treasury Bonds [3]	5.16%
Projected Return on Common Equity	12.00%

[1] Ibbotson Associates Study

[2] Assessee submitted information supporting the position that Zack's and Standard and Poor's betas for Class 1 railroads understated risk over the five-year measurement period. The submitted information was considered with the Value Line beta in establishing the rate of return estimate for the Capital Asset Pricing Model.

[3] Wall Street Journal 12/31/2003 data

2004 Capitalization Rate Study
Railroad Companies
Beta Analysis

a	b	c	d	e	f		g	h	i
Value Line Rating	Company Name	Value Line Beta	Zack's Beta	Standard & Poor's Beta	Average Beta		Debt Equity Ratio	Unlevered Beta [1]	WTG Avg Debt/Equity Ratio
Class 1 Railroads:									
B+	Burlington Northern	0.90	0.50	0.54	0.65		0.57	0.48	0.14
B++	CSX	1.00	0.49	0.59	0.69		0.84	0.46	0.16
B	Norfolk Southern Corp	1.05	0.45	0.43	0.64		0.74	0.45	0.16
B+	Union Pacific	0.90	0.44	0.42	0.59		0.48	0.45	0.17
	Mean	0.96	0.47	0.50	0.64		0.66	0.46	
	Median	0.95	0.47	0.49	0.65			0.46	
	Weighted Average				0.63			0.46	0.63
	Relevered Beta based on 34% Debt Capital Structure					0.60 [2]			
	Relevered Beta based on 34% Debt Capital Structure and a weighted average Beta					0.60 [2]			
Non-Class 1 Railroads:									
B	Genesee and Wyoming	0.90	0.43	0.42	0.58		0.27	0.50	0.11
C++	Rail America	0.85	N/A	N/A	0.85		1.40	0.46	0.84
	Mean	0.88	0.43	0.42	0.72		0.84	0.48	
	Median	0.88	0.43	0.42	0.72			0.48	
	Weighted Average				0.74			0.48	0.95
	Relevered Beta based on 40% Debt Capital Structure					0.67 [2]			
	Relevered Beta based on 40% Debt Capital Structure and a weighted average Beta					0.67 [2]			

<u>Formulas:</u>

[1] Unlevered Beta = Beta/[1+(1-t)(D/E)]

[2] Relevered Beta = Unlevered Beta X [1+(1-t)(D/E)]

Where: D/E is the debt to equity ratio

t is the tax rate (assumed to be 40%)

2004 Capitalization Rate Study
Railroad Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Moody Bond Rating	Company Name	Common Stock Outstanding (000)	Common Stock Price 12/31/03	Market Value Equity (000)	Preferred Stock (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Preferred Stock %	Common Equity %
Class 1 Railroads:											
B+	Baa2	Burlington Northern	371,220	32.35	12,008,967	0	6,826,000	18,834,967	36.24%	0.00%	63.76%
B++	Baa2	CSX	214,019	35.94	7,691,843	0	6,480,000	14,171,843	45.72%	0.00%	54.28%
B	Baa1	Norfolk Southern Corp	390,419	23.65	9,233,409	0	6,823,000	16,056,409	42.49%	0.00%	57.51%
B+	Baa2	Union Pacific	255,182	69.48	17,730,045	500,000	8,058,000	26,288,045	30.65%	1.90%	67.45%
		Total						75,351,265			
						Mean			38.78%	0.48%	60.75%
						Median			39.37%	0.00%	60.63%
						Weighted Average			37.41%	0.66%	61.93%
Non-Class 1 Railroads:											
B	NR	Genesee and Wyoming	15,017	31.50	473,036	24,000	105,800	602,836	17.55%	3.98%	78.47%
C++	NR	Rail America	31,797	11.80	375,205	0	524,600	899,805	58.30%	0.00%	41.70%
		Total						1,502,640			
						Mean			37.93%	1.99%	60.08%
						Median			37.93%	1.99%	60.08%
						Weighted Average			41.95%	1.60%	56.45%

Recommended Capital Structures for lien date 1/1/04 are:	Equity	Debt
Class 1 Railroads:	66%	34%
Non-Class 1 Railroads:	60%	40%

Notes:
Staff believes that the capital structure indicated at the upper end of the equity range of the sample companies would most likely reflect the equity vs. debt expectation of a prospective purchaser in light of the current market conditions facing the railroads.

2004 Capitalization Rate Study
Railroad Companies

Interpolation of Utility Bond and Preferred Stock Yields

Yield Increment from Moody Average Bond Ratings			
a	b	c	d
Moody Average Rating	Moody Average Bond Yield	Number of Increments	Incremental Increase *(b/c)*
Aa = Aa2	6.02%		
A = A2	6.20%		
Difference	0.18%	3	0.06%
A = A2	6.20%		
Baa = Baa2	6.62%		
Difference	0.42%	3	0.14%

Interpolated Railroad Bond Yield			
a	b	c	d
Moody Average Rating	Moody Average Bond Yield	Incremental Increase	Interpolated Bond Yield
Aa2	6.020%		6.02%
Aa3		0.06%	6.08%
A1		0.06%	6.14%
A2	6.200%		6.20%
A3		0.14%	6.34%
Baa1		0.14%	6.48%
Baa2	6.620%		6.62%
Baa3		0.14%	6.76%

2004 Capitalization Rate Study
Railroad Companies
Debt Yield Rates

Bond Rating	Industrial	Public Utility	2003 Average
Aaa	5.64%	NA	5.64%
Aa	5.85%	6.19%	6.02%
A	6.12%	6.28%	6.20%
Baa	6.59%	6.65%	6.62%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages on 12/31/2003