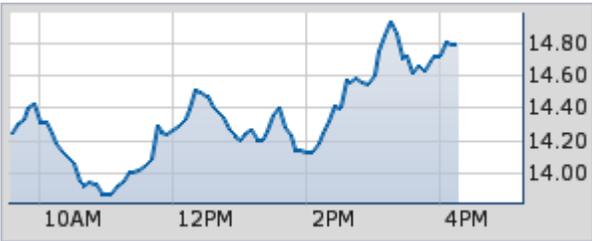


2014 Capitalization Rate Study



Property and Special Taxes Department
David J. Gau, Deputy Director

State-Assessed Properties Division
John K. Thompson, Chief

Lien Date 2014

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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 reliability 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%
						<hr/>
Weighted Average Cost of Capital						10.5%
						<hr/> <hr/>

¹ Assessors’ Handbook 501, Basic Appraisal, Revised January 2002

Executive Summary

This booklet contains a study for each of the major state assessee industry groups² in California. Industry data was compiled by groups with similar Value Line financial ratings. Local exchange, wireless and interexchange industries have been combined into one telecommunications study.

Generally accepted 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 anticipate if a property purchase decision was made. The rates chosen are the result of analysis of economic conditions and financial data listed in the supporting schedules and are the product of the staff's informed judgment.

The rates derived in this study are basic capitalization (or discount) rates that represent the after-tax 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 assesses 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. In cases where rate-base regulated companies have embedded debt with rates higher than the market rates at the lien date, a revenue adjustment may be indicated in order to match the revenue expected by a prospective purchaser if the purchaser's revenue would be determined by those market rates.

² Gas, Electric & Water; Natural Gas Transmission; Electric Generation; Telecommunications (Local Exchange, Interexchange, Wireless); Pipeline; Railroad

Executive Summary

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 assessees that are subsidiaries of a holding company, staff must rely, in great part, upon market data related to the holding company.

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 of CAPM, the most sensitive component affecting the outcome is the estimate of the beta³ coefficient. 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, three betas were obtained from 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. However, the average beta for highly regulated industries, such as gas or electric transmission and distribution, tend to understate the risk inherent in those securities. Accordingly, 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. Much like loan fees or points on a mortgage, flotation costs effectively reduce the net proceeds that a firm will receive from issuing securities. The cost of capital is adjusted upward to reflect the expected flotation costs incurred to issue 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. Utilization of Other Studies and Data

Staff appraisers reviewed data and capitalization rate studies submitted by assessees and interested parties in addition to a review of recent regulatory rate case filings and decisions, and where appropriate, used this information 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.

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

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
Gas and Electric Companies											
141	San Diego Gas & Electric Company	A		Aa3	52%	3%	45%	10.79%	6.33%	4.95%	8.03%
135	Pacific Gas and Electric Company	B++		A3	52%	1%	47%	10.89%	6.33%	5.26%	8.20%
148	Southern California Edison Company	B+	Baa2	A1	52%	4%	44%	10.94%	6.33%	5.04%	8.16%
146	Sierra Pacific Power Company	B		Baa1	52%	1%	47%	11.52%	7.04%	5.54%	8.67%
106	PacifiCorp	Not Rated		A2	52%	1%	47%	11.52%	7.04%	5.12%	8.46%
125	Terra-Gen Dixie Valley, LLC	Not Rated		Not Rated	51%		49%	11.52%		5.54%	8.59%
163	California Pacific Electric Co., LLC	Not Rated		Not Rated	51%		49%	11.52%		5.54%	8.59%
191	Arizona Public Service Company	Not Rated		Baa1	51%		49%	11.52%		5.54%	8.59%
119	Trans Bay Cable LLC	Not Rated		Not Rated	50%		50%	14.14%		5.54%	9.84%
156	DATC Path 15, LLC	Not Rated		Not Rated	50%		50%	14.14%		5.54%	9.84%
	Electric Cooperatives	Not Rated		Not Rated	51%		49%	11.52%		5.54%	8.59%
Natural Gas Distribution and Storage Companies											
149	Southern California Gas Company	A		Aa3	52%	2%	46%	10.58%	6.10%	5.40%	8.11%
152	Southwest Gas Corporation	B++		Baa1	52%		48%	10.89%		5.54%	8.32%
192	Alpine Natural Gas Operating Compan	Not Rated		Not Rated	51%		49%	12.30%		5.69%	9.06%
194	West Coast Gas Company, Inc.	Not Rated		Not Rated	51%		49%	12.30%		5.69%	9.06%
104	Central Valley Gas Storage LLC	Not Rated		Not Rated	60%		40%	14.14%		6.68%	11.16%
121	Gill Ranch Storage, LLC	Not Rated		Not Rated	60%		40%	14.14%		6.68%	11.16%
195	Wild Goose Storage, LLC	Not Rated		Not Rated	60%		40%	14.14%		6.68%	11.16%
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	60%		40%	14.14%		6.68%	11.16%
Water Company											
101	Golden State Water Company	B++		Not Rated	55%		45%	11.52%		5.85%	8.97%

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
187	Mojave Pipeline Company, LLC	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
189	Standard Pacific Gas Line, Incorporated	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
197	El Paso Pipeline Partners, L.P.	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate ³
	Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Modern Electric Generation Technology¹	B	B2	60%	40%	13.61%	7.12%	11.02%
Older Electric Generation Technology²	B	B2	60%	40%	15.71%	8.14%	12.68%

¹ Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

² Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

³ Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Local Exchange Companies								
279	Pacific Bell Telephone Company	A++	A2	70%	30%	12.25%	4.91%	10.05%
201	Verizon California, Inc.	A++	A3	70%	30%	12.25%	5.06%	10.09%
284	Citizens Telecommunications Company of California, Inc.	B	Not Rated	65%	35%	13.30%	5.48%	10.56%
294	SureWest Telephone	C++	Not Rated	65%	35%	13.30%	5.48%	10.56%
	Other Local Exchange Companies	Not Rated	Not Rated	65%	35%	15.65%	5.63%	12.14%
Wireless Companies								
2606	AT&T Mobility LLC	A++	A2	70%	30%	11.73%	4.91%	9.68%
2532	Los Angeles SMSA Ltd., Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2552	Fresno MSA Limited Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2559	Cellco Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2669	California RSA #4 Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2748	T-Mobile West Corporation	B	Not Rated	65%	35%	13.04%	5.63%	10.44%
2720	Sprint Telephony PCS, L.P.	C++	B3	65%	35%	14.87%	6.34%	11.88%
	Other Wireless Companies ¹	Not Rated	Not Rated	55%	45%	16.96%	7.86%	12.87%
	Wireless Reseller Companies	Not Rated	Not Rated	55%	45%	19.06%	8.37%	14.25%
Interexchange Companies								
2310	AT&T Communications	A++	A2	70%	30%	13.04%	4.91%	10.60%
2274	MCI Communications Services, Inc.	A++	A3	70%	30%	13.04%	5.06%	10.64%
2372	MCI Metro Access Transmission Services, LLC	A++	A3	70%	30%	13.04%	5.06%	10.64%
2463	CenturyLink, Inc.	B+	Baa3	65%	35%	14.61%	5.48%	11.41%
7522	tw telecom of california l.p.	B	B1	65%	35%	14.61%	6.05%	11.61%
2014	Sprint Communications Company, L.P.	C++	B3	60%	40%	16.96%	6.34%	12.71%
7761	Level 3 Communications, LLC	C++	Caa2	60%	40%	16.96%	7.86%	13.32%
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	21.68%	7.86%	15.46%
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	24.82%	8.37%	17.42%

¹ Includes Radio Telephone and Paging Companies

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
402	CALNEV Pipe Line, L.L.C.	NR-1	NR-b	70%	30%	12.30%	5.46%	10.25%
461	SFPP, L.P.	NR-1	NR-b	70%	30%	12.30%	5.46%	10.25%
479	Chevron Pipe Line Company	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
480	Phillips 66 Pipeline LLC	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
486	Pacific Pipeline System LLC	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
492	San Pablo Bay Pipeline Company LLC	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
	Other Pipeline Companies	NR-3	NR-c	70%	30%	13.87%	6.48%	11.66%

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Railroad Companies**

SBE No.	Company Name	Capital Structure				Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
804	BNSF Railway Company	A+	Baa2	80%	20%	13.61%	5.46%	11.98%
843	Union Pacific Railroad Company	A+	Baa2	80%	20%	13.61%	5.46%	11.98%
802	Central Oregon & Pacific Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
810	California Northern Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
813	Pacific Harbor Lines	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
822	Pacific Sun Railroad, LLC	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
826	Sacramento Valley Railroad, LLC	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
850	Modesto & Empire Traction Company	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
865	San Diego & Imperial Valley Railroad Co. Inc.	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
878	Stockton Terminal and Eastern Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
882	Trona Railway Co.	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
897	San Joaquin Valley Railroad Company	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
899	Arizona & California Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
	Other Railroad Companies	NR-2	NR-2	60%	40%	15.97%	8.01%	12.78%

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
Gas and Electric Companies											
141	San Diego Gas & Electric Company	A		Aa3	52%	3%	45%	10.79%	6.33%	4.95%	8.03%
135	Pacific Gas and Electric Company	B++		A3	52%	1%	47%	10.89%	6.33%	5.26%	8.20%
148	Southern California Edison Company	B+	Baa2	A1	52%	4%	44%	10.94%	6.33%	5.04%	8.16%
146	Sierra Pacific Power Company	B		Baa1	52%	1%	47%	11.52%	7.04%	5.54%	8.67%
106	PacifiCorp	Not Rated		A2	52%	1%	47%	11.52%	7.04%	5.12%	8.46%
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191	Arizona Public Service Company	Not Rated		Baa1	51%		49%	11.52%		5.54%	8.59%
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152	Southwest Gas Corporation	B++		Baa1	52%		48%	10.89%		5.54%	8.32%
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104	Central Valley Gas Storage LLC	Not Rated		Not Rated	60%		40%	14.14%		6.68%	11.16%
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195	Wild Goose Storage, LLC	Not Rated		Not Rated	60%		40%	14.14%		6.68%	11.16%
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	60%		40%	14.14%		6.68%	11.16%
Water Company											
101	Golden State Water Company	B++		Not Rated	55%		45%	11.52%		5.85%	8.97%

**2014 Capitalization Rate Study
Gas, Electric and Water Companies
Industry Notes**

- In establishing the capital structures for the rate-regulated utilities, staff considered the decisions of the California Public Utilities Commission (CPUC). For the non-rate-regulated utilities, the capital structures were developed based on the financial data collected and the relative risks of the utilities sampled in the Capitalization Rate Study.
- Staff considered the following in the development of equity rates:
 1. CPUC-authorized rates of return
 2. FERC-authorized rates of return
 3. Discounted Cash Flow Model
 4. Capital Asset Pricing Model – ex post and ex ante risk premiums
- Staff considered the following in the development of debt rates:
 1. Moody’s Utility Bond Yield Spreads
 2. The debt rates that a prospective purchaser would expect at lien date
- The following utilities were added to the 2014 Capitalization Rate Study sample:
 1. Pepco Holdings, Inc.
 2. York Water Co.
- The following utilities were removed from the 2014 Capitalization Rate Study sample:
 1. CH Energy Group, Inc. was acquired by Fortis Inc., which is traded on the Toronto Stock Exchange.
 2. NV Energy, Inc. merged into MidAmerican Energy Holdings Company, which is privately owned.

**2014 Capitalization Rate Study
Gas and Electric Companies
Flotation Cost Adjustment**

Equity				Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A	10.30%	4.50%	10.79%	A	6.22%	1.70%	6.33%	Aa3	4.87%	1.70%	4.95%
B++	10.40%	4.50%	10.89%	B++	6.22%	1.70%	6.33%	A1	4.95%	1.70%	5.04%
B+	10.45%	4.50%	10.94%	B+	6.22%	1.70%	6.33%	A2	5.03%	1.70%	5.12%
B	11.00%	4.50%	11.52%	B	6.92%	1.70%	7.04%	A3	5.17%	1.70%	5.26%
Not Rated	11.00%	4.50%	11.52%	Not Rated	6.92%	1.70%	7.04%	Baa1	5.31%	1.70%	5.40%
Not Rated	13.50%	4.50%	14.14%					Baa2	5.45%	1.70%	5.54%
								Baa3	5.59%	1.70%	5.69%
								Ba1	5.73%	1.70%	5.83%
								Ba2	5.87%	1.70%	5.97%
								Ba3	6.01%	1.70%	6.11%
								B1	6.15%	1.70%	6.26%
								B2	6.29%	1.70%	6.40%
								B3	6.43%	1.70%	6.54%

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

**2014 Capitalization Rate Study
Gas and Electric Companies
Summary of Rates of Return**

Common Equity		Preferred Stock		Bonds		
Value Line Rating	Rate of Return ¹	Value Line Rating	Rate of Return ²	Moody's Bond Yields	Moody's Rating	Rate of Return ³
A	10.30%	A	6.22%	Aaa=N/A	Aaa2	4.26%
					Aaa3	4.37%
B++	10.40%	B++	6.22%		Aa1	4.48%
				Aa=4.59	Aa2	4.59%
B+	10.45%	B+	6.22%		Aa3	4.67%
					A1	4.75%
B	11.00%	B	6.92%	A=4.83	A2	4.83%
					A3	4.97%
Not Rated	11.00%	Not Rated	6.92%		Baa1	5.11%
				Baa=5.25	Baa2	5.25%
Not Rated	13.50%	Not Rated	6.92%		Baa3	5.39%
					Ba1	5.53%
					Ba2	5.67%
					Ba3	5.81%
					B1	5.95%
					B2	6.09%
					B3	6.23%
					Not Rated	6.37%

¹ The Rate of Return on Common Equity was developed by staff based on the relative risks of the utilities in conjunction with the results of various models and pertinent information from different sources. Consideration was also given to the latest decisions of the California Public Utilities Commission. For 2014 the return on equity (ROE) and return on rate base (ROR) for Pacific Gas and Electric Company are 10.40% and 8.06%, respectively; for Southern California Edison Company, the ROE and ROR are 10.45% and 7.12%, respectively (D 12-12-034); for San Diego Gas & Electric Company, the ROE and ROR are 10.30% and 7.79%, respectively (D 12-12-034).

² The Rate of Return on Preferred Stocks was developed by staff based on the relative risks of the utilities. Consideration was given to the latest decisions of the California Public Utilities Commission.

³ The Rates of Return on Bonds were based on the 2014 Moody's "Utility Bond Yields" reports. Because Moody's assigns yields only to groups Aaa, Aa, A and Baa, staff interpolated the difference between these groups to further refine the ratings.

**2014 Capitalization Rate Study
Gas and Electric Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings	
	A+, A	B++, B+, B
Expected Future Return, S&P 500	10.90%	10.90%
Less: Risk Free Return 30 Year Treasury Bonds ¹	3.97%	3.97%
Risk Premium	6.93%	6.93%
Beta ²	0.73	0.75
Adjusted Risk Premium	5.09%	5.16%
Risk Free Return 30 Year Treasury Bonds ¹	3.97%	3.97%
Projected Return on Common Equity	9.06%	9.13%

¹ WSJ.com, December 31, 2013

² The estimated betas were derived from a sample of gas and electric companies with similar ratings.

**2014 Capitalization Rate Study
Gas and Electric Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings	
	A+, A	B++, B+, B
Common Stock Returns, S&P 500 (1928 - 2013) ¹	11.50%	11.50%
Less: 10 Year Treasury Bonds (1928 - 2013) ¹	5.21%	5.21%
Risk Premium	6.29%	6.29%
Beta ²	0.73	0.75
Adjusted Risk Premium	4.62%	4.69%
Risk Free Return 30 Year Treasury Bonds ³	3.97%	3.97%
Projected Return on Common Equity	8.59%	8.66%

¹ Damodaran Online, January 5, 2014

² The estimated betas were derived from a sample of gas and electric companies with similar ratings.

³ WSJ.com, December 31, 2013

**2014 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 12/31/13	Est. 2014 Earnings	2013 Earnings	2013 Dividends	Est. 2014 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A+	Consolidated Edison, Inc.	55.28	3.85	3.80	2.46	2.50	4.52%	1.50%	2.17%	6.96%	6.02%	6.69%
A	Allete, Inc.	49.88	2.75	2.60	1.90	1.96	3.93%	3.50%	6.00%	5.51%	7.43%	9.93%
A	Alliant Energy Corp.	51.60	3.45	3.25	1.88	1.96	3.80%	4.50%	5.37%	6.69%	8.30%	9.17%
A	Avista Corp.	28.19	1.85	1.75	1.22	1.28	4.54%	4.50%	4.67%	6.56%	9.04%	9.21%
A	Cleco Corp.	46.62	2.75	2.60	1.43	1.58	3.39%	10.00%	7.17%	5.90%	13.39%	10.56%
A	Duke Energy Corp.	69.01	4.50	4.05	3.09	3.15	4.56%	2.00%	3.67%	6.52%	6.56%	8.23%
A	Integrus Energy Group, Inc.	54.41	3.70	3.60	2.72	2.72	5.00%	1.00%	4.87%	6.80%	6.00%	9.87%
A	MGE Energy Inc.	57.71	3.30	3.15	1.60	1.65	2.86%	3.50%	6.50%	5.72%	6.36%	9.36%
A	NextEra Energy, Inc.	85.62	5.25	5.00	2.64	2.88	3.36%	8.50%	6.10%	6.13%	11.86%	9.46%
A	OGE Energy Corp.	33.90	2.00	1.85	0.85	0.93	2.74%	8.50%	5.33%	5.90%	11.24%	8.08%
A	Pinnacle West Capital Corp.	52.92	3.85	3.70	1.66	2.29	4.33%	2.00%	4.67%	7.28%	6.33%	8.99%
A	Sempra Energy	89.76	4.55	4.30	2.52	2.64	2.94%	7.50%	5.33%	5.07%	10.44%	8.27%
A	Southern Co.	41.11	2.80	2.65	2.01	2.08	5.06%	3.50%	3.47%	6.81%	8.56%	8.53%
A	Vectren Corp.	35.50	2.20	1.65	1.43	1.45	4.08%	2.50%	5.83%	6.20%	6.58%	9.92%
A	Wisconsin Energy Corp.	41.34	2.60	2.45	1.45	1.56	3.77%	13.00%	5.93%	6.29%	16.77%	9.71%
	Mean						3.93%	5.07%	5.14%	6.29%	8.99%	9.06%
	Median						3.93%	3.50%	5.33%	6.29%	8.30%	9.21%
	Weighted Average										8.94%	8.61%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 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 12/31/13	Est. 2014 Earnings	2013 Earnings	2013 Dividends	Est. 2014 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	Ameren Corp.	36.16	2.25	2.00	1.60	1.60	4.42%	1.50%	1.40%	6.22%	5.92%	5.82%
B++	American Electric Power Co., Inc.	46.74	3.30	3.10	1.95	2.02	4.32%	4.00%	4.57%	7.06%	8.32%	8.89%
B++	CenterPoint Energy, Inc.	23.18	1.30	1.25	0.83	0.85	3.67%	4.00%	5.30%	5.61%	7.67%	8.97%
B++	DTE Energy Co.	66.39	4.25	4.05	2.59	2.73	4.11%	5.50%	5.10%	6.40%	9.61%	9.21%
B++	Edison International	46.30	3.50	3.35	1.36	1.46	3.15%	5.50%	0.27%	7.56%	8.65%	3.42%
B++	El Paso Electric Co.	35.11	2.45	2.40	1.05	1.11	3.16%	0.00%	3.25%	6.98%	3.16%	6.41%
B++	Empire District Electric Co.	22.69	1.45	1.40	1.01	1.03	4.54%	3.00%	3.67%	6.39%	7.54%	8.21%
B++	Entergy Corp.	63.27	4.95	4.75	3.32	3.32	5.25%	0.50%	-3.85%	7.82%	5.75%	1.40%
B++	Exelon Corp.	27.39	2.05	2.25	1.46	1.24	4.53%	-7.50%	-5.30%	7.48%	-2.97%	-0.77%
B++	Hawaiian Electric Industries, Inc.	26.06	1.60	1.60	1.24	1.24	4.76%	1.00%	2.80%	6.14%	5.76%	7.56%
B++	Northeast Utilities	42.39	2.70	2.50	1.47	1.56	3.68%	8.00%	7.97%	6.37%	11.68%	11.65%
B++	Portland General Electric Co.	30.20	1.90	1.60	1.10	1.12	3.71%	3.00%	5.40%	6.29%	6.71%	9.11%
B++	SCANA Corp.	46.93	3.55	3.40	2.03	2.08	4.43%	2.50%	4.37%	7.56%	6.93%	8.80%
B++	UIL Holdings Corp.	38.75	2.25	2.20	1.73	1.73	4.46%	0.00%	6.23%	5.81%	4.46%	10.70%
B++	Westar Energy, Inc.	32.17	2.35	2.25	1.36	1.40	4.35%	3.00%	3.67%	7.30%	7.35%	8.02%
B++	Xcel Energy, Inc.	27.94	1.95	1.90	1.11	1.15	4.12%	4.50%	4.53%	6.98%	8.62%	8.65%
B+	Black Hills Corp.	52.51	2.65	2.70	1.52	1.56	2.97%	2.50%	6.50%	5.05%	5.47%	9.47%
B+	CMS Energy Corp.	26.77	1.75	1.65	1.02	1.08	4.03%	8.00%	5.90%	6.54%	12.03%	9.93%
B+	FirstEnergy Corp.	32.98	2.65	2.50	2.20	2.20	6.67%	0.00%	0.87%	8.04%	6.67%	7.54%
B+	Great Plains Energy Inc.	24.24	1.65	1.55	0.88	0.94	3.88%	4.50%	6.80%	6.81%	8.38%	10.68%
B+	Otter Tail Corp.	29.27	1.55	1.45	1.19	1.19	4.07%	1.50%	13.75%	5.30%	5.57%	17.82%
B+	PG&E Corp.	40.28	2.45	2.15	1.82	1.82	4.52%	2.50%	0.70%	6.08%	7.02%	5.22%
B	Pepco Holdings, Inc.	19.13	1.25	1.15	1.08	1.12	5.85%	1.00%	5.20%	6.53%	6.85%	11.05%
B	PNM Resources, Inc.	24.12	1.50	1.40	0.68	0.74	3.07%	12.50%	8.50%	6.22%	15.57%	11.57%
	Mean						4.24%	2.96%	4.07%	6.61%	7.20%	8.30%
	Median						4.22%	2.75%	4.55%	6.47%	6.98%	8.84%
	Weighted Average										6.72%	6.67%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 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, Inc.	2.50%	2.30%	1.70%	2.17%
A	Allete, Inc.	6.00%	6.00%	6.00%	6.00%
A	Alliant Energy Corp.	6.00%	5.30%	4.80%	5.37%
A	Avista Corp.	4.00%	5.00%	5.00%	4.67%
A	Cleco Corp.	5.50%	8.00%	8.00%	7.17%
A	Duke Energy Corp.	4.00%	3.60%	3.40%	3.67%
A	Integrus Energy Group, Inc.	4.50%	4.80%	5.30%	4.87%
A	MGE Energy Inc.	6.50%	N/A	N/A	6.50%
A	NextEra Energy, Inc.	5.50%	6.20%	6.60%	6.10%
A	OGE Energy Corp.	5.00%	6.00%	5.00%	5.33%
A	Pinnacle West Capital Corp.	5.00%	4.50%	4.50%	4.67%
A	Sempra Energy	4.50%	6.00%	5.50%	5.33%
A	Southern Co.	3.00%	3.90%	3.50%	3.47%
A	Vectren Corp.	7.50%	5.00%	5.00%	5.83%
A	Wisconsin Energy Corp.	7.00%	5.50%	5.30%	5.93%
B++	Ameren Corp.	-0.50%	2.70%	2.00%	1.40%
B++	American Electric Power Co., Inc.	5.50%	4.10%	4.10%	4.57%
B++	CenterPoint Energy, Inc.	6.00%	5.30%	4.60%	5.30%
B++	DTE Energy Co.	5.00%	5.50%	4.80%	5.10%
B++	Edison International	1.50%	0.60%	-1.30%	0.27%
B++	El Paso Electric Co.	3.00%	3.50%	N/A	3.25%
B++	Empire District Electric Co.	5.00%	3.00%	3.00%	3.67%
B++	Entergy Corp.	-3.50%	N/A	-4.20%	-3.85%
B++	Exelon Corp.	-5.50%	-2.70%	-7.70%	-5.30%
B++	Hawaiian Electric Industries, Inc.	3.50%	2.40%	2.50%	2.80%
B++	Northeast Utilities	8.00%	7.80%	8.10%	7.97%
B++	Portland General Electric Co.	3.50%	6.00%	6.70%	5.40%
B++	SCANA Corp.	4.50%	4.40%	4.20%	4.37%
B++	UIL Holdings Corp.	4.00%	7.60%	7.10%	6.23%
B++	Westar Energy, Inc.	6.00%	4.00%	1.00%	3.67%
B++	Xcel Energy, Inc.	4.50%	4.30%	4.80%	4.53%

**2014 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
B+	Black Hills Corp.	11.50%	4.00%	4.00%	6.50%
B+	CMS Energy Corp.	5.50%	6.10%	6.10%	5.90%
B+	FirstEnergy Corp.	3.50%	-1.30%	0.40%	0.87%
B+	Great Plains Energy Inc.	6.50%	6.90%	7.00%	6.80%
B+	Otter Tail Corp.	21.50%	N/A	6.00%	13.75%
B+	PG&E Corp.	2.50%	1.40%	-1.80%	0.70%
B	Pepeco Holdings, Inc.	6.00%	5.40%	4.20%	5.20%
B	PNM Resources, Inc.	12.00%	7.60%	5.90%	8.50%
	Mean	5.03%	4.46%	3.81%	4.48%
	Median	5.00%	4.90%	4.80%	5.10%
	Weighted Average				3.31%

Sources: Columns a and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Gas and Electric Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/13	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A+	Consolidated Edison, Inc.	292,888,192	55.28	16,190.86	10,493.00	0.00	16,190.86	26,683.86	39.32%	0.00%	60.68%
A	Allete, Inc.	40,736,213	49.88	2,031.92	1,064.20	0.00	2,031.92	3,096.12	34.37%	0.00%	65.63%
A	Alliant Energy Corp.	110,943,669	51.60	5,724.69	3,104.80	200.00	5,724.69	9,029.49	34.39%	2.21%	63.40%
A	Avista Corp.	59,985,467	28.19	1,690.99	1,248.50	0.00	1,690.99	2,939.49	42.47%	0.00%	57.53%
A	Cleco Corp.	60,452,158	46.62	2,818.28	1,291.00	0.00	2,818.28	4,109.28	31.42%	0.00%	68.58%
A	Duke Energy Corp.	705,908,295	69.01	48,714.73	37,359.00	0.00	48,714.73	86,073.73	43.40%	0.00%	56.60%
A	Integrus Energy Group, Inc.	79,807,435	54.41	4,342.32	2,506.20	51.10	4,342.32	6,899.62	36.32%	0.74%	62.94%
A	MGE Energy Inc.	23,113,638	57.71	1,333.89	400.40	0.00	1,333.89	1,734.29	23.09%	0.00%	76.91%
A	NextEra Energy, Inc.	430,681,556	85.62	36,874.95	23,862.00	0.00	36,874.95	60,736.95	39.29%	0.00%	60.71%
A	OGE Energy Corp.	198,453,261	33.90	6,727.57	2,400.00	0.00	6,727.57	9,127.57	26.29%	0.00%	73.71%
A	Pinnacle West Capital Corp.	109,996,850	52.92	5,821.03	2,820.20	0.00	5,821.03	8,641.23	32.64%	0.00%	67.36%
A	Sempra Energy	244,248,233	89.76	21,923.72	10,530.00	99.00	21,923.72	32,552.72	32.35%	0.30%	67.35%
A	Southern Co.	873,903,083	41.11	35,926.16	19,943.00	1,082.00	35,926.16	56,951.16	35.02%	1.90%	63.08%
A	Vectren Corp.	82,361,172	35.50	2,923.82	1,906.50	0.00	2,923.82	4,830.32	39.47%	0.00%	60.53%
A	Wisconsin Energy Corp.	226,519,569	41.34	9,364.32	4,370.90	30.40	9,364.32	13,765.62	31.75%	0.22%	68.03%
	Mean								34.77%	0.36%	64.87%
	Median								34.39%	0.00%	63.40%
	Weighted Average								37.69%	0.45%	61.87%

Sources: Columns a, c, f and g were extracted from Value Line.
Column d was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Gas and Electric Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/13	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B++	Ameren Corp.	242,634,671	36.16	8,773.67	5,274.00	142.00	8,773.67	14,189.67	37.17%	1.00%	61.83%
B++	American Electric Power Co., Inc.	487,290,382	46.74	22,775.95	16,202.00	0.00	22,775.95	38,977.95	41.57%	0.00%	58.43%
B++	CenterPoint Energy, Inc.	428,640,167	23.18	9,935.88	7,758.00	0.00	9,935.88	17,693.88	43.85%	0.00%	56.15%
B++	DTE Energy Co.	176,797,248	66.39	11,737.57	6,846.00	0.00	11,737.57	18,583.57	36.84%	0.00%	63.16%
B++	Edison International	325,811,206	46.30	15,085.06	8,830.00	1,754.00	15,085.06	25,669.06	34.40%	6.83%	58.77%
B++	El Paso Electric Co.	40,253,783	35.11	1,413.31	999.60	0.00	1,413.31	2,412.91	41.43%	0.00%	58.57%
B++	Empire District Electric Co.	42,968,104	22.69	974.95	743.50	0.00	974.95	1,718.45	43.27%	0.00%	56.73%
B++	Entergy Corp.	178,319,275	63.27	11,282.26	12,308.00	280.50	11,282.26	23,870.76	51.56%	1.18%	47.26%
B++	Exelon Corp.	856,903,972	27.39	23,470.60	18,571.00	280.00	23,470.60	42,321.60	43.88%	0.66%	55.46%
B++	Hawaiian Electric Industries, Inc.	98,128,257	26.06	2,557.22	1,372.90	34.30	2,557.22	3,964.42	34.63%	0.87%	64.50%
B++	Northeast Utilities	314,751,609	42.39	13,342.32	7,651.40	155.60	13,342.32	21,149.32	36.18%	0.74%	63.09%
B++	Portland General Electric Co.	77,363,003	30.20	2,336.36	1,686.00	0.00	2,336.36	4,022.36	41.92%	0.00%	58.08%
B++	SCANA Corp.	139,985,242	46.93	6,569.51	5,432.00	0.00	6,569.51	12,001.51	45.26%	0.00%	54.74%
B++	UIL Holdings Corp.	56,462,507	38.75	2,187.92	1,592.00	0.00	2,187.92	3,779.92	42.12%	0.00%	57.88%
B++	Westar Energy, Inc.	127,154,166	32.17	4,090.55	3,163.90	0.00	4,090.55	7,254.45	43.61%	0.00%	56.39%
B++	Xcel Energy, Inc.	497,570,936	27.94	13,902.13	10,816.00	0.00	13,902.13	24,718.13	43.76%	0.00%	56.24%
B+	Black Hills Corp.	44,518,338	52.51	2,337.66	958.60	0.00	2,337.66	3,296.26	29.08%	0.00%	70.92%
B+	CMS Energy Corp.	266,000,000	26.77	7,120.82	7,229.00	37.00	7,120.82	14,386.82	50.25%	0.26%	49.50%
B+	FirstEnergy Corp.	418,216,437	32.98	13,792.78	15,449.00	0.00	13,792.78	29,241.78	52.83%	0.00%	47.17%
B+	Great Plains Energy Inc.	153,825,245	24.24	3,728.72	3,515.80	39.00	3,728.72	7,283.52	48.27%	0.54%	51.19%
B+	Otter Tail Corp.	36,270,696	29.27	1,061.64	437.30	0.00	1,061.64	1,498.94	29.17%	0.00%	70.83%
B+	PG&E Corp.	445,151,814	40.28	17,930.72	11,917.00	252.00	17,930.72	30,099.72	39.59%	0.84%	59.57%
B	Pepco Holdings, Inc.	249,756,730	19.13	4,777.85	4,106.00	0.00	4,777.85	8,883.85	46.22%	0.00%	53.78%
B	PNM Resources, Inc.	79,653,624	24.12	1,921.25	1,711.20	11.50	1,921.25	3,643.95	46.96%	0.32%	52.72%
	Mean								41.83%	0.55%	57.62%
	Median								42.69%	0.00%	57.31%
	Weighted Average								42.86%	0.83%	56.31%

Sources: Columns a, c, f and g were extracted from Value Line.
Column d was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 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	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
A+	Consolidated Edison, Inc.	0.60	0.18	0.19	0.32	0.35	0.67	0.42
A	Allete, Inc.	0.75	0.62	0.75	0.71	0.22	0.56	0.52
A	Alliant Energy Corp.	0.75	0.51	0.44	0.57	0.15	0.65	0.48
A	Avista Corp.	0.70	0.74	0.74	0.73	0.36	0.85	0.45
A	Cleco Corp.	0.70	0.44	0.43	0.52	0.32	0.59	0.50
A	Duke Energy Corp.	0.65	0.28	0.34	0.42	0.34	0.59	0.47
A	Integrus Energy Group, Inc.	1.00	0.97	0.87	0.95	0.39	0.51	0.76
A	MGE Energy Inc.	0.65	0.42	0.35	0.47	0.38	0.32	0.54
A	NextEra Energy, Inc.	0.70	0.51	0.47	0.56	0.27	0.74	0.46
A	OGE Energy Corp.	0.85	0.71	0.72	0.76	0.25	0.48	0.62
A	Pinnacle West Capital Corp.	0.70	0.51	0.50	0.57	0.35	0.68	0.49
A	Sempra Energy	0.80	0.38	0.43	0.54	0.39	0.60	0.58
A	Southern Co.	0.55	0.24	0.26	0.35	0.36	0.59	0.40
A	Vectren Corp.	0.70	0.52	0.47	0.56	0.35	0.69	0.48
A	Wisconsin Energy Corp.	0.65	0.23	0.25	0.38	0.39	0.55	0.49
	Mean	0.72	0.48	0.48	0.56		0.61	0.51
	Median	0.70	0.51	0.44	0.56		0.59	0.49
	Weighted Average				0.47		0.62	0.47
	Relevered Beta based on 45% Debt Capital Structure and Mean Unlevered Beta ³							0.76
	Relevered Beta based on 45% Debt Capital Structure and Weighted Average Unlevered Beta ³							0.71

Sources: Columns a, c and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Beta/[1+(1-*tc*)(D/E)]; where D/E is the debt to equity ratio, *tc* is the company's most recent tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-*tp*)(D/E)]; where D/E is the debt to equity ratio, *tp* is a prospective purchaser's tax rate (assumed to be 40%).

**2014 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	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
B++	Ameren Corp.	0.80	0.52	0.52	0.61	0.38	0.93	0.51
B++	American Electric Power Co., Inc.	0.70	0.38	0.43	0.50	0.36	0.81	0.46
B++	CenterPoint Energy, Inc.	0.80	0.50	0.60	0.63	0.30	1.12	0.45
B++	DTE Energy Co.	0.80	0.58	0.56	0.65	0.31	0.82	0.51
B++	Edison International	0.75	0.50	0.54	0.60	0.34	0.97	0.46
B++	El Paso Electric Co.	0.70	0.52	N/A	0.61	0.34	0.71	0.47
B++	Empire District Electric Co.	0.70	0.55	0.60	0.62	0.38	0.78	0.47
B++	Entergy Corp.	0.70	0.43	0.38	0.50	0.34	0.78	0.46
B++	Exelon Corp.	0.75	0.43	0.48	0.55	0.34	0.55	0.55
B++	Hawaiian Electric Industries, Inc.	0.70	0.62	0.58	0.63	0.34	0.60	0.50
B++	Northeast Utilities	0.75	0.38	0.44	0.52	0.35	0.78	0.50
B++	Portland General Electric Co.	0.75	0.52	0.59	0.62	0.30	0.89	0.46
B++	SCANA Corp.	0.70	0.46	0.49	0.55	0.32	0.81	0.45
B++	UIL Holdings Corp.	0.80	0.78	0.68	0.75	0.40	0.74	0.56
B++	Westar Energy, Inc.	0.75	0.52	0.55	0.61	0.30	0.90	0.46
B++	Xcel Energy, Inc.	0.65	0.28	0.31	0.41	0.34	0.76	0.43
B+	Black Hills Corp.	0.85	0.95	0.96	0.92	0.34	0.75	0.57
B+	CMS Energy Corp.	0.70	0.18	0.39	0.42	0.37	1.44	0.37
B+	FirstEnergy Corp.	0.75	0.27	0.23	0.42	0.37	0.97	0.47
B+	Great Plains Energy Inc.	0.85	0.76	0.76	0.79	0.35	1.04	0.51
B+	Otter Tail Corp.	0.95	0.99	1.15	1.03	0.25	0.50	0.69
B+	PG&E Corp.	0.55	0.23	0.18	0.32	0.30	0.68	0.37
B	Pepco Holdings, Inc.	0.75	0.31	0.40	0.49	0.35	0.86	0.48
B	PNM Resources, Inc.	0.90	0.77	0.68	0.78	0.38	1.19	0.52
	Mean	0.75	0.52	0.54	0.61		0.85	0.49
	Median	0.75	0.51	0.54	0.61		0.81	0.47
	Weighted Average				0.53		0.84	0.47

Relevered Beta based on 47% Debt Capital Structure and Mean Unlevered Beta ³ 0.75

Relevered Beta based on 47% Debt Capital Structure and Weighted Average Unlevered Beta ³ 0.72

Sources: Columns a, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2014 Capitalization Rate Study
Natural Gas Distribution Companies
Flotation Cost Adjustment**

Equity				Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A	10.10%	4.50%	10.58%	A	6.00%	1.70%	6.10%	Aa2	4.79%	1.70%	4.87%
B++	10.40%	4.50%	10.89%					Aa3	4.87%	1.70%	4.95%
Not Rated	11.75%	4.50%	12.30%					A1	4.95%	1.70%	5.04%
	13.50%	4.50%	14.14%					A2	5.03%	1.70%	5.12%
								A3	5.17%	1.70%	5.26%
								Baa1	5.31%	1.70%	5.40%
								Baa2	5.45%	1.70%	5.54%
								Baa3	5.59%	1.70%	5.69%
								Ba1	5.73%	1.70%	5.83%
								Ba2	5.87%	1.70%	5.97%
								Ba3	6.01%	1.70%	6.11%
								Not Rated	6.57%	1.70%	6.68%

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

**2014 Capitalization Rate Study
Natural Gas Distribution Companies
Summary of Rates of Return**

Common Equity		Preferred Stock		Bonds		
Value Line Rating	Rate of Return ¹	Value Line Rating	Rate of Return ²	Moody's Bond Yields	Moody's Rating	Rate of Return ³
A	10.10%	A	6.00%	Aaa=N/A	Aaa2	4.26%
					Aaa3	4.37%
B++	10.40%				Aa1	4.48%
				Aa=4.59	Aa2	4.59%
Not Rated	11.75%				Aa3	4.67%
	13.50%				A1	4.75%
				A=4.83	A2	4.83%
					A3	4.97%
					Baa1	5.11%
				Baa=5.25	Baa2	5.25%
					Baa3	5.39%
					Ba1	5.53%
					Ba2	5.67%
					Ba3	5.81%
					B1	5.95%
					B2	6.09%
					B3	6.23%
					Not Rated	6.37%

¹ The Rate of Return on Common Equity was developed by staff based on the relative risks of the utilities in conjunction with the results of various financial models and pertinent information from different sources. Consideration was also given to the latest decisions of the California Public Utilities Commission. For 2014, the return on equity (ROE) and return on rate base (ROR) for Southern California Gas Company are 10.10% and 8.02%, respectively.

² The Rate of Return on Preferred Stocks was developed by staff based on the relative risks of the utilities. Consideration was given to the latest decisions of the California Public Utilities Commission.

³ The Rates of Return on Bonds were based on the 2013 Moody's "Utility Bond Yields" reports. Because Moody's assigns yields only to groups Aaa, Aa, A and Baa, staff interpolated the difference between these groups to further refine the ratings.

**2014 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings A, B++, B
Expected Future Return, S&P 500	10.90%
Less: Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Risk Premium	6.93%
Beta ²	0.73
Adjusted Risk Premium	5.07%
Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Projected Return on Common Equity	9.04%

¹ WSJ.com, December 31, 2013

² The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

**2014 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings A, B++, B
Common Stock Returns, S&P 500 (1928 - 2013) ¹	11.50%
Less: 10 Year Treasury Bonds (1928 - 2013) ¹	5.21%
Risk Premium	6.29%
Beta ²	0.73
Adjusted Risk Premium	4.60%
Risk Free Return 30 Year Treasury Bonds ³	3.97%
Projected Return on Common Equity	8.57%

¹ Damodaran Online, January 5, 2014

² The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

³ WSJ.com, December 31, 2013

**2014 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 12/31/13	Est. 2014 Earnings	2013 Earnings	2013 Dividends	Est. 2014 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A	AGL Resources, Inc.	47.23	2.95	2.70	1.88	1.92	4.07%	4.50%	5.67%	6.25%	8.57%	9.73%
A	New Jersey Resources Corp.	46.24	2.80	2.73	1.60	1.64	3.55%	3.00%	4.00%	6.06%	6.55%	7.55%
A	Northwest Natural Gas Co.	42.82	2.30	2.15	1.83	1.87	4.37%	2.50%	4.17%	5.37%	6.87%	8.53%
A	WGL Holdings, Inc.	40.06	2.35	2.31	1.66	1.71	4.27%	2.50%	4.23%	5.87%	6.77%	8.50%
B++	Atmos Energy Corp.	45.42	2.70	2.50	1.40	1.48	3.26%	4.00%	7.27%	5.94%	7.26%	10.53%
B++	Laclede Group, Inc.	45.54	2.95	2.02	1.69	1.76	3.86%	3.50%	5.07%	6.48%	7.36%	8.93%
B++	Piedmont Natural Gas Co., Inc.	33.16	1.85	1.80	1.23	1.27	3.83%	3.00%	4.33%	5.58%	6.83%	8.16%
B++	South Jersey Industries, Inc.	55.96	3.15	2.85	1.80	1.95	3.48%	8.50%	6.50%	5.63%	11.98%	9.98%
B++	Southwest Gas Corp.	55.91	3.45	3.25	1.32	1.40	2.50%	7.00%	4.67%	6.17%	9.50%	7.17%
B++	UGI Corp.	41.46	2.60	2.39	1.09	1.14	2.75%	4.00%	7.00%	6.27%	6.75%	9.75%
B+	NiSource, Inc.	32.88	1.70	1.55	0.98	1.02	3.10%	4.50%	7.87%	5.17%	7.60%	10.97%
	Mean						3.55%	4.27%	5.52%	5.89%	7.82%	9.07%
	Median						3.55%	4.00%	5.07%	5.94%	7.26%	8.93%
	Weighted Average										7.74%	9.72%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Natural Gas Distribution Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	AGL Resources, Inc.	8.00%	5.00%	4.00%	5.67%
A	New Jersey Resources Corp.	5.50%	4.00%	2.50%	4.00%
A	Northwest Natural Gas Co.	4.50%	4.00%	4.00%	4.17%
A	WGL Holdings, Inc.	3.50%	4.60%	4.60%	4.23%
B++	Atmos Energy Corp.	7.50%	6.50%	7.80%	7.27%
B++	Laclede Group, Inc.	6.00%	4.30%	4.90%	5.07%
B++	Piedmont Natural Gas Co., Inc.	4.00%	5.00%	4.00%	4.33%
B++	South Jersey Industries, Inc.	7.50%	6.00%	6.00%	6.50%
B++	Southwest Gas Corp.	8.00%	3.40%	2.60%	4.67%
B++	UGI Corp.	8.00%	6.00%	N/A	7.00%
B+	NiSource, Inc.	10.50%	6.60%	6.50%	7.87%
	Mean	6.64%	5.04%	4.69%	5.52%
	Median	7.50%	5.00%	4.30%	5.07%
	Weighted Average				6.35%

Sources: Columns a and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/13	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A	AGL Resources, Inc.	118,788,590	47.23	5,610.39	3,816.00	0.00	5,610.39	9,426.39	40.48%	0.00%	59.52%
A	New Jersey Resources Corp.	41,380,558	46.24	1,913.44	516.20	0.00	1,913.44	2,429.64	21.25%	0.00%	78.75%
A	Northwest Natural Gas Co.	27,002,556	42.82	1,156.25	681.70	0.00	1,156.25	1,837.95	37.09%	0.00%	62.91%
A	WGL Holdings, Inc.	51,809,755	40.06	2,075.50	524.10	28.20	2,075.50	2,627.80	19.94%	1.07%	78.98%
B++	Atmos Energy Corp.	90,640,211	45.42	4,116.88	2,455.60	0.00	4,116.88	6,572.48	37.36%	0.00%	62.64%
B++	Laclede Group, Inc.	32,709,763	45.54	1,489.60	912.70	0.00	1,489.60	2,402.30	37.99%	0.00%	62.01%
B++	Piedmont Natural Gas Co., Inc.	75,930,485	33.16	2,517.85	875.00	0.00	2,517.85	3,392.85	25.79%	0.00%	74.21%
B++	South Jersey Industries, Inc.	32,207,008	55.96	1,802.30	580.40	0.00	1,802.30	2,382.70	24.36%	0.00%	75.64%
B++	Southwest Gas Corp.	46,350,863	55.91	2,591.48	1,280.40	0.00	2,591.48	3,871.88	33.07%	0.00%	66.93%
B++	UGI Corp.	114,098,006	41.46	4,730.50	3,298.20	0.00	4,730.50	8,028.70	41.08%	0.00%	58.92%
B+	NiSource, Inc.	313,294,844	32.88	10,301.13	7,089.10	0.00	10,301.13	17,390.23	40.76%	0.00%	59.24%
	Mean								32.65%	0.10%	67.25%
	Median								37.09%	0.00%	62.91%
	Weighted Average								36.49%	0.05%	63.46%

Sources: Columns a, c, f and g were extracted from Value Line.
Column d was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 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	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
A	AGL Resources, Inc.	0.75	0.49	0.45	0.56	0.39	0.69	0.53
A	New Jersey Resources Corp.	0.70	0.44	0.25	0.46	0.35	0.27	0.60
A	Northwest Natural Gas Co.	0.65	0.39	0.31	0.45	0.38	0.52	0.49
A	WGL Holdings, Inc.	0.65	0.42	0.33	0.47	0.39	0.31	0.55
B++	Atmos Energy Corp.	0.80	0.54	0.53	0.62	0.38	0.68	0.56
B++	Laclede Group, Inc.	0.65	0.31	0.14	0.37	0.25	0.47	0.48
B++	Piedmont Natural Gas Co., Inc.	0.75	0.56	0.37	0.56	0.25	0.37	0.59
B++	South Jersey Industries, Inc.	0.70	0.46	0.34	0.50	0.25	0.28	0.58
B++	Southwest Gas Corp.	0.80	0.73	0.74	0.76	0.35	0.64	0.56
B++	UGI Corp.	0.75	0.43	0.43	0.54	0.32	0.68	0.51
B+	NiSource, Inc.	0.85	0.74	0.75	0.78	0.29	1.06	0.48
	Mean	0.73	0.50	0.42	0.55		0.54	0.54
	Median	0.75	0.46	0.37	0.54		0.52	0.55
	Weighted Average				0.62		0.71	0.53
	Relevered Beta based on 47% Debt Capital Structure and Mean Unlevered Beta ³							0.83
	Relevered Beta based on 47% Debt Capital Structure and Weighted Average Unlevered Beta ³							0.80

Sources: Columns a, c and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = $Beta/[1+(1-tc)(D/E)]$; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

³ Relevered Beta = $[Unlevered Beta][1+(1-tp)(D/E)]$; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**2014 Capitalization Rate Study
Water Utility 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++	11.00%	4.50%	11.52%	Not Rated	5.75%	1.70%	5.85%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where: k_u = The cost of capital unadjusted for flotation costs

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

**2014 Capitalization Rate Study
Water Utility Companies
Summary of Rates of Return**

Common Equity		Bonds	
Value Line Rating	Rate of Return ¹	Moody's Rating	Rate of Return ²
B++	11.00%	Not Rated	5.75%

¹ In developing the Rate of Return on Common Equity, staff considered the latest decision of the California Public Utilities Commission and other pertinent information. For 2014, the return on equity and return on rate base for Golden State Water Company are 10.20% and 8.87%, respectively (D.08-01-043).

² The Rate of Return on Bonds represents what staff estimates a prospective purchaser would expect in the open market.

**2014 Capitalization Rate Study
Water Utility Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings B++, B+, B
Expected Future Return, S&P 500	10.90%
Less: Risk Free Return 30 Year Treasury Bonds ¹	<u>3.97%</u>
Risk Premium	6.93%
Beta ²	<u>0.56</u>
Adjusted Risk Premium	3.86%
Risk Free Return 30 Year Treasury Bonds ¹	<u>3.97%</u>
Projected Return on Common Equity	<u><u>7.83%</u></u>

¹ WSJ.com, December 31, 2013

² The estimated betas were derived from a sample of water companies with similar ratings.

**2014 Capitalization Rate Study
Water Utility Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings
	B++, B+, B
Common Stock Returns, S&P 500 (1928 - 2013) ¹	11.50%
Less: 10 Year Treasury Bonds (1928 - 2013) ¹	<u>5.21%</u>
Risk Premium	6.29%
Beta ²	<u>0.56</u>
Adjusted Risk Premium	3.50%
Risk Free Return 30 Year Treasury Bonds ³	<u>3.97%</u>
Projected Return on Common Equity	<u><u>7.47%</u></u>

¹ Damodaran Online, January 5, 2014

² The estimated betas were derived from a sample of water companies with similar ratings.

³ WSJ.com, December 31, 2013

**2014 Capitalization Rate Study
Water Utility Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/13	Est. 2014 Earnings	2013 Earnings	2013 Dividends	Est. 2014 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A	American States Water Co.	28.73	1.60	1.55	0.76	0.84	2.92%	10.00%	3.33%	5.57%	12.92%	6.26%
B++	Aqua America, Inc.	23.59	1.25	1.15	0.58	0.64	2.71%	9.50%	7.13%	5.30%	12.21%	9.85%
B++	California Water Service Group	23.07	1.15	0.95	0.64	0.68	2.95%	6.50%	6.33%	4.98%	9.45%	9.28%
B++	Middlesex Water Company	20.94	1.05	1.00	0.75	0.76	3.63%	1.50%	4.00%	5.01%	5.13%	7.63%
B+	American Water Works Co., Inc.	42.26	2.40	2.20	1.06	1.20	2.84%	7.50%	7.60%	5.68%	10.34%	10.44%
B+	York Water Co.	20.93	0.90	0.75	0.55	0.57	2.72%	5.00%	6.50%	4.30%	7.72%	9.22%
	Mean						2.96%	6.67%	5.82%	5.14%	9.63%	8.78%
	Median						2.88%	7.00%	6.42%	5.16%	9.89%	9.25%
	Weighted Average										10.77%	9.86%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Water Utility Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	American States Water Co.	7.00%	2.00%	1.00%	3.33%
B++	Aqua America, Inc.	10.00%	5.60%	5.80%	7.13%
B++	California Water Service Group	7.00%	6.00%	6.00%	6.33%
B++	Middlesex Water Company	4.00%	N/A	N/A	4.00%
B+	American Water Works Co., Inc.	8.50%	7.20%	7.10%	7.60%
B+	York Water Co.	6.50%	N/A	N/A	6.50%
	Mean	7.17%	5.20%	4.98%	5.82%
	Median	7.00%	5.80%	5.90%	6.42%
	Weighted Average				7.02%

Sources: Columns a and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Water Utility Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/13	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A	American States Water Co.	38,717,549	28.73	1,112.36	332.10	0.00	1,112.36	1,444.46	22.99%	0.00%	77.01%
B++	Aqua America, Inc.	176,709,658	23.59	4,168.58	1,439.30	0.00	4,168.58	5,607.88	25.67%	0.00%	74.33%
B++	California Water Service Group	47,739,024	23.07	1,101.34	430.20	0.00	1,101.34	1,531.54	28.09%	0.00%	71.91%
B++	Middlesex Water Company	15,919,974	20.94	333.36	130.60	2.90	333.36	466.86	27.97%	0.62%	71.40%
B+	American Water Works Co., Inc.	178,274,197	42.26	7,533.87	5,174.10	17.60	7,533.87	12,725.57	40.66%	0.14%	59.20%
B+	York Water Co.	12,942,843	20.93	270.89	84.90	0.00	270.89	355.79	23.86%	0.00%	76.14%
	Mean								28.21%	0.13%	71.67%
	Median								26.82%	0.00%	73.12%
	Weighted Average								34.30%	0.09%	65.61%

Sources: Columns a, c, f and g were extracted from Value Line.

Column d was acquired from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Water Utility 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	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
A	American States Water Co.	0.65	0.42	0.46	0.51	0.38	0.43	0.40
B++	Aqua America, Inc.	0.60	0.37	0.19	0.39	0.22	0.45	0.29
B++	California Water Service Group	0.60	0.47	0.37	0.48	0.34	0.52	0.36
B++	Middlesex Water Company	0.75	0.58	0.49	0.61	0.34	0.44	0.47
B+	American Water Works Co., Inc.	0.65	0.28	0.30	0.41	0.39	1.01	0.25
B+	York Water Co.	0.70	0.52	0.48	0.57	0.36	0.31	0.47
	Mean	0.66	0.44	0.38	0.49		0.53	0.37
	Median	0.65	0.45	0.42	0.50		0.45	0.38
	Weighted Average				0.42		0.77	0.29
								Relevered Beta based on 45% Debt Capital Structure and Mean Unlevered Beta ³
								0.56
								Relevered Beta based on 45% Debt Capital Structure and Weighted Average Unlevered Beta ³
								0.43

Sources: Columns a, c and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
187	Mojave Pipeline Company, LLC	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
189	Standard Pacific Gas Line, Incorporated	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%
197	El Paso Pipeline Partners, L.P.	Not Rated	Not Rated	75%	25%	12.57%	5.34%	10.76%

**2014 Capitalization Rate Study
Natural Gas Transmission Companies
Industry Notes**

- Interstate gas transmission companies are regulated by the Federal Energy Regulatory Commission (FERC).
- Cabot Oil & Gas Corporation was removed from the 2014 Capitalization Rate Study sample. Operations other than natural gas transmission are significant to a degree that renders the data not representative of that industry group.
- EQT Corporation was removed from the 2014 Capitalization Rate Study sample. EQT Corporation has shifted its Natural Gas Transmission operations to its subsidiary, EQT Midstream Partners, LP. Due to lack of reliable information, EQT Midstream will not be included in the 2014 Capitalization Rate Study sample.
- Staff relied upon the results of the following models in the development of equity rates:
 1. Discounted Cash Flow
 2. Capital Asset Pricing Model – ex post and ex ante

**2014 Capitalization Rate Study
Natural Gas Transmission 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
Not Rated	12.00%	4.50%	12.57%	Not Rated	5.25%	1.70%	5.34%

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

Staff applied a bond rating of Baa3 for the Natural Gas Transmission Companies, which represents the estimated cost of debt for the companies in the study.

**2014 Capitalization Rate Study
Natural Gas Transmission Companies
Comparison of Return on Common Equity**

Description	2014	2013	Change
E/P Ratio - Mean	6.22%	5.43%	0.79%
E/P Ratio - Median	5.70%	5.89%	-0.18%
Dividends Yield + Dividends Growth - Mean	10.02%	7.59%	2.42%
Dividends Yield + Dividends Growth - Median	8.09%	7.00%	1.09%
Dividends Yield + Earnings Growth - Mean	9.52%	11.77%	-2.25%
Dividends Yield + Earnings Growth - Median	8.27%	11.92%	-3.65%
Capital Asset Pricing Model (CAPM) - Ex Ante	11.27%	10.37%	0.90%
Capital Asset Pricing Model (CAPM) - Ex Post	10.60%	9.25%	1.35%
State-Assessed Properties Division Recommendation:	12.00%	11.50%	0.50%

The Discounted Cash Flow (DCF) model is computed using data from a sample of gas transmission companies with similar risk and operations.

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.

2014 Capitalization Rate Study
Natural Gas Transmission Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line		Stock	2014			2014	Dividend	Est.	Est.	E/P	Div Yld+	Div Yld+
Rating	Company Name	Price	Est.	2013	2013	Est.	Yield	Dividend	Earnings	Ratio	Div Grwh	Engs Grwh
		12/31/13	Earnings	Earnings	Dividends	Dividends	(g/c)	Growth	Growth	(d/c)	(h+i)	(h+j)
A	Questar Corp.	22.99	1.25	1.18	0.71	0.75	3.26%	6.00%	4.90%	5.44%	9.26%	8.16%
B++	Devon Energy Corp.	61.87	5.40	4.35	0.86	0.88	1.42%	5.50%	13.13%	8.73%	6.92%	14.56%
B++	National Fuel Gas Co.	71.40	3.40	3.14	1.48	1.52	2.13%	3.00%	4.83%	4.76%	5.13%	6.96%
B	El Paso Pipeline Partners, L.P.	36.00	2.15	1.90	2.55	2.79	7.75%	11.00%	0.63%	5.97%	18.75%	8.38%
	Mean						3.64%	6.38%	5.88%	6.22%	10.02%	9.52%
	Median						2.70%	5.75%	4.87%	5.70%	8.09%	8.27%
	Weighted Average										11.80%	14.77%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.

Column c was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

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

**2014 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
A	Questar Corp.	7.00%	4.50%	3.20%	4.90%
B++	Devon Energy Corp.	7.50%	12.90%	19.00%	13.13%
B++	National Fuel Gas Co.	7.50%	3.50%	3.50%	4.83%
B	El Paso Pipeline Partners, L.P.	6.00%	3.00%	-7.10%	0.63%
	Mean	7.00%	5.98%	4.65%	5.88%
	Median	7.25%	4.00%	3.35%	4.87%
	Weighted Average				8.71%

Sources: Columns a, b and c were extracted from the Value Line Investment Survey Reports.
Column d was extracted from Zacks.com
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Natural Gas Transmission Company
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	10.90%
Less: Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Risk Premium	6.93%
Relevered Beta	1.05
Adjusted Risk Premium	7.30%
Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Projected Return on Common Equity	<u>11.27%</u>

¹ WSJ.com, on December 31, 2013

**2014 Capitalization Rate Study
Natural Gas Transmission Companies
Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Returns, S&P 500 (1928-2013) ¹	11.50%
Less: 10 Year Treasury Bonds (1928-2013) ¹	5.21%
Risk Premium	6.29%
Relevered Beta	1.05
Adjusted Risk Premium	6.63%
Risk Free Return 30 Year Treasury Bonds ²	3.97%
Projected Return on Common Equity	<u>10.60%</u>

¹ Damodaran Online, January 5, 2014

² WSJ.com, on December 31, 2013

**2014 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	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
A	Questar Corp.	0.80	0.54	0.40	0.58	0.36	0.26	0.50
B++	Devon Energy Corp.	1.25	1.44	1.27	1.32	0.35	0.20	1.17
B++	National Fuel Gas Co.	1.05	1.12	1.08	1.08	0.41	0.23	0.95
B	El Paso Pipeline Partners, L.P.	0.65	0.21	0.08	0.31	0.40	1.00	0.20
	Mean	0.94	0.83	0.71	0.82		0.42	0.70
	Median	0.93	0.83	0.74	0.83		0.25	0.72
	Weighted				1.01		2.36	0.88
	Relevered Beta based on 25% Debt Capital Structure						0.84 ³	
	Relevered Beta based on 25% Debt Capital Structure and a weighted average Beta						1.05 ³	

Sources: Column a, b, c and g were extracted from Value Line.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Corrected Beta/[1+(1- t_c)(D/E)]; where D/E is the debt to equity ratio, t_c is the company's 2013 tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1- t_p)(D/E)]; where D/E is the debt to equity ratio, t_p is a prospective purchaser's tax rate (assumed to be 40%).

**2014 Capitalization Rate Study
Natural Gas Transmission Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Bond Rating	P/S Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/13	Market Value Equity (\$million)	L.T. Debt (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Common Equity %
A	NR	NR	Questar Corp.	175,070,395	22.99	4,024.87	1,136.10	4,024.87	5,160.97	22.00%	78.00%
B++	NR	NR	Devon Energy Corp.	406,000,000	61.87	25,119.22	7,960.00	25,119.22	33,079.22	24.10%	75.90%
B++	NR	NR	National Fuel Gas Co.	83,692,481	71.40	5,975.64	1,649.00	5,975.64	7,624.64	21.60%	78.40%
B	NR	NR	El Paso Pipeline Partners, L.P.	217,827,283	36.00	7,841.8	4,172.00	7,841.78	12,013.78	34.70%	65.30%
			Mean							25.60%	74.40%
			Median							23.05%	76.95%
			Weighted Average							25.78%	74.22%

Recommended Capital Structure for Natural Gas Transmission Companies for lien date January 1, 2014:

Debt - 25%
Equity - 75%

Sources: Columns a, e and h were extracted from Value Line.

Column f was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

NR - Not Rated

**2014 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, 2013	N/A	4.59%	4.83%	5.25%	4.89%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages.

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate ³
	Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Modern Electric Generation Technology ¹	B	B2	60%	40%	13.61%	7.12%	11.02%
Older Electric Generation Technology ²	B	B2	60%	40%	15.71%	8.14%	12.68%

¹ Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

² Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

³ Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.

2014 Capitalization Rate Study
Electric Generation Facilities
Industry Notes

- Staff relied primarily on the Capital Asset Pricing Model (CAPM) and Risk Premium Analysis in the development of equity rates. Consideration was given to both the ex post and ex ante risk premiums.
- The Discounted Cash Flow Model was not relied upon because not all of the merchant generators in the sample are currently paying dividends.
- Staff's recommended capital structure of 60% equity and 40% debt provides sufficient coverage of interest and principal payments on debt.
- Staff added a risk premium of 100 basis points to the debt rate for older technology to recognize the market's perception of additional risk present in operating these types of facilities.
- Staff considers the risk associated with older facilities to be greater than that of newer facilities, and has adjusted the beta used in the CAPM calculation upward to reflect this additional risk.
- The following company was removed from the 2014 Capitalization Rate Study sample for electric generation companies:
 1. NV Energy, Inc. merged with MidAmerican Energy Holdings Company on December 19, 2013.

**2014 Capitalization Rate Study
Electric Generation Facilities
Flotation Cost Adjustment**

Facility Type	Equity			Debt		
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Recommended Rate	Flotation Cost in %	Adjusted Rate
Modern Electric Generation Technology ¹	13.00%	4.50%	13.61%	7.00%	1.70%	7.12%
Older Electric Generation Technology ²	15.00%	4.50%	15.71%	8.00%	1.70%	8.14%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where: k_u = The cost of capital unadjusted for flotation costs

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

¹ The Modern Electric Generation Technology Recommended Debt Rate was developed by staff based on the relative rates of the utilities and other pertinent information from various sources.

² The Older Electric Generation Technology Recommended Debt Rate is equal to the Modern Electric Generation Technology Recommended Debt Rate with an additional risk premium of 100 basis points.

**2014 Capitalization Rate Study
Electric Generation Facilities
Summary of Rates of Return**

Common Equity		Bonds			
Facility Type	Rate of Return ¹	Moody's Bond Yields	Moody's Rating	Rate of Return ²	
Modern Electric Generation Technology	13.00%	Aaa=NA	Aaa2	4.26%	
			Aaa3	4.37%	
			Aa1	4.48%	
Older Electric Generation Technology	15.00%	Aa=4.59%	Aa2	4.59%	
			Aa3	4.67%	
			A1	4.75%	
		A=4.83%	A2	4.83%	
			A3	4.97%	
			Baa1	5.11%	
			Baa=5.25% %	Baa2	5.25%
				Baa3	5.39%
				Ba1	5.53%
				Ba2	5.67%
Ba3	5.81%				
B1	5.95%				
B2	6.09%				
B3	6.23%				
Caa1	6.37%				

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 Bonds are based on Moody's "Utility Bond Yields" as of December 31, 2013. However, because Moody's assigns a yield to the groups Aa, A and Baa for bonds, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

2014 Capitalization Rate Study
Electric Generation Facilities
Comparison of Rates of Return on Common Equity

	All Facilities in Study		
	2014	2013	Change
E/P Ratio-Mean	3.17%	5.56%	-2.39%
E/P Ratio-Median	6.13%	6.88%	-0.75%
Div Yld + Div Growth-Mean	9.12%	7.49%	1.63%
Div Yld + Div Growth-Median	6.56%	8.00%	-1.43%
Div Yld + Div Growth-Weighted Avg.	10.56%	7.82%	2.74%
Div Yld + Earn.Growth-Mean	7.28%	11.78%	-4.50%
Div Yld + Earn.Growth-Median	8.23%	9.93%	-1.70%
Div Yld + Earn.Growth-Weighted Avg.	8.12%	9.91%	-1.78%
<hr/>			
Merrill Lynch Industry Factor - Required Return IPPs	11.50%	13.20%	-1.70%
ROE% - Yahoo Finance - Utilities	8.52%	10.26%	-1.74%
ROE% - Yahoo Finance - Electric Utilities	2.70%	7.80%	-5.10%
ROE% - Yahoo Finance - Diversified Utilities	9.90%	11.50%	-1.60%

	Modern Technology	Older Technology
2013 Recommended Rate	<u>13.15%</u>	<u>15.15%</u>
CAPM - Ex Ante	11.25%	12.98%
CAPM - Ex Post	10.57%	12.15%
Risk Premium Analysis ¹	13.41%	14.43%
2014 Recommended Rate	<u>13.00%</u>	<u>15.00%</u>

¹ Risk Premium Analysis estimates the market indicated cost of equity by adding the appropriate "risk premium" to the corresponding cost of debt. "Risk Premium" of 6.29% is determined by comparing the Damodaran Online total return on large company stocks to the total return on long-term corporate bonds.

**2014 Capitalization Rate Study
Electric Generation Facilities
Capital Asset Pricing Model - Ex Ante**

Component	Types of Facilities	
	Modern Technology	Older Technology
Expected Future Return, S&P 500	10.90%	10.90%
Less: Risk Free Return - 30 Year Treasury Bonds ¹	3.97%	3.97%
Risk Premium	6.93%	6.93%
Beta ²	1.05	1.30
Adjusted Risk Premium	7.28%	9.01%
Risk Free Return - 30 Year Treasury Bonds ¹	3.97%	3.97%
Projected Return on Common Equity	11.25%	12.98%

¹ WSJ.com on December 31, 2013

² The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

**2014 Capitalization Rate Study
Electric Generation Facilities
Capital Asset Pricing Model - Ex Post**

Component	Types of Facilities	
	Modern Technology	Older Technology
Common Stock Returns, S&P 500 (1928 - 2013) ¹	11.50%	11.50%
Less: 10 Year Treasury Bonds (1928 - 2013) ¹	5.21%	5.21%
Risk Premium	6.29%	6.29%
Beta ²	1.05	1.30
Adjusted Risk Premium	6.60%	8.18%
Risk Free Return - 30 Year Treasury Bonds ³	3.97%	3.97%
Projected Return on Common Equity	10.57%	12.15%

¹ Damodaran Online, January 5, 2014

² The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

³ WSJ.com on December 31, 2013

2014 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 12/31/13	Est. 2014 Earnings	2013 Earnings	2013 Dividends	Est. 2014 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGrth (h+j)
<u>Merchant Generators</u>												
B+	Calpine Corp.	19.51	0.40	0.20	0.00	0.00	0.00%	0.00%	7.35%	2.05%	0.00%	7.35%
B+	NRG Energy, Inc.	28.72	1.40	0.50	0.45	0.48	1.67%	0.00%	-5.15%	4.87%	1.67%	-3.48%
B	AES Corp.	14.51	1.45	1.32	0.17	0.20	1.38%	42.00%	11.60%	9.99%	43.38%	12.98%
C+	Atlantic Power	3.48	-0.50	-0.25	0.54	0.27	7.76%	-16.00%	0.00%	-14.37%	-8.24%	7.76%
<u>Diversified Electric Utilities</u>												
A	Duke Energy	69.01	4.50	4.05	3.09	3.15	4.56%	2.00%	3.67%	6.52%	6.56%	8.23%
A	NextEra Energy, Inc.	85.62	5.25	5.00	2.64	2.88	3.36%	8.50%	6.10%	6.13%	11.86%	9.46%
B++	Xcel Energy Inc.	27.94	1.95	1.90	1.11	1.15	4.12%	4.50%	4.53%	6.98%	8.62%	8.65%
	Mean						3.26%	5.86%	4.01%	3.17%	9.12%	7.28%
	Median						3.36%	2.00%	4.53%	6.13%	6.56%	8.23%
	Weighted Average										10.56%	8.12%
	Merrill Lynch Required Return - Independent Power Producers & Energy Traders											11.50%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column c was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

**2014 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
	<u>Merchant Generators</u>				
B+	Calpine Corp.	NMF	6.10%	8.60%	7.35%
B+	NRG Energy, Inc.	5.00%	NMF	-15.30%	-5.15%
B	AES Corp.	22.00%	5.90%	6.90%	11.60%
C+	Atlantic Power	NMF	NMF	NMF	0.00%
	<u>Diversified Electric Utilities</u>				
A	Duke Energy	4.00%	3.60%	3.40%	3.67%
A	NextEra Energy, Inc.	5.50%	6.20%	6.60%	6.10%
B++	Xcel Energy Inc.	4.50%	4.30%	4.80%	4.53%
	Mean	8.20%	5.22%	2.50%	4.01%
	Median	5.00%	5.90%	5.70%	4.53%
	Weighted Average				4.64%
	Merrill Lynch 5 Year Growth Estimate - Independent Power Producers & Energy Traders				-2.00%

Sources: Columns a, b and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

2014 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 12/31/2013	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity Ratio
<u>Merchant Generators</u>												
B+	Calpine Corp.	435,207,726	19.51	8,490.90	10,869.00	0.00	8,490.90	19,359.90	56.14%	0.00%	43.86%	1.28
B+	NRG Energy, Inc.	323,416,260	28.72	9,288.51	15,802.00	249.00	9,288.51	25,339.51	62.36%	0.98%	36.66%	1.66
B	AES Corp.	742,327,115	14.51	10,771.17	18,533.00	0.00	10,771.17	29,304.17	63.24%	0.00%	36.76%	1.72
C+	Atlantic Power	120,044,879	3.48	417.76	1,688.20	221.30	417.76	2,327.26	72.54%	9.51%	17.95%	2.64
Mean									63.57%	2.62%	33.81%	1.82
Median									62.80%	0.49%	36.71%	1.69
Weighted Average									61.43%	0.62%	37.95%	1.62
<u>Diversified Electric Utilities</u>												
A	Duke Energy	705,908,295	69.01	48,714.73	37,359.00	0.00	48,714.73	86,073.73	43.40%	0.00%	56.60%	0.77
A	NextEra Energy, Inc.	430,681,556	85.62	36,874.95	23,862.00	0.00	36,874.95	60,736.95	39.29%	0.00%	60.71%	0.65
B++	Xcel Energy Inc.	497,570,936	27.94	13,902.13	10,816.00	0.00	13,902.13	24,718.13	43.76%	0.00%	56.24%	0.78
Mean									42.15%	0.00%	57.85%	0.73
Median									43.40%	0.00%	56.60%	0.77
Weighted Average									42.00%	0.00%	58.00%	0.73
Damodaran Online - Power Industry									46.0%	0.0%	54.0%	0.85
Damodaran Online - Utility (General) Industry									41.0%	0.0%	59.1%	0.69
Fidelity.com Research Independent Power Producers & Energy Traders												2.36
Fidelity.com Research Electric Utilities												1.36

Sources: Columns a, b, c, f and g were extracted from Value Line.

Column d was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

2014 Capitalization Rate Study
Electric Generation Facilities
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	Company Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
<u>Merchant Generators</u>								
B+	Calpine Corp.	1.10	1.18	1.17	1.15	0.10	1.24	0.58
B+	NRG Energy, Inc.	1.05	0.67	0.57	0.76	0.30	1.78	0.37
B	AES Corp.	1.25	1.26	1.34	1.28	0.25	2.02	0.56
C+	Atlantic Power	0.70	0.41	0.44	0.52	0.00	1.71	0.21
Mean					0.93	0.16	1.69	0.43
Median					0.96	0.18		0.47
Weighted					1.05	0.22		0.49
<u>Diversified Electric Utility</u>								
A	Duke Energy	0.65	0.28	0.34	0.42	0.34	0.64	0.30
A	NextEra Energy, Inc.	0.70	0.51	0.47	0.56	0.27	0.71	0.37
B++	Xcel Energy Inc.	0.65	0.28	0.31	0.41	0.34	0.75	0.28
Mean					0.67	0.32	0.70	0.31
Median					0.65	0.34		0.30
Weighted					0.47	0.32		0.32
Merchant Generators Relevered Beta based on 40% Debt Capital Structure							0.69	³
Diversified Electric Utilities Relevered Beta based on 40% Debt Capital Structure							0.45	³
Merrill Lynch Adjusted Beta Independent Power Producers & Energy Traders							1.05	

Sources: Columns a, b, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's 2013 tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Local Exchange Companies								
279	Pacific Bell Telephone Company	A++	A2	70%	30%	12.25%	4.91%	10.05%
201	Verizon California, Inc.	A++	A3	70%	30%	12.25%	5.06%	10.09%
284	Citizens Telecommunications Company of California, Inc.	B	Not Rated	65%	35%	13.30%	5.48%	10.56%
294	SureWest Telephone	C++	Not Rated	65%	35%	13.30%	5.48%	10.56%
	Other Local Exchange Companies	Not Rated	Not Rated	65%	35%	15.65%	5.63%	12.14%
Wireless Companies								
2606	AT&T Mobility LLC	A++	A2	70%	30%	11.73%	4.91%	9.68%
2532	Los Angeles SMSA Ltd., Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2552	Fresno MSA Limited Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2559	Cellco Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2669	California RSA #4 Partnership	A++	A3	70%	30%	11.73%	5.06%	9.73%
2748	T-Mobile West Corporation	B	Not Rated	65%	35%	13.04%	5.63%	10.44%
2720	Sprint Telephony PCS, L.P.	C++	B3	65%	35%	14.87%	6.34%	11.88%
	Other Wireless Companies¹	Not Rated	Not Rated	55%	45%	16.96%	7.86%	12.87%
	Wireless Reseller Companies	Not Rated	Not Rated	55%	45%	19.06%	8.37%	14.25%
Interexchange Companies								
2310	AT&T Communications	A++	A2	70%	30%	13.04%	4.91%	10.60%
2274	MCI Communications Services, Inc.	A++	A3	70%	30%	13.04%	5.06%	10.64%
2372	MCI Metro Access Transmission Services, LLC	A++	A3	70%	30%	13.04%	5.06%	10.64%
2463	CenturyLink, Inc.	B+	Baa3	65%	35%	14.61%	5.48%	11.41%
7522	tw telecom of california l.p.	B	B1	65%	35%	14.61%	6.05%	11.61%
2014	Sprint Communications Company, L.P.	C++	B3	60%	40%	16.96%	6.34%	12.71%
7761	Level 3 Communications, LLC	C++	Caa2	60%	40%	16.96%	7.86%	13.32%
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	21.68%	7.86%	15.46%
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	24.82%	8.37%	17.42%

¹ Includes Radio Telephone and Paging Companies

**2014 Capitalization Rate Study
Telecommunications Companies
Industry Notes**

- Staff conducted a consolidated capitalization rate study for the local exchange, wireless, and interexchange industries due to the increasing convergence of these three industries. Separate capitalization rates were estimated for the companies in each of the three industries based on the relative risk experienced by each group of companies within their respective industries.
- Staff relied on the Discounted Cash Flow Model (DCF) and Capital Asset Pricing Model (CAPM) ex post and ex ante in the development of equity rates.
- MetroPCS Communications, Inc. was removed from the 2014 Capitalization Rate Study sample as it was acquired by T-Mobile USA, Inc. in 2013.
- T-Mobile US, Inc. was added to the 2014 Capitalization Rate Study sample. T-Mobile USA, Inc. acquired Metro PCS Communications, Inc. in 2013. The combined company, renamed T-Mobile US, Inc., became a publicly traded company on the New York Stock Exchange under the ticker symbol *TMUS*.
- Warwick Valley Telephone Company changed its name to Alteva, Inc. and its trading ticker symbol to *ALTV*.

**2014 Capitalization Rate Study
Telecommunications Companies - Local Exchange
Flotation Cost Adjustment**

Value Line Rating	Recommended Rate	Equity		Debt			
		Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A++	11.70%	4.50%	12.25%	Aa2	4.59%	1.70%	4.67%
B	12.70%	4.50%	13.30%	Aa3	4.67%	1.70%	4.75%
C++	14.95%	4.50%	15.65%	A1	4.75%	1.70%	4.83%
Other Local Exchange Companies	14.95%	4.50%	15.65%	A2	4.83%	1.70%	4.91%
				A3	4.97%	1.70%	5.06%
				Baa1	5.11%	1.70%	5.20%
				Baa2	5.25%	1.70%	5.34%
				Baa3	5.39%	1.70%	5.48%
				Not Rated	5.53%	1.70%	5.63%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where: k_u = The cost of capital unadjusted for flotation costs

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

**2014 Capitalization Rate Study
Telecommunications Companies - Wireless
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A++	11.20%	4.50%	11.73%	Aa2	4.59%	1.70%	4.67%
B	12.45%	4.50%	13.04%	Aa3	4.67%	1.70%	4.75%
C++	14.20%	4.50%	14.87%	A1	4.75%	1.70%	4.83%
Other Wireless Companies ¹	16.20%	4.50%	16.96%	A2	4.83%	1.70%	4.91%
Wireless Reseller Companies	18.20%	4.50%	19.06%	A3	4.97%	1.70%	5.06%
				Baa1	5.11%	1.70%	5.20%
				Baa2	5.25%	1.70%	5.34%
				Baa3	5.39%	1.70%	5.48%
				Ba1	5.53%	1.70%	5.63%
				Ba2	5.67%	1.70%	5.77%
				Ba3	5.81%	1.70%	5.91%
				B1	5.95%	1.70%	6.05%
				B2	6.09%	1.70%	6.20%
				B3	6.23%	1.70%	6.34%
				Not Rated	7.73%	1.70%	7.86%
				Not Rated	8.23%	1.70%	8.37%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where: k_u = The cost of capital unadjusted for flotation costs

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

¹ Includes Radio Telephone and Paging Companies

**2014 Capitalization Rate Study
Telecommunications Companies - Interexchange
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A++	12.45%	4.50%	13.04%	Aa2	4.59%	1.70%	4.67%
B++, B	13.95%	4.50%	14.61%	Aa3	4.67%	1.70%	4.75%
C++	16.20%	4.50%	16.96%	A1	4.75%	1.70%	4.83%
Other Interexchange Carriers	20.70%	4.50%	21.68%	A2	4.83%	1.70%	4.91%
Other Interexchange Resellers	23.70%	4.50%	24.82%	A3	4.97%	1.70%	5.06%
				Baa1	5.11%	1.70%	5.20%
				Baa2	5.25%	1.70%	5.34%
				Baa3	5.39%	1.70%	5.48%
				Ba1	5.53%	1.70%	5.63%
				Ba2	5.67%	1.70%	5.77%
				Ba3	5.81%	1.70%	5.91%
				B1	5.95%	1.70%	6.05%
				B2	6.09%	1.70%	6.20%
				B3	6.23%	1.70%	6.34%
				Not Rated	7.73%	1.70%	7.86%
				Not Rated	8.23%	1.70%	8.37%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where: k_u = The cost of capital unadjusted for flotation costs

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

2014 Capitalization Rate Study
Telecommunications Companies
Comparison of Return on Common Equity

Description	A++			B++, B+, B			C++, C+, C		
	2014	2013	Change	2014	2013	Change	2014	2013	Change
Discounted Cash Flow Analysis									
E/P Ratio - Mean	7.15%	7.02%	0.13%	4.84%	6.61%	-1.77%	4.58%	3.46%	1.13%
E/P Ratio - Median	7.15%	7.02%	0.13%	5.38%	6.64%	-1.27%	4.58%	3.46%	1.13%
Dividend Yield + Dividend Growth - Mean	7.77%	7.54%	0.24%	6.73%	6.89%	-0.16%	7.90%	9.74%	-1.85%
Dividend Yield + Dividend Growth - Median	7.77%	7.54%	0.24%	6.78%	7.41%	-0.63%	7.90%	9.74%	-1.85%
Weighted Average (Div. Yield + Div. Growth)	7.84%	7.69%	0.15%	6.67%	6.42%	0.25%	7.90%	9.74%	-1.85%
Dividend Yield + Earnings Growth - Mean	12.61%	12.51%	0.10%	11.36%	12.67%	-1.31%	14.36%	12.41%	1.95%
Dividend Yield + Earnings Growth - Median	12.61%	12.51%	0.10%	10.06%	14.11%	-4.06%	14.36%	12.41%	1.95%
Weighted Average (Div. Yield + Earn. Growth)	12.57%	12.41%	0.16%	10.01%	12.42%	-2.42%	14.36%	12.41%	1.95%
CAPM Analysis									
Ex Ante	8.27%	7.95%	0.32%	9.17%	9.14%	0.03%	10.62%	10.96%	-0.34%
Ex Post	7.87%	7.19%	0.68%	8.69%	8.20%	0.49%	10.01%	9.74%	0.27%
Recommended Rates									
Local Exchange	11.70%	11.50%	0.20%	12.70%	12.50%	0.20%	14.95%	14.75%	0.20%
Wireless	11.20%	11.00%	0.20%	12.45%	12.25%	0.20%	14.20%	14.00%	0.20%
Interexchange	12.45%	12.25%	0.20%	13.95%	13.75%	0.20%	16.20%	16.00%	0.20%

**2014 Capitalization Rate Study
Telecommunications Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/13	Est. 2014 Earnings	2013 Earnings	2013 Dividends	Est. 2014 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
A++	AT&T Inc.	35.16	2.70	2.48	1.80	1.84	5.23%	4.00%	6.50%	7.68%	9.23%	11.73%
A++	Verizon Communications	49.14	3.25	2.82	2.06	2.12	4.31%	2.00%	9.17%	6.61%	6.31%	13.48%
	Mean						4.77%	3.00%	7.83%	7.15%	7.77%	12.61%
	Median						4.77%	3.00%	7.83%	7.15%	7.77%	12.61%
	Weighted Average										7.84%	12.57%
B++	Atlantic Tele-Network, Inc.	56.57	1.95	1.65	0.77	1.10	1.94%	7.50%	6.50%	3.45%	9.44%	8.44%
B+	CenturyLink, Inc.	31.85	2.70	2.68	2.16	2.16	6.78%	-5.00%	3.10%	8.48%	6.78%	9.88%
B	Frontier Communications	4.65	0.25	0.23	0.40	0.40	8.60%	-8.50%	2.70%	5.38%	0.10%	11.30%
B	NTELOS Holdings	20.23	1.35	1.30	1.26	1.68	8.30%	0.00%	5.57%	6.67%	8.30%	13.87%
B	Shenandoah Telecom	25.67	1.25	1.20	0.36	0.36	1.40%	2.50%	16.00%	4.87%	3.90%	17.40%
B	Telephone & Data Systems	25.78	-0.15	0.90	0.51	0.53	2.06%	4.00%	8.00%	-0.58%	6.06%	10.06%
B	Windstream Corp.	7.98	0.45	0.30	1.00	1.00	12.53%	0.00%	-4.00%	5.64%	12.53%	8.53%
	Mean						5.95%	0.07%	5.41%	4.84%	6.73%	11.36%
	Median						6.78%	0.00%	5.57%	5.38%	6.78%	10.06%
	Weighted Average										6.67%	10.01%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.
Column c was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.
Column j is an average of Value Line, Zacks.com, and ThomsonReuters.com.

**2014 Capitalization Rate Study
Telecommunications Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/13	Est. 2014 Earnings	2013 Earnings	2013 Dividends	Est. 2014 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
C++	Consolidated Communications	19.63	0.90	0.95	1.55	1.55	7.90%	0.00%	6.47%	4.58%	7.90%	14.36%
	Mean						7.90%	0.00%	6.47%	4.58%	7.90%	14.36%
	Median						7.90%	0.00%	6.47%	4.58%	7.90%	14.36%
	Weighted Average										7.90%	14.36%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.
Column c was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.
Column j is an average of Value Line, Zacks.com, and ThomsonReuters.com.

**2014 Capitalization Rate Study
Telecommunications Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A++	AT&T Inc.	7.00%	6.00%	6.50%	6.50%
A++	Verizon Communications	8.00%	9.40%	10.10%	9.17%
	Mean	7.50%	7.70%	8.30%	7.83%
	Median	7.50%	7.70%	8.30%	7.83%
	Weighted Average				7.77%
B++	Atlantic Tele-Network, Inc.	6.50%	NMF	NMF	6.50%
B+	CenturyLink, Inc.	8.00%	0.00%	1.30%	3.10%
B	Frontier Communications	9.50%	9.10%	-10.50%	2.70%
B	NTELOS Holdings	7.00%	6.70%	3.00%	5.57%
B	Shenandoah Telecom	16.00%	NMF	NMF	16.00%
B	Telephone & Data Systems	4.00%	12.00%	NMF	8.00%
B	Windstream Corp.	8.50%	0.00%	-20.50%	-4.00%
	Mean	8.50%	5.56%	-6.68%	5.41%
	Median	8.00%	6.70%	-4.60%	5.57%
	Weighted Average				2.24%

Sources: Columns a and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Telecommunications Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
C++	Consolidated Communications	13.50%	3.90%	2.00%	6.47%
	Mean	13.50%	3.90%	2.00%	6.47%
	Median	13.50%	3.90%	2.00%	6.47%
	Weighted Average				6.47%

Sources: Columns a and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Telecommunications Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/13	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
A++	AT&T Inc.	5,268,000,000	35.16	185,222.88	68,350.00	0.00	185,222.88	253,572.88	26.95%	0.00%	73.05%
A++	Verizon Communications	2,861,750,762	49.14	140,626.43	90,938.00	0.00	140,626.43	231,564.43	39.27%	0.00%	60.73%
	Mean								33.11%	0.00%	66.89%
	Median								33.11%	0.00%	66.89%
	Weighted Average								32.83%	0.00%	67.17%
B++	Atlantic Tele-Network, Inc.	15,756,840	56.57	891.36	0.00	0.00	891.36	891.36	0.00%	0.00%	100.00%
B+	CenturyLink, Inc.	591,070,797	31.85	18,825.60	20,391.00	0.00	18,825.60	39,216.60	52.00%	0.00%	48.00%
B+	U.S. Cellular	84,098,314	41.82	3,516.99	878.90	0.00	3,516.99	4,395.89	19.99%	0.00%	80.01%
B	Alteva, Inc	5,724,182	8.17	46.77	0.20	0.50	46.77	47.47	0.42%	1.05%	98.53%
B	Frontier Communications	999,547,000	4.65	4,647.89	7,887.30	0.00	4,647.89	12,535.19	62.92%	0.00%	37.08%
B	NTELOS Holdings	21,505,352	20.23	435.05	486.10	0.00	435.05	921.15	52.77%	0.00%	47.23%
B	Shenandoah Telecom	24,016,499	25.67	616.50	230.20	0.00	616.50	846.70	27.19%	0.00%	72.81%
B	T-Mobile US, Inc.	728,696,706	9.94	7,243.25	20,449.00	0.00	7,243.25	27,692.25	73.84%	0.00%	26.16%
B	Telephone & Data Systems	108,491,184	25.78	2,796.90	1,721.10	0.80	2,796.90	4,518.80	38.09%	0.02%	61.89%
B	tw telecom inc.	144,065,951	30.47	4,389.69	1,822.80	0.00	4,389.69	6,212.49	29.34%	0.00%	70.66%
B	Windstream Corp.	596,073,169	7.98	4,756.66	8,760.80	0.00	4,756.66	13,517.46	64.81%	0.00%	35.19%
	Mean								38.31%	0.10%	61.60%
	Median								38.09%	0.00%	61.89%
	Weighted Average								56.53%	0.00%	43.47%

Sources: Columns a, c, f, and g were extracted from Value Line.

Column d was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Telecommunications Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/13	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
C++	Consolidated Communications	40,111,518	19.63	787.39	1,202.20	0.00	787.39	1,989.59	60.42%	0.00%	39.58%
C++	General Communication	40,461,000	11.15	451.14	1082.70	0.00	451.14	1,533.84	70.59%	0.00%	29.41%
C++	Level 3 Communications	223,605,574	33.17	7,417.00	8,537.00	0.00	7,417.00	15,954.00	53.51%	0.00%	46.49%
C++	Sprint Nextel	3,942,164,011	10.75	42,378.26	32,420.00	0.00	42,378.26	74,798.26	43.34%	0.00%	56.66%
C+	Alaska Communications	48,577,654	2.12	102.98	444.80	0.00	102.98	547.78	81.20%	0.00%	18.80%
C+	Cincinnati Bell	208,037,869	3.56	740.61	2,108.20	129.40	740.61	2,978.21	70.79%	4.34%	24.87%
C	Leap Wireless	79,371,522	17.40	1,381.06	3,368.20	0.00	1,381.06	4,749.26	70.92%	0.00%	29.08%
	Mean								64.40%	0.62%	34.98%
	Median								70.59%	0.00%	29.41%
	Weighted Average								47.94%	0.13%	51.93%

Sources: Columns a, c, f, and g were extracted from Value Line.
Column d was extracted from Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Telecommunications Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Rating		
	A++	B++, B+, B	C++, C+, C
Expected Future Return, S&P 500	10.90%	10.90%	10.90%
Less: Risk Free Return - 30 Year Treasury Bonds ¹	3.97%	3.97%	3.97%
Risk Premium	6.93%	6.93%	6.93%
Beta ²	0.62	0.75	0.96
Adjusted Risk Premium	4.30%	5.20%	6.65%
Risk Free Return - 30 Year Treasury Bonds ¹	3.97%	3.97%	3.97%
Projected Equity Yield	8.27%	9.17%	10.62%

¹ WSJ.com, December 31, 2013

² The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

**2014 Capitalization Rate Study
Telecommunications Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Rating		
	A++	B++, B+, B	C++, C+, C
Common Stock Return, S&P 500 (1928-2013) ¹	11.50%	11.50%	11.50%
Less: 10 Year Treasury Bonds (1928-2013) ¹	5.21%	5.21%	5.21%
Risk Premium	6.29%	6.29%	6.29%
Beta ²	0.62	0.75	0.96
Adjusted Risk Premium	3.90%	4.72%	6.04%
Risk Free Return - 30 Year Treasury Bonds ³	3.97%	3.97%	3.97%
Projected Equity Yield	7.87%	8.69%	10.01%

¹ Damodaran Online, January 5, 2014

² The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

³ WSJ.com, December 31, 2013

**2014 Capitalization Rate Study
Telecommunications Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta ¹
A++	AT&T Inc.	0.70	0.54	0.74	0.66	0.32	0.36	0.53
A++	Verizon Communications	0.65	0.47	0.72	0.61	0.35	0.50	0.46
	Mean	0.68	0.51	0.73	0.64		0.43	0.50
	Median	0.68	0.51	0.73	0.64		0.43	0.50
	Weighted Average				0.64		0.43	0.50
B++	Atlantic Tele-Network, Inc.	1.00	1.13	1.12	1.08	0.40	0.32	0.91
B+	CenturyLink, Inc.	0.75	0.55	0.81	0.70	0.38	0.80	0.47
B+	U.S. Cellular	1.00	0.81	0.50	0.77	0.33	0.25	0.66
B	Alteva, Inc.	0.55	0.55	0.51	0.54	0.40	0.02	0.53
B	Frontier Communications	0.90	0.70	0.86	0.82	0.35	1.61	0.40
B	NTELOS Holdings	0.75	0.91	0.82	0.83	0.41	1.23	0.48
B	Shenandoah Telecom.	0.90	1.23	1.66	1.26	0.42	0.43	1.01
B	T-Mobile US, Inc.	NMF	0.93	1.23	1.08	0.36	2.82	0.38
B	Telephone & Data Systems	1.05	0.90	0.92	0.96	0.33	0.53	0.71
B	tw telecom inc.	1.05	0.99	0.83	0.96	0.25	0.43	0.72
B	Windstream Corp.	0.90	0.87	0.77	0.85	0.38	1.35	0.46
	Mean	0.89	0.87	0.91	0.89		0.89	0.61
	Median	0.90	0.90	0.83	0.85		0.53	0.53
	Weighted Average				0.86		1.41	0.48

Sources: Columns a, c, and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.
Column h is a 5-year average Debt to Equity Ratio, where historical information is available.

¹ Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

**2014 Capitalization Rate Study
Telecommunications Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta ¹
C++	Consolidated Communications	0.80	0.95	0.79	0.85	0.37	1.64	0.42
C++	General Communication	1.15	1.17	1.08	1.13	0.25	2.14	0.44
C++	Level 3 Communications	0.90	0.97	1.25	1.04	0.40	2.61	0.41
C++	Sprint Nextel	1.05	NIL	1.09	1.07	0.40	1.55	0.55
C+	Alaska Communications	0.85	0.89	1.24	0.99	0.30	3.43	0.29
C+	Cincinnati Bell	1.05	1.28	0.74	1.02	0.40	3.49	0.33
C	Leap Wireless	1.45	1.57	0.87	1.30	0.40	3.56	0.41
	Mean	1.04	1.14	1.01	1.06		2.63	0.41
	Median	1.05	1.07	1.08	1.04		2.61	0.41
	Weighted Average				1.07		1.89	0.51

		A++	B++, B+, B	C++, C+, C
A++:	Relevered beta based on 30% debt capital structure	0.62 ²	----	----
	Relevered beta based on 30% debt capital structure and a weighted average beta	0.63 ²	----	----
B++, B+, B:	Relevered beta based on 35% debt capital structure	----	0.81 ²	----
	Relevered beta based on 35% debt capital structure and a weighted average beta	----	0.63 ²	----
C++, C+, C:	Relevered beta based on 40% debt capital structure	----	----	0.57 ²
	Relevered beta based on 40% debt capital structure and a weighted average beta	----	----	0.72 ²

Sources: Columns a, c, and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.
Column h is a 5-year average Debt to Equity Ratio, where historical information is available.

¹ Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

² Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
402	CALNEV Pipe Line, L.L.C.	NR-1	NR-b	70%	30%	12.30%	5.46%	10.25%
461	SFPP, L.P.	NR-1	NR-b	70%	30%	12.30%	5.46%	10.25%
479	Chevron Pipe Line Company	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
480	Phillips 66 Pipeline LLC	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
486	Pacific Pipeline System LLC	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
492	San Pablo Bay Pipeline Company LLC	NR-2	NR-b	70%	30%	12.83%	5.46%	10.62%
	Other Pipeline Companies	NR-3	NR-c	70%	30%	13.87%	6.48%	11.66%

**2014 Capitalization Rate Study
Pipeline Companies
Industry Notes**

- Staff relied primarily on the Discounted Cash Flow model in the development of equity rates.
- Magellan Midstream Partners, L. P. was removed from the Capitalization Rate Study as staff determined that its capital structure was not representative a typical oil pipeline company.

**2014 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
NR-1	11.75%	4.50%	12.30%	NR-b	5.37%	1.70%	5.46%
NR-2	12.25%	4.50%	12.83%	NR-c	6.37%	1.70%	6.48%
NR-3	13.25%	4.50%	13.87%				

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.

**2014 Capitalization Rate Study
Pipeline Companies
Comparison of Return on Common Equity**

Description	2014	2013	Change
E/P Ratio - Mean	3.58%	4.42%	-0.84%
E/P Ratio - Median	3.63%	4.17%	-0.54%
Dividend Yield + Dividend Growth - Mean	10.49%	11.36%	-0.87%
Dividend Yield + Dividend Growth - Median	10.72%	12.61%	-1.89%
Dividend Yield + Earnings Growth - Mean	11.90%	11.46%	0.44%
Dividend Yield + Earnings Growth - Median	12.68%	11.84%	0.84%
Capital Asset Pricing Model (CAPM) - Ex Ante	8.28%	7.87%	0.41%
Capital Asset Pricing Model (CAPM) - Ex Post	7.88%	7.12%	0.76%

2014 recommended equity rates:

11.75% for Common Carrier product lines

12.25% for Common Carrier crude oil lines

13.25% for all other pipelines

**2014 Capitalization Rate Study
Pipeline Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line		Stock	2013	2013	2014	2014	2014	2014	E/P	Div Yld+	Div Yld+
Rating	Company Name	Price	Earnings	Dividends	Est Div	Dividend	Hist. Div	Avg. Erns	Ratio	Div Gwth	Erns Gwth
		12/31/13				Yield	Growth	Growth	(d/c)	(g+h)	(g+i)
B++	Enbridge Energy Partners, L.P.	29.74	0.80	2.15	1.22	4.10%	2.50%	3.03%	2.69%	6.60%	7.14%
B+	Buckeye Partners, L.P.	70.83	3.10	4.23	4.28	6.04%	1.50%	9.07%	4.38%	7.54%	15.11%
B+	Enterprise Product Partners, L.P.	66.33	2.85	2.70	2.92	4.40%	9.50%	7.23%	4.30%	13.90%	11.64%
B+	Kinder Morgan Energy Partners, L.P.	80.78	2.40	5.26	5.60	6.93%	7.00%	6.80%	2.97%	13.93%	13.73%
		Mean					5.13%	6.53%	3.58%	10.49%	11.90%
		Median					4.75%	7.02%	3.63%	10.72%	12.68%
		Weighted Average									12.18%

Sources: Columns a, b, d, e, f and h were extracted from the Value Line.

Column c was extracted from the Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

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

**2014 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++	Enbridge Energy Partners, L.P.	-7.50%	4.00%	12.60%	3.03%
B+	Buckeye Partners, L.P.	7.50%	8.00%	11.70%	9.07%
B+	Enterprise Product Partners, L.P.	10.00%	5.20%	6.50%	7.23%
B+	Kinder Morgan Energy Partners, L.P.	11.00%	4.50%	4.90%	6.80%
	Mean	5.25%	5.43%	8.93%	6.53%
	Median	8.75%	4.85%	9.10%	7.02%
	Weighted Average				6.82%

Sources: Columns a, b, and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Pipeline Companies
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	10.90%
Less: Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Risk Premium	6.93%
Relevered Beta ²	0.62
Adjusted Risk Premium	4.31%
Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Projected Return on Common Equity	8.28%

¹ WSJ.com on December 31, 2013

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

**2014 Capitalization Rate Study
Pipeline Companies
Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return, S&P 500 (1928 - 2013) ¹	11.50%
Less: 10 Year Treasury Bonds (1928 - 2013) ¹	5.21%
Risk Premium	6.29%
Relevered Beta ²	0.62
Adjusted Risk Premium	3.91%
Risk Free Return 30 Year Treasury Bonds ³	3.97%
Projected Return on Common Equity	7.88%

¹ Damodaran Online, January 5, 2014

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

³ WSJ.com on December 31, 2013

**2014 Capitalization Rate Study
Pipeline 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	Tax Rate	Debt Equity Ratio	Unlevered Beta ¹
B++	Enbridge Energy Partners, L.P.	0.90	0.52	0.74	0.72	0.40	0.53	0.55
B+	Buckeye Partners, L.P.	0.75	0.23	0.33	0.44	0.40	0.33	0.36
B+	Enterprise Product Partners, L.P.	0.80	0.60	0.64	0.68	0.40	0.27	0.59
B+	Kinder Morgan Energy Partners, L.P.	0.75	0.42	0.32	0.50	0.40	0.53	0.38
	Mean	0.80	0.44	0.51	0.58	0.40	0.41	0.47
	Median	0.78	0.47	0.49	0.59	0.40	0.43	0.46
	Weighted Average				0.60		0.39	0.49
	Relevered beta based on 30% Debt Capital Structure				0.59 ²			
	Relevered beta based on 30% Debt Capital Structure and a weighted average beta				0.62 ²			

Sources: Columns a, b, and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Pipeline Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j
Value Line Rating	Moody Bond Rating	Company Name	Partnership Units Outstanding (\$million)	Unit Price 12/31/13	Market Value Equity (\$million)	Long Term Debt (\$million)	Total Capital (\$million)	Long Term Debt %	Equity %
B++	NR	Enbridge Energy Partners, L.P.	324,614.04	29.74	9,654.02	5,073.30	14,727.32	34.45%	65.55%
B+	NR	Buckeye Partners, L.P.	115,032.02	70.83	8,147.72	2,676.90	10,824.62	24.73%	75.27%
B+	NR	Enterprise Product Partners, L.P.	925,104.50	66.33	61,362.18	16,481.60	77,843.78	21.17%	78.83%
B+	NR	Kinder Morgan Energy Partners, L.P.	437,825.60	80.78	35,367.55	18,910.00	54,277.55	34.84%	65.16%
		Total			114,531.47	43,141.80	157,673.27		
		Mean						28.80%	71.20%
		Median						29.59%	70.41%
		Weighted Average						27.36%	72.64%

Recommended Capital Structure for Common Carrier Pipelines for lien date January 1, 2014:

Debt - 30%
Equity - 70%

Sources: Columns a, d, and g were extracted from the Value Line Investment Survey Reports.

Column e was extracted from the Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Pipeline Companies
Debt Yield Rate**

Average of Industrial and Public Utility Bond Yield:

	Aa Industrial/Utility Average	4.67%	
	A Industrial/Utility Average	4.87%	
		4.67%	Aa
		4.87%	A
	Baa Industrial/Utility Average	5.37%	
	Recommended	5.37%	Baa/Ba

	Bond Rating	Industrial	Public Utility	Average
	Aaa	4.57%	N/A	4.57%
	Aa	4.74%	4.59%	4.67%
	A	4.90%	4.83%	4.87%
	Baa	5.49%	5.25%	5.37%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages as of December 31, 2013.

**California State Board of Equalization
State-Assessed Properties Division
2014 Capitalization Rate Study
Railroad Companies**

SBE No.	Company Name	Capital Structure				Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
804	BNSF Railway Company	A+	Baa2	80%	20%	13.61%	5.46%	11.98%
843	Union Pacific Railroad Company	A+	Baa2	80%	20%	13.61%	5.46%	11.98%
802	Central Oregon & Pacific Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
810	California Northern Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
813	Pacific Harbor Lines	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
822	Pacific Sun Railroad, LLC	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
826	Sacramento Valley Railroad, LLC	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
850	Modesto & Empire Traction Company	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
865	San Diego & Imperial Valley Railroad Co. Inc.	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
878	Stockton Terminal and Eastern Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
882	Trona Railway Co.	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
897	San Joaquin Valley Railroad Company	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
899	Arizona & California Railroad	NR-1	NR-1	60%	40%	15.71%	6.99%	12.22%
	Other Railroad Companies	NR-2	NR-2	60%	40%	15.97%	8.01%	12.78%

**2014 Capitalization Rate Study
Railroad Companies
Industry Notes**

- Staff relied upon the results of the following models in the development of equity rates:
 1. Discounted Cash Flow Model
 2. Capital Asset Pricing Model – ex post and ex ante

**2014 Capitalization Rate Study
Railroad Companies
Flotation Cost Adjustment**

Equity							
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B++, B+	13.00%	4.50%	13.61%	Baa2	5.37%	1.70%	5.46%
NR-1	15.00%	4.50%	15.71%	NR-1 ¹	6.87%	1.70%	6.99%
NR-2	15.25%	4.50%	15.97%	NR-2 ²	7.87%	1.70%	8.01%

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

¹NR-1: Represents short line railroad companies with stable historical income. An additional 150 basis points were added to the Baa2 bond rate to represent the additional risk premium.

²NR-2: Represents short line railroad companies without stable historical income patterns. An additional 250 basis points were added to the Baa2 bond rate to represent the additional risk premium.

**2014 Capitalization Rate Study
Railroad Companies
Comparison of Return on Common Equity**

Description	2014	2013	Change
E/P Ratio - Mean	6.59%	8.86%	-2.27%
E/P Ratio - Median	6.53%	9.22%	-2.69%
Dividend Yield + Dividend Growth - Mean	15.30%	19.03%	-3.74%
Dividend Yield + Dividend Growth - Median	15.89%	19.73%	-3.84%
Dividend Yield + Earnings Growth - Mean	13.90%	16.46%	-2.56%
Dividend Yield + Earnings Growth - Median	13.50%	17.13%	-3.63%
Capital Asset Pricing Model - Ex Post	11.29%	10.44%	0.85%
Capital Asset Pricing Model - Ex Ante	12.04%	11.79%	0.25%
State-Assessed Properties Division Recommendation:	13.00%	13.25%	-0.25%

**2014 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:					
A+	Union Pacific Corp.	12.00%	12.50%	14.10%	12.87%
A	Norfolk Southern Corp.	9.50%	12.50%	11.50%	11.17%
B++	CSX Corp.	12.00%	11.30%	10.50%	11.27%
	Mean	11.17%	12.10%	12.03%	11.77%
	Median	12.00%	12.50%	11.50%	11.27%
	Weighted Average				12.10%

Sources: Columns a and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2014 Capitalization Rate Study
Railroad Companies
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	10.90%
Less: Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Risk Premium	6.93%
Relevered Beta	1.16
Adjusted Risk Premium	8.07%
Risk Free Return 30 Year Treasury Bonds ¹	3.97%
Projected Return on Common Equity	12.04%

¹ WSJ.com, December 31, 2013

**2014 Capitalization Rate Study
Railroad Companies
Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Returns, S&P 500 (1928 - 2013) ¹	11.50%
Less: 10 Year Treasury Bonds (1928 - 2013) ¹	5.21%
Risk Premium	6.29%
Relevered Beta	1.16
Adjusted Risk Premium	7.32%
Risk Free Return 30 Year Treasury Bonds ²	3.97%
Projected Return on Common Equity	11.29%

¹ Damodaran Online, January 5, 2014

² WSJ.com, December 31, 2013

**2014 Capitalization Rate Study
Railroad Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
Class 1 Railroads:								
A+	Union Pacific Corp.	1.15	1.13	1.11	1.13	0.38	0.19	1.01
A	Norfolk Southern Corp.	1.15	1.24	1.26	1.22	0.38	0.33	1.01
B++	CSX Corp.	1.25	1.33	1.15	1.24	0.37	0.36	1.01
	Mean	1.18	1.23	1.17	1.20		0.29	1.01
	Median	1.15	1.24	1.15	1.22		0.33	1.01
	Weighted Average				1.18		0.26	1.01
	Relevered Beta based on 20% Debt Capital Structure						1.16 ³	
	Relevered Beta based on 20% Debt Capital Structure and a weighted average Beta						1.16 ³	
Non-Class 1 Railroads:								
B+	Genesee & Wyoming	1.30	1.44	1.45	1.40	0.27	0.24	1.19
	Mean	1.30	1.44	1.45	1.40		0.24	1.19
	Median	1.30	1.44	1.45	1.40		0.24	1.19
	Weighted Average				1.40		0.24	1.19
	Relevered Beta based on 40% Debt Capital Structure						1.67 ³	
	Relevered Beta based on 40% Debt Capital Structure and a weighted average Beta						1.67 ³	

Sources: Columns a, c, and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

¹ Average debt-to-equity ratio over the last five years.

² Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt-to-equity ratio, tc is the company's 2013 tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt-to-equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**2014 Capitalization Rate Study
Railroad Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j
Value Line Rating	Moody's Bond Rating	Company Name	Common Stock Outstanding (\$million)	Common Stock Price 12/31/13	Market Value Equity (\$million)	Long Term Debt (\$million)	Total Capital (\$million)	Long Term Debt %	Common Equity %
Class 1 Railroads:									
A+	NR	Union Pacific Corp.	461	167.31	77,058	8,764	85,822	10.21%	89.79%
A	NR	Norfolk Southern Corp.	309	92.69	28,633	8,499	37,132	22.89%	77.11%
B++	NR	CSX Corp.	1,014	28.68	29,073	8,787	37,860	23.21%	76.79%
		Total					<u>160,814</u>		
						Mean		18.77%	81.23%
						Median		22.89%	77.11%
						Weighted Average		16.20%	83.80%
 Non-Class 1 Railroads:									
B+	NR	Genesee & Wyoming	53	96.10	5,140	1,586	6,726	23.58%	76.42%
		Total					<u>6,726</u>		
						Mean		23.58%	76.42%
						Median		23.58%	76.42%
						Weighted Average		23.58%	76.42%

Recommended Capital Structures for lien date January 1, 2014		Equity	Debt
Class 1 Railroads:		80%	20%
Non-Class 1 Railroads:		60%	40%

Sources: Columns a, d, and g were extracted from Value Line.
Column e was extracted from the Finance.Yahoo.com and represents December 31, 2013 closing stock prices.

**2014 Capitalization Rate Study
Railroad Companies
Interpolation of Railroad Bond Yield**

Yield Increment from Moody's Average Bond Ratings			
a	b	c	d
Moody's Average Rating	Moody's Average Bond Yield	Number of Increments	Incremental Increase (b/c)
Aa = Aa2	4.67%		
A = A2	<u>4.87%</u>		
Difference	<u><u>0.20%</u></u>	3	0.07%
A = A2	4.87%		
Baa = Baa2	<u>5.37%</u>		
Difference	<u><u>0.51%</u></u>	3	0.17%

Interpolated Railroad Bond Yield			
a	b	c	d
Moody's Average Rating	Moody's Average Bond Yield	Incremental Increase	Interpolated Bond Yield
Aa2	4.665%		4.67%
Aa3		0.07%	4.73%
A1		0.07%	4.80%
A2	4.865%		4.87%
A3		0.17%	5.03%
Baa1		0.17%	5.20%
Baa2	5.370%		5.37%
Baa3		0.17%	5.54%

**2014 Capitalization Rate Study
Railroad Companies
Debt Yield Rates**

Bond Rating	Industrial	Public Utility	Average
Aaa	4.57%	N/A	4.57%
Aa	4.74%	4.59%	4.67%
A	4.90%	4.83%	4.87%
Baa	5.49%	5.25%	5.37%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages as of December 31, 2013.