

1 Q WHAT IS THE SUBJECT MATTER OF YOUR TESTIMONY?

2 A My testimony will address the overall rate of return including return on equity, and
3 embedded debt cost of Laclede Gas Company ("Laclede") and its two operating units,
4 Laclede Gas ("LAC") and Missouri Gas Energy ("MGE") (collectively "the
5 Companies").

6 **I. SUMMARY**

7 Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS AND CONCLUSIONS ON
8 RATE OF RETURN.

9 A I recommend the Missouri Public Service Commission ("Commission") award a return
10 on common equity of 9.20%, which is the approximate midpoint of my recommended
11 range of 8.90% to 9.40%. My recommended return on equity will fairly compensate
12 the Companies for their current market cost of common equity, and it will mitigate the
13 Companies' claimed revenue deficiency in this proceeding while providing a return
14 that fairly balances the interests of customers and shareholders.

15 My recommended return on equity is reasonable when combined with a
16 capital structure that: (1) preserves the Companies' investment grade bond rating;
17 (2) maintains their financial integrity and access to external capital; and (3) does so at
18 reasonable cost to customers. I will provide detail on any concerns I have with the
19 Companies' proposed capital structure in my rebuttal testimony.

20 **II. RATE OF RETURN**

21 Q PLEASE DESCRIBE THIS SECTION OF YOUR TESTIMONY.

22 A In this section of my testimony, I will explain the analysis I performed to determine the
23 reasonable rate of return in this proceeding and present the results of my analysis. I

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1 begin my estimate of a fair return on equity by reviewing the authorized returns
2 approved by the regulatory commissions in various jurisdictions, the market
3 assessment of the regulated utility industry investment risk, credit standing, and stock
4 price performance. I used this information to get a sense of the market's perception
5 of the risk characteristics of regulated utility investments in general, which is then
6 used to produce a refined estimate of the market's return requirement for assuming
7 investment risk similar to the Companies' utility operations.

8 As described below, I find the credit rating outlook of the industry to be strong,
9 supportive of the industry's financial integrity and access to capital. Further,
10 regulated utilities' stocks have exhibited strong price performance over the last
11 several years, which is evidence of utility access to capital.

12 Based on this review of credit outlooks and stock price performance, I
13 conclude that the market continues to embrace the regulated utility industry as a safe-
14 haven investment and views utility equity and debt investments as low-risk securities.

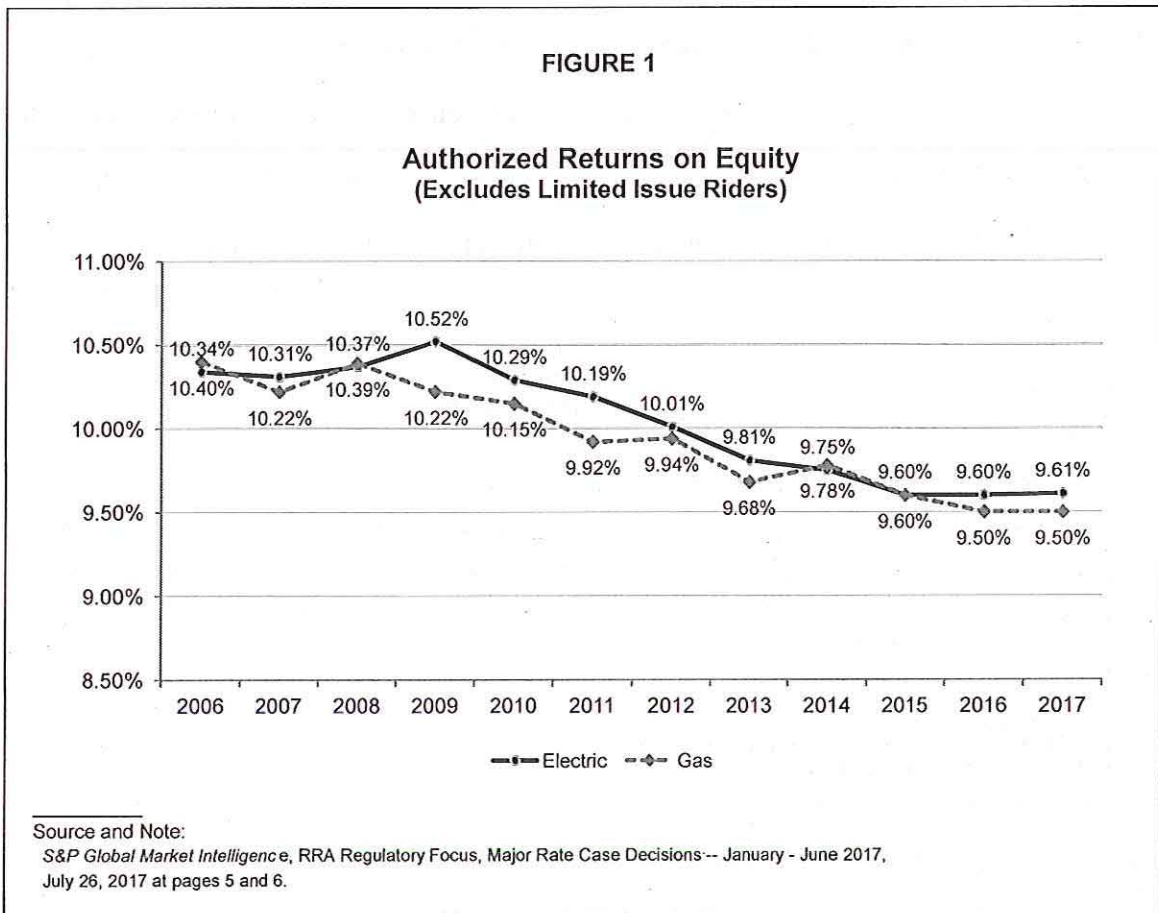
15 I also assessed the projections of changes in interest rates over the next
16 three- to five-year period, along with the Federal Reserve's monetary policy impacts
17 that could affect cost of capital, interest rates and a fair return on equity in this
18 proceeding. This information is used to assess whether or not current capital market
19 costs are reasonable estimates of the capital market costs that will prevail during the
20 period that rates determined in this proceeding will be in effect.

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1 **II.A. Industry Authorized Returns on Equity,**
2 **Access to Capital, And Credit Strength**

3 Q PLEASE DESCRIBE THE OBSERVABLE EVIDENCE ON TRENDS IN
4 AUTHORIZED RETURNS ON EQUITY FOR REGULATED UTILITIES, UTILITIES'
5 CREDIT STANDING, AND UTILITIES' ACCESS TO CAPITAL USED TO FUND
6 INFRASTRUCTURE INVESTMENT.

7 A Authorized returns on equity for both electric and gas utilities have been steadily
8 declining over the last ten years, as illustrated in Figure 1 below. More recent
9 authorized returns on equity for electric and gas utilities have declined downward to
10 about 9.50%. This trend continued during the first two quarters of 2017.



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1 While the declines in authorized returns on equity are public knowledge, and align
 2 with declining capital market costs, utilities are maintaining a stable investment grade
 3 credit outlook, and have been able to attract large amounts of capital at low cost to
 4 fund very large capital programs.

5 **Q PLEASE DESCRIBE THE ACTIVITY OF CREDIT RATING AGENCIES WITH**
 6 **RESPECT TO THE REGULATED UTILITY INDUSTRY DURING THE PERIOD OF**
 7 **DECLINING RETURNS ON EQUITY.**

8 **A** The credit rating changes for the electric and gas utility industry reflect a significant
 9 strengthening of the industry credit outlook.

10 The natural gas utility industry credit rating changes are shown in Table 1
 11 below. The gas industry changes in credit ratings are similar to the electric utilities.
 12 In 2009, 42% of the gas industry had a credit rating in the BBB category, but by the
 13 end of 2016, 66% of gas utilities' credit ratings improved to A- or above.

<u>Description</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017*</u>
A or higher	57%	57%	50%	50%	38%	33%	33%	44%	56%
A-	0%	0%	0%	0%	38%	33%	33%	22%	11%
BBB+	14%	14%	38%	38%	13%	22%	33%	33%	33%
BBB	14%	14%	0%	0%	0%	0%	0%	0%	0%
BBB-	14%	14%	13%	13%	13%	11%	0%	0%	0%
Below BBB-	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

* As of August 30, 2017.
 Source: S&P CAPITAL IQ, downloaded 6/20/2017 and 8/30/2017.
 Note: Subsidiary rating is used if parent not rated.

14 As shown in Table 2 below, in 2008, approximately 69% of the electric utility
 15 industry was rated from BBB- to BBB+, 18% had a bond rating better than BBB+, and
 16 around 13% of the industry was below investment grade. This industry rating

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1 improved steadily over the subsequent eight years. By second quarter 2017, the
 2 industry no longer had below investment grade companies, 62% were in the range of
 3 BBB- to BBB+, and 37% of the industry had a bond rating above BBB+. Overall, the
 4 improvement to the credit rating of the electric utility industry has been very
 5 significant.

TABLE 2
S&P Ratings by Category
Electric Utilities
(Year End)

<u>Description</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017 Q1</u>
A or higher	8%	7%	9%	8%	6%	3%	3%	3%	6%	6%
A-	10%	15%	14%	14%	17%	20%	21%	22%	28%	31%
BBB+	23%	22%	17%	19%	14%	17%	32%	33%	36%	31%
BBB	23%	27%	31%	35%	36%	49%	37%	33%	22%	20%
BBB-	23%	20%	17%	14%	17%	6%	3%	3%	8%	11%
Below BBB-	<u>13%</u>	<u>10%</u>	<u>11%</u>	<u>11%</u>	<u>11%</u>	<u>6%</u>	<u>5%</u>	<u>6%</u>	<u>0%</u>	<u>0%</u>
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: EEI 2017 Q1 Credit Ratings. Tab V. S&P Rating by Comp. Category.

6 Moody's comments on this improved credit standing of regulated utility
 7 companies in its publication, "Regulation Remains a Credit Supportive Ratings Driver
 8 Two Years After Sector-Wide Upgrades." Moody's stated as follows:

9 **Summary**

10 In January and February 2014, we upgraded the ratings of 147 US
 11 regulated electric and gas utility debt issuers as part of a sector-wide
 12 rating action that reflected our more favorable view of the relative
 13 credit supportiveness of US utility regulation. Factors supporting this
 14 view include better cost-recovery provisions, reduced regulatory lag,
 15 and generally fair and open relationships between utilities and their
 16 state regulators.¹

¹Moody's Investor Service: "U.S. Regulated Utilities: Regulation Remains a Credit Supportive Ratings Driver Two Years After Sector-Wide Upgrades," November 6, 2015, emphasis added.

1 Q HAVE CREDIT RATING AGENCIES COMMENTED ON DECLINING AUTHORIZED
2 RETURNS ON EQUITY?

3 A Yes. Credit rating agencies recognize the declining trend in authorized returns and
4 the expectation that regulators will continue lowering the returns for U.S. utilities while
5 maintaining a stable credit profile. Specifically, Moody's states:

6 **Lower Authorized Equity Returns Will Not Hurt Near-Term Credit**
7 **Profiles**

8 The credit profiles of US regulated utilities will remain intact over the
9 next few years despite our expectation that regulators will continue to
10 trim the sector's profitability by lowering its authorized returns on equity
11 (ROE).²

12 Further, in a recent report, Standard & Poor's ("S&P") states:

13 **2. Earned returns will remain in line with authorized returns**

14 Authorized returns on equity granted by U.S. utility regulators in rate
15 cases this year have been steady at about 9.5%. Utilities have been
16 adept at earning at or very near those authorized returns in today's
17 economic and fiscal environment. A slowly recovering economy,
18 natural gas and electric prices coming down and then stabilizing at
19 fairly low levels, and the same experience with interest rates have led
20 to a perfect "non-storm" for utility ratepayers and regulators, with
21 utilities benefitting alongside those important constituencies. Utilities
22 have largely used this protracted period of favorable circumstances to
23 consolidate and institutionalize the regulatory practices that support
24 earnings and cash flow stability.³

25 Q HAVE UTILITIES BEEN ABLE TO ACCESS EXTERNAL CAPITAL TO SUPPORT
26 INFRASTRUCTURE CAPITAL PROGRAMS?

27 A Yes. In its March 21, 2017 Capital Expenditure Update report, *RRA Financial Focus*,
28 a division of S&P Global Market Intelligence, made several comments about utility
29 capital investments:

²*Moody's Investors Service*, "US Regulated Utilities: Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles," March 10, 2015.

³*Standard & Poor's Ratings Services*: "Corporate Industry Credit Research: Industry Top Trends 2016, Utilities," December 9, 2015, at 23, emphasis added.

1 Capital expenditures throughout the U.S. power and gas sectors in
2 2017 are projected to reach an all-time high of \$117.5 billion. The
3 nation's largest electric and gas utilities are investing in infrastructure
4 to comply with sweeping environmental regulations, implement new
5 technologies, build new natural gas, solar and wind generation and
6 upgrade aging transmission and distribution systems. Moreover, their
7 near-term capital spending forecasts continue to escalate Total
8 CapEx in 2016 for the companies in the RRA utility universe was
9 \$110.3 billion.

10 We expect considerable levels of spending to serve as the basis for
11 solid profit expansion for the foreseeable future, although our data
12 indicates that CapEx in the industry may fall modestly in 2018 and
13 2019.

14 * * *

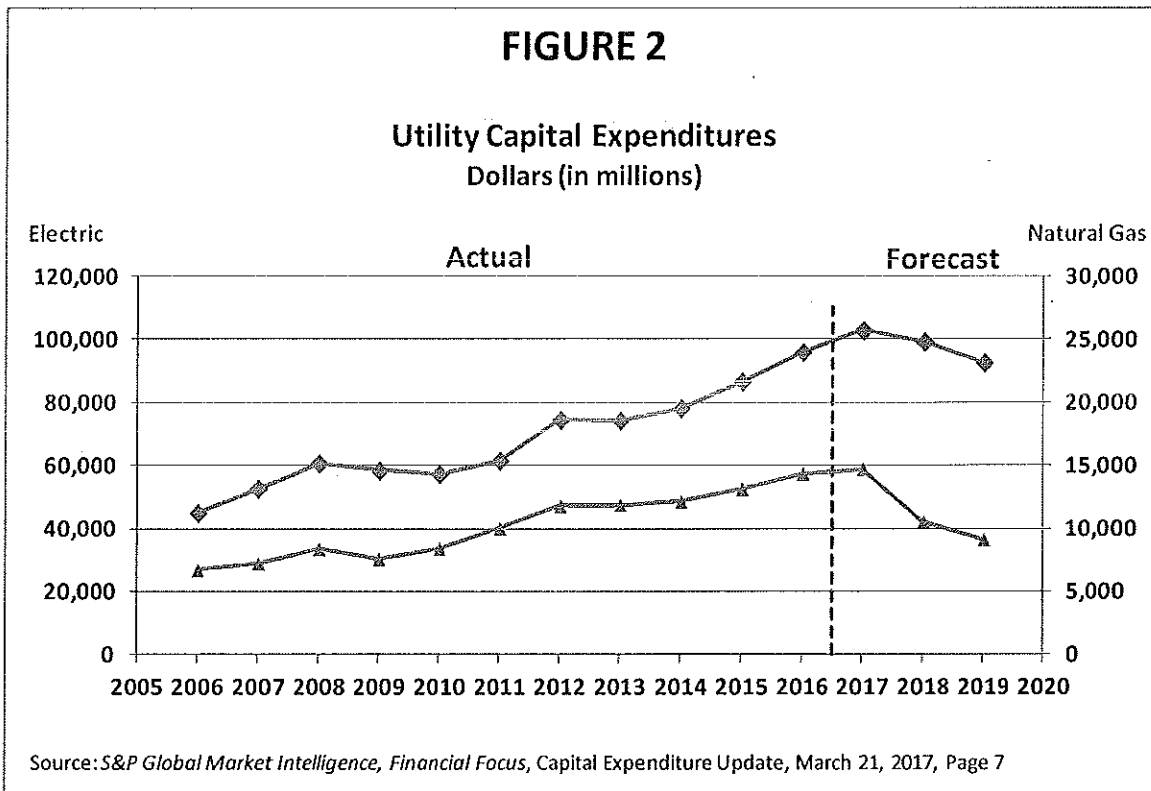
15 From a natural gas perspective, many utilities are participating in the
16 sizable and ongoing expansion of the nation's gas midstream network.
17 In addition, replacement of mature gas distribution infrastructure has
18 gained widespread momentum and is likely to continue at material
19 levels for many years, considering state and federal mandates to
20 address safety.

21 * * *

22 For gas utilities, the CapEx-to-operating cash flow ratio has fluctuated
23 far more substantially than for electric utilities. Gas utilities saw large
24 swings in the ratio from 2000 through 2012, with a peak of 1.5x in 2000
25 and a low of 0.7 in 2009. Since reaching 1.4x in 2012, the ratio
26 appears to have stabilized somewhat, although 2015 was slightly lower
27 at 1.0x before jumping up again to 1.3x in 2016.⁴

28 Indeed, historical versus projected outlooks for the electric and gas industries'
29 capital investments are shown in Figure 2 below. As shown in this graph, gas
30 industry investment outlooks are expected to be considerably higher in the forecast
31 (2016-2019), relative to the last ten-year historical period. As noted by S&P Global
32 Market Intelligence, this capital investment is exceeding internal sources of funds to
33 the gas utilities, requiring them to seek external capital to fund capital investments.

⁴S&P Global Market Intelligence, RRA Financial Focus: "Capital Expenditure Update: Utilities continue to ramp up CapEx plans," March 21, 2017, at 1 and 5.



1 As shown in Figure 2 above, the capital investments for the electric utility
 2 industry are significantly higher than the capital investments for the gas industry but
 3 they follow the same trend over the historical and forecasted period.

4 **Q IS THERE EVIDENCE OF ROBUST VALUATIONS OF GAS UTILITY**
 5 **SECURITIES?**

6 **A**Yes. Robust valuations are an indication that utilities can sell securities at high
 7 prices, which is a strong indication that they can access equity capital under
 8 reasonable terms and conditions, and at relatively low cost. As shown on Schedule
 9 MPG-1, the historical valuation of the gas utilities followed by *Value Line*, based on a
 10 price-to-earnings ("P/E") ratio, price-to-cash flow ("P/CF") ratio, and market price-to-
 11 book value ("M/B") ratio, indicates utility security valuations today are very strong and

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1 robust relative to the last 11 years. These strong valuations of utility stocks indicate
2 that utilities have access to equity capital under reasonable terms and at lower costs.

3 Q HOW SHOULD THE COMMISSION USE THIS MARKET INFORMATION IN
4 ASSESSING A FAIR RETURN FOR THE COMPANIES?

5 A Market evidence is quite clear that capital market costs are near historically low
6 levels. Authorized returns on equity have fallen to the low to mid 9.0% area; utilities
7 continue to have access to large amounts of external capital to fund large capital
8 programs; and utilities' investment grade credit standings are stable to improving.
9 The Commission should carefully weigh all this important observable market evidence
10 in assessing a fair return on equity for the Companies.

11 II.B. Regulated Utility Industry Market Outlook

12 Q PLEASE DESCRIBE THE CREDIT RATING OUTLOOK FOR REGULATED
13 UTILITIES.

14 A Regulated utilities' credit ratings have improved over the last few years and the
15 outlook has been labeled "Stable" by credit rating agencies. Credit analysts have
16 also observed that utilities have strong access to capital at attractive pricing (i.e., low
17 capital costs), which has supported very large capital programs.

18 S&P recently published a report titled "Corporate Industry Credit Research:
19 Industry Top Trends 2017, Utilities." In that report, S&P noted the following:

20 – **Ratings Outlook:** Rating trends across regulated utilities remain
21 mostly stable supported by stable regulatory oversight, slow but steady
22 demand for utility services, and tempered by aggressive capital
23 spending that will keep credit metrics from improving. Emerging new
24 political trends in historically stable regions like Europe and the U.S.
25 may have far-reaching effect on utilities over time, but S&P Global
26 Ratings sees little immediate influence from those factors in 2017.

1 Sovereign rating developments can influence utility ratings in some
2 countries and we expect them to vary in different parts of the globe.

3 * * *

4 – **Assumptions:** Sales growth at most utilities is closely tied to the
5 general economic outlook in its service territory, which can vary
6 considerably from utility to utility. We project solid regulatory support
7 for utility earnings and cash flow, with the occasional exception due to
8 specific political or policy issues at the local level. Capital spending will
9 continue to be elevated in most areas, with substantial infrastructure
10 needs.

11 * * *

12 – **Industry Trends:** The utility industry in most regions is stable,
13 consistent with our general ratings outlook and the nature of the
14 essential products and services utilities sell.⁵

15 Similarly, Fitch states:

16 **Stable Financial Performance:** The stable financial performance of
17 Utilities, Power & Gas (UPG) issuers continues to support a sound
18 credit profile for the sector, with 93% of the UPG portfolio carrying
19 investment-grade ratings as of June 30, 2015, including 65% in the
20 'BBB' rating category. Second-quarter 2015 LTM [Long-Term Maturity]
21 leverage metrics remained relatively unchanged year over year (YOY)
22 while interest coverage metrics modestly improved. Fitch Ratings
23 expects this trend to broadly sustain for the remainder of 2015, driven
24 by positive recurring factors.⁶

25 Moody's recent comments on the U.S. Utility Sector state as follows:

26 **2017 Outlook - Timely Cost-Recovery Drives Stable Outlook**

27 Our outlook for the US regulated utilities industry is stable. This
28 outlook reflects our expectations for the fundamental business
29 conditions in the industry over the next 12 to 18 months.

30 **A credit-supportive regulatory environment is the main driver of**
31 **our stable outlook.** Our stable outlook for the US regulated utility
32 industry is based on our expectation that utilities will continue to
33 recover costs in a timely manner and maintain stable cash flows.⁷

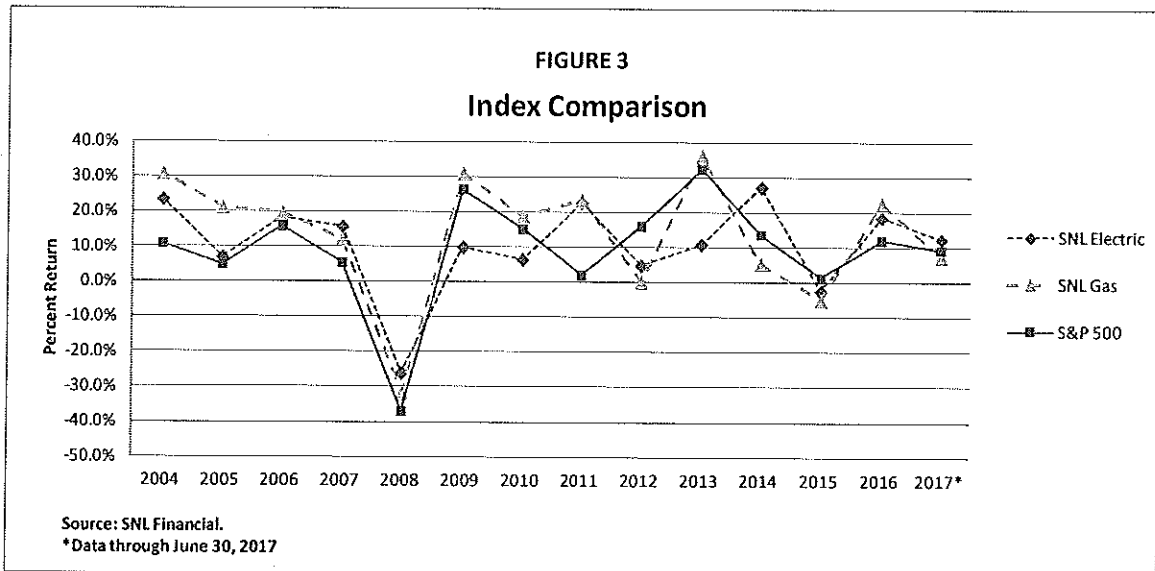
⁵Standard & Poor's Global Ratings: "Industry Top Trends 2017, Utilities," February 16, 2017, at 1, emphasis added.

⁶Fitch Ratings: "U.S. Utilities, Power & Gas Data comparator," September 21, 2015, at 1 and 7, emphasis added.

⁷Moody's Investors Service: "Regulated Utilities - US: 2017 Outlook – Timely Cost-Recovery Drives Stable Outlook," November 4, 2016, at 1, emphasis added.

1 Q PLEASE DESCRIBE UTILITY STOCK PRICE PERFORMANCE OVER THE LAST
2 SEVERAL YEARS.

3 A As shown in Figure 3 below, SNL Financial ("SNL") has recorded utility stock price
4 performance compared to the market. The industry's stock performance data from
5 2004 through the second quarter of 2017 shows that the SNL Electric and Gas
6 Company Indexes have largely outperformed the market through downturns and
7 recoveries. This relatively stable price performance for utilities supports my
8 conclusion that utility stock investments are regarded by market participants as a
9 moderate- to low-risk investment.



10 Q HAVE YOU CONSIDERED CONSENSUS MARKET OUTLOOKS FOR CHANGES
11 IN INTEREST RATES IN FORMING YOUR RECOMMENDED RETURN ON EQUITY
12 IN THIS CASE?

13 A Yes. The outlook for changes in interest rates has been highly impacted by
14 expectations that the Federal Reserve Bank Open Market Committee ("FOMC") will
15 raise short-term interest rates, and outlooks for inflation and GDP growth after the

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1 recent Presidential election. The consensus economists are expecting continued
2 increases in the Federal Funds Rate as the FOMC continues to normalize interest
3 rates in response to the strengthening of the U.S. economy.

4 This is evident from a comparison of current and forecasted changes in the
5 Federal Funds Rate, as shown in Table 3 below. However, while the Federal Funds
6 Rate is expected to increase over the next several years, consensus economists are
7 not projecting significant increases in long-term interest rates. This is also illustrated
8 in Table 3 below.

TABLE 3

Blue Chip Financial Forecasts
Projected Federal Funds Rate, 30-Year Treasury Bond Yields, and GDP Price Index

<u>Publication Date</u>	<u>3Q</u> <u>2016</u>	<u>4Q</u> <u>2016</u>	<u>1Q</u> <u>2017</u>	<u>2Q</u> <u>2017</u>	<u>3Q</u> <u>2017</u>	<u>4Q</u> <u>2017</u>	<u>1Q</u> <u>2018</u>	<u>2Q</u> <u>2018</u>	<u>3Q</u> <u>2018</u>	<u>4Q</u> <u>2018</u>
<u>Federal Funds Rate</u>										
Dec-16	0.4	0.5	0.7	0.8	1.0	1.1	1.3			
Jan-17		0.4	0.7	0.8	1.0	1.2	1.3	1.5		
Feb-17		0.5	0.7	0.8	1.0	1.1	1.3	1.6		
Mar-17		0.5	0.7	0.8	1.0	1.2	1.4	1.6		
Apr-17			0.7	0.9	1.1	1.3	1.5	1.7	1.9	
May-17			0.7	1.0	1.2	1.3	1.5	1.7	1.9	
Jun-17			0.7	1.0	1.2	1.4	1.5	1.7	1.9	
Jul-17				0.9	1.2	1.3	1.5	1.7	1.9	2.1
Aug-17				0.9	1.2	1.3	1.5	1.6	1.8	2.0
<u>T-Bond, 30 yr.</u>										
Dec-16	2.3	2.8	3.0	3.1	3.2	3.3	3.4			
Jan-17		2.8	3.1	3.2	3.3	3.5	3.6	3.7		
Feb-17		2.8	3.1	3.2	3.4	3.5	3.6	3.7		
Mar-17		2.8	3.1	3.2	3.3	3.5	3.6	3.7		
Apr-17			3.1	3.2	3.3	3.5	3.6	3.7	3.8	
May-17			3.0	3.1	3.3	3.4	3.5	3.6	3.7	
Jun-17			3.0	3.0	3.2	3.4	3.5	3.6	3.7	
Jul-17				2.9	3.0	3.2	3.3	3.5	3.6	3.7
Aug-17				2.9	3.0	3.1	3.3	3.4	3.6	3.7
<u>GDP Price Index</u>										
Dec-16	1.5	2.1	1.9	2.1	2.1	2.1	2.2			
Jan-17		2.1	2.0	2.1	2.1	2.1	2.2	2.2		
Feb-17		2.1	2.0	2.1	2.0	2.1	2.1	2.2		
Mar-17		2.1	2.2	2.0	2.1	2.1	2.2	2.2		
Apr-17			2.2	1.9	2.1	2.2	2.3	2.2	2.2	
May-17			2.3	1.7	2.1	2.1	2.2	2.2	2.2	
Jun-17			2.2	1.5	2.0	2.1	2.2	2.1	2.2	
Jul-17				1.3	1.9	2.0	2.1	2.1	2.1	2.2
Aug-17				1.0	1.7	2.0	2.1	2.1	2.1	2.2

Source and Note:

Blue Chip Financial Forecasts, December 2016 through August 2017.
 Actual Yields in Bold

1 I note that the four increases in the Federal Funds Rate experienced over the
 2 last few years have not caused comparable changes in outlooks for changes in long-

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1 term interest rates. This is illustrated on my attached Schedule MPG-2. As shown on
2 that schedule, the actions taken by the FOMC to increase the Federal Funds Rate
3 have simply flattened the yield curve, and have not resulted in an increase in long-
4 term interest rates. This is significant because cost of common equity is impacted by
5 long-term interest rates, not short-term interest rates. As a result, the recent
6 increases in the Federal Funds Rate, and the expectation of continued increases in
7 the Federal Funds Rate, have not, and are not expected to, significantly impact long-
8 term interest rates.

9 In the most recent Federal Reserve meeting, it also announced a strategy to
10 begin to unwind its balance sheet position in long-term securities toward the end of
11 this year. Currently, the Federal Reserve has built up over approximately \$4.7 trillion
12 of Treasury and mortgage-backed securities as part of a quantitative easing ("QE")
13 program that spanned 2008 to 2014. During this QE program, the Federal Reserve
14 procured long-term securities in an effort to support the Federal Reserve's monetary
15 policy and mitigate long-term interest rates.

16 There has been concern that if the Federal Reserve starts to unwind this
17 balance sheet position, it will cause an increase in long-term interest rates. However,
18 the Federal Reserve announced that if it does unwind its balance sheet position, it will
19 do so in small increments so as to not have a significant impact on long-term interest
20 rates.⁸

21 For these reasons, the Federal Reserve actions on short-term interest rates
22 have not resulted in increases in long-term interest rates. Further, the Federal
23 Reserve's proposed plan for unwinding its balance sheet position is not expected to
24 have a significant impact on long-term interest rates. All this indicates that the

⁸Board of Governors of the Federal Reserve System, Press Release, "Federal Reserve Issues FOMC Statement," June 14, 2017.

1 Federal Reserve QE monetary policy changes related to a strengthening economy
2 have not and are not expected to increase long-term interest rates. Further, this
3 outlook is reflected in consensus economists' forecasts of long-term interest rates,
4 which indicate a relatively low capital market cost period for at least the intermediate
5 period.

6 Q HAVE PROJECTIONS OF INTEREST RATES MODERATED MORE RECENTLY
7 RELATIVE TO THE LAST FEW YEARS?

8 A Yes. This is shown below in Table 4. There, I show the prevailing quarterly average
9 Treasury bond yield, and the projections of Treasury bond yields two years out, and
10 five to ten years out. Significantly, current Treasury bond yields in 2017 have been
11 relatively moderate and comparable to those in 2015 and 2016; however, projections
12 of future Treasury bond yields are now much lower five to ten years out than they
13 were over the last three years. Indeed, in 2014 Treasury bond yields five to ten years
14 out were projected to increase to 5.6% from 3.26% to 3.79% prevailing yields. These
15 five to ten-year projections have been steadily declining through 2015 and 2016.
16 Most recently, long-term projected Treasury bond yields are now expected to remain
17 relatively low in the 4.2% to 4.5% area.

18 While the accuracy of projected increases in interest rates is uncertain, what is
19 significant is that consensus market economists now are projecting out relatively low
20 levels of capital market costs over the next five to ten years. This outlook represents
21 a material moderation in capital market costs over this intermediate forecast period.

TABLE 4

30-Year Treasury Bond Yield Actual Vs. Projection

<u>Description</u>	<u>Quarterly Average</u>	<u>2-Year Projected</u>	<u>5- to 10-Year Projected</u>
<u>2014</u>			
Q1	3.79%	4.4%	5.0% - 5.5%
Q2	3.69%	4.5%	
Q3	3.44%	4.4%	5.3% - 5.6%
Q4	3.26%	4.3%	
<u>2015</u>			
Q1	2.97%	4.0%	4.9% - 5.1%
Q2	2.55%	3.7%	
Q3	2.83%	4.0%	4.8% - 5.0%
Q4	2.84%	3.9%	
<u>2016</u>			
Q1	2.96%	3.8%	4.5% - 4.8%
Q2	2.72%	3.6%	
Q3	2.64%	3.4%	4.3% - 4.6%
Q4	2.30%	3.1%	
<u>2017</u>			
Q1	2.82%	3.7%	4.2% - 4.5%
Q2	3.05%	3.8%	

Sources: *Blue Chip Financial Forecasts*,
December 2013 through June 1, 2017.

1 **II.C. The Companies' Investment Risk**

2 Q PLEASE DESCRIBE THE MARKET'S ASSESSMENT OF THE INVESTMENT RISK
3 OF THE COMPANIES.

4 A The market's assessment of the Companies' investment risk is described by credit
5 rating analysts' reports. The Companies' current corporate bond ratings from S&P

1 and Moody's are A- and A1, respectively.⁹ The Companies' outlook from both S&P
2 and Moody's is "Stable." S&P assesses the Companies' credit rating as part of
3 Spire's corporate umbrella.

4 Specifically, S&P states:

5 **Outlook: Stable**

6 The outlook on Laclede Gas Co. reflects the outlook of its
7 parent Spire Inc. (Spire). The stable outlook on Spire Inc. is
8 based on S&P Global Ratings' assessment of the company's
9 excellent business and intermediate financial risk profiles.
10 Under our base-case scenario, we expect that funds from
11 operations (FFO) to debt will range from 16%-18% over the
12 next few years, with debt to EBITDA that remains around 4.5x-
13 5x. Fundamental to our forecast is our expectation that Spire
14 will continue to both generate the majority of its cash flow from
15 its regulated natural gas utility business and effectively manage
16 regulatory risk, enabling the utility to earn its allowed return on
17 equity.

18 * * *

19 **Business Risk: Excellent**

20 Laclede Gas Co.'s business risk assessment is based on the
21 cash flow stability at its two regulated gas distribution operating
22 divisions, Laclede Gas and Missouri Gas Energy (MGE). Both
23 operating divisions are located within the state of Missouri, a
24 regulatory environment which has enabled the company to
25 consistently earn at or close to its authorized returns. Laclede
26 Gas Co. benefits from the infrastructure system replacement
27 surcharge (ISRS), a mechanism designed to facilitate recovery
28 of eligible capital expenditures (e.g., spending on aging
29 infrastructure) with limited regulatory lag. We expect that the
30 company will continue to focus on ISRS-eligible investments
31 over the next several years, leading to distribution rate base
32 growth and supporting the company's strong track record of
33 operational performance.

34 **Financial Risk: Intermediate**

35 Under our base-case scenario, we project that Laclede Gas
36 Co.'s core credit ratios will remain at the upper end of the
37 intermediate category, with FFO to debt ranging from 20%-22%
38 and debt to EBITDA remaining around 3.75x. Importantly, we

⁹SNL Financial.

1 expect negative discretionary cash flows for the forecasted
2 period as a result of consistent dividends and elevated capital
3 spending. As a result, we expect the company to require
4 external funding to supplement regulatory recovery to maintain
5 cash flow coverage measures. We assess Laclede Gas'
6 financial risk profile by using our most relaxed financial
7 benchmarks, accounting for the company's lower operating risk
8 business model and our view of the company's effective
9 management of regulatory risk. Our assessments of Laclede
10 Gas Co.'s excellent business risk and intermediate financial
11 risk profiles results in a split score of 'a+/a'. We choose the
12 lower anchor of 'a' based on the limited scale, scope, and
13 diversification of Laclede compared with similarly rated peers.¹⁰

14 **II.D. Embedded Cost of Debt**

15 **Q WHAT IS THE COMPANIES' EMBEDDED COST OF LONG-TERM DEBT?**

16 **A** The Companies are proposing an embedded cost of long-term debt of 4.159% as
17 developed on Ms. Ahern's Schedule PMA-D1. I have used the Companies' proposed
18 cost of long-term debt in my calculation of an overall weighted cost of capital.

19 **II.E. Return on Equity**

20 **Q PLEASE DESCRIBE WHAT IS MEANT BY A "UTILITY'S COST OF COMMON**
21 **EQUITY."**

22 **A** A utility's cost of common equity is the expected return that investors require on an
23 investment in the utility. Investors expect to earn their required return from receiving
24 dividends and through stock price appreciation.

¹⁰Standard & Poor's RatingsDirect. "Summary: Laclede Gas Co.," July 17, 2017, at 3-4.

1 Q PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A REGULATED
2 UTILITY'S COST OF COMMON EQUITY.

3 A In general, determining a fair cost of common equity for a regulated utility has been
4 framed by two hallmark decisions of the U.S. Supreme Court: Bluefield Water Works
5 & Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923) and Fed.
6 Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944).

7 These decisions identify the general financial and economic standards to be
8 considered in establishing the cost of common equity for a public utility. Those
9 general standards provide that the authorized return should: (1) be sufficient to
10 maintain financial integrity; (2) attract capital under reasonable terms; and (3) be
11 commensurate with returns investors could earn by investing in other enterprises of
12 comparable risk.

13 Q PLEASE DESCRIBE THE METHODS YOU HAVE USED TO ESTIMATE
14 LACLEDE/MGE'S COST OF COMMON EQUITY.

15 A I have used several models based on financial theory to estimate the Companies'
16 cost of common equity. These models are: (1) a constant growth Discounted Cash
17 Flow ("DCF") model using consensus analysts' growth rate projections; (2) a constant
18 growth DCF using sustainable growth rate estimates; (3) a multi-stage growth DCF
19 model; and (4) a Capital Asset Pricing Model ("CAPM"). I have applied these models
20 to a group of publicly traded utilities with investment risk similar to the Companies.

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1 **II.F. Risk Proxy Group**

2 Q PLEASE DESCRIBE HOW YOU IDENTIFIED A PROXY UTILITY GROUP TO
3 ESTIMATE LACLEDE/MGE'S CURRENT MARKET COST OF EQUITY.

4 A My gas utility proxy group is the same as the proxy group relied on by the Companies'
5 witness, Ms. Ahern, with one exception. I excluded Chesapeake Utilities Corp.
6 because it is not rated by S&P or Moody's.

7 Q WHY DID YOU EXCLUDE CHESAPEAKE UTILITIES FOR NOT HAVING A BOND
8 RATING FROM S&P OR MOODY'S?

9 A Credit rating agencies undertake a detailed assessment of the business and financial
10 risk in awarding a bond rating. This bond rating is available to public capital market
11 participants, and is a generally independent assessment of the investment risk of the
12 subject company. While a bond rating generally assesses the credit strength of the
13 company, it is useful in determining the predictability and strength of a company's
14 cash flows to meet its financial obligations including cash needed to meet common
15 equity shareholders' investment return outlooks. For these reasons, credit ratings
16 from S&P's and Moody's are information that is available to the investment
17 community to assess the overall investment risk of the underlying company.

18 Because Chesapeake Utilities does not have a bond rating from S&P or
19 Moody's, it is not possible to determine whether or not the credit rating agencies have
20 found that its investment risk is reasonably similar to that of the Companies or any of
21 the other proxy group companies. Because the information was not available to
22 determine that it is reasonably comparable in investment risk to the Companies, it
23 was excluded from the proxy group.

1 Q PLEASE DESCRIBE WHY YOU BELIEVE YOUR PROXY GROUP IS
2 REASONABLY COMPARABLE IN INVESTMENT RISK TO LACLEDE/MGE.

3 A The proxy group is shown in Schedule MPG-3. The proxy group has an average
4 corporate credit rating from S&P of A-, which is identical to the Companies' credit
5 rating. The proxy group has an average corporate credit rating from Moody's of A2,
6 which is a notch lower than the Companies' credit ratings of "A1". Based on this
7 information, I believe my proxy group is reasonably comparable in investment risk to
8 the Companies.

9 The proxy group has an average common equity ratio of 49.0% (including
10 short-term debt) from SNL and 55.3% (excluding short-term debt) from *The Value*
11 *Line Investment Survey* ("Value Line") in 2016.

12 II.G. Discounted Cash Flow Model

13 Q PLEASE DESCRIBE THE DCF MODEL.

14 A The DCF model posits that a stock price is valued by summing the present value of
15 expected future cash flows discounted at the investor's required rate of return or cost
16 of capital. This model is expressed mathematically as follows:

$$17 \quad P_0 = \frac{D_1}{(1+K)^1} + \frac{D_2}{(1+K)^2} + \dots + \frac{D_\infty}{(1+K)^\infty} \quad (\text{Equation 1})$$

18

19 P_0 = Current stock price
20 D = Dividends in periods 1 - ∞
21 K = Investor's required return

22 This model can be rearranged in order to estimate the discount rate or
23 investor-required return otherwise known as "K." If it is reasonable to assume that
24 earnings and dividends will grow at a constant rate, then Equation 1 can be
25 rearranged as follows:

1 As such, including the quarterly compounding return in the DCF return
2 estimates overstates a fair return on equity for setting rates, because it overstates the
3 utility's cost of capital.

4 **Q WHAT STOCK PRICE HAVE YOU RELIED ON IN YOUR CONSTANT GROWTH**
5 **DCF MODEL?**

6 A I relied on the average of the weekly high and low stock prices of the utilities in the
7 proxy group over a 13-week period ending on August 11, 2017. An average stock
8 price is less susceptible to market price variations than a price at a single point in
9 time. Therefore, an average stock price is less susceptible to aberrant market price
10 movements, which may not reflect the stock's long-term value.

11 A 13-week average stock price reflects a period that is still short enough to
12 contain data that reasonably reflects current market expectations but the period is not
13 so short as to be susceptible to market price variations that may not reflect the stock's
14 long-term value. In my judgment, a 13-week average stock price is a reasonable
15 balance between the need to reflect current market expectations and the need to
16 capture sufficient data to smooth out aberrant market movements.

17 **Q WHAT DIVIDEND DID YOU USE IN YOUR CONSTANT GROWTH DCF MODEL?**

18 A I used the most recently paid quarterly dividend as reported in *Value Line*.¹¹ This
19 dividend was annualized (multiplied by 4) and adjusted for next year's growth to
20 produce the D_1 factor for use in Equation 2 above.

¹¹*The Value Line Investment Survey*, June 2, 2017.

1 Q WHAT DIVIDEND GROWTH RATES HAVE YOU USED IN YOUR CONSTANT
2 GROWTH DCF MODEL?

3 A There are several methods that can be used to estimate the expected growth in
4 dividends. However, regardless of the method, for purposes of determining the
5 market-required return on common equity, one must attempt to estimate investors'
6 consensus about what the dividend, or earnings growth rate, will be and not what an
7 individual investor or analyst may use to make individual investment decisions.

8 As predictors of future returns, security analysts' growth estimates have been
9 shown to be more accurate than growth rates derived from historical data.¹² That is,
10 assuming the market generally makes rational investment decisions, analysts' growth
11 projections are more likely to influence investors' decisions, which are captured in
12 observable stock prices more so than growth rates derived only from historical data.

13 For my constant growth DCF analysis, I have relied on a consensus, or mean,
14 of professional security analysts' earnings growth estimates as a proxy for investor
15 consensus dividend growth rate expectations. I used the average of analysts' growth
16 rate estimates from three sources: Zacks, SNL, and Reuters. All such projections
17 were available on August 11, 2017, as reported online.

18 Each consensus growth rate projection is based on a survey of security
19 analysts. There is no clear evidence whether a particular analyst is most influential
20 on general market investors. Therefore, a single analyst's projection does not as
21 reliably predict consensus investor outlooks as does a consensus of market analysts'
22 projections. The consensus estimate is a simple arithmetic average, or mean, of
23 surveyed analysts' earnings growth forecasts. A simple average of the growth
24 forecasts gives equal weight to all surveyed analysts' projections. Therefore, a

¹²See, e.g., David Gordon, Myron Gordon, and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989.

1 simple average, or arithmetic mean, of analyst forecasts is a good proxy for market
2 consensus expectations.

3 **Q WHAT ARE THE GROWTH RATES YOU USED IN YOUR CONSTANT GROWTH**
4 **DCF MODEL?**

5 A The growth rates I used in my DCF analysis are shown in Schedule MPG-4. The
6 average growth rate for my proxy group is 6.05%.

7 **Q WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?**

8 A As shown in Schedule MPG-5, the average and median constant growth DCF returns
9 for my proxy group for the 13-week analysis are 8.93% and 8.14%, respectively.

10 **Q DO YOU HAVE ANY COMMENTS ON THE RESULTS OF YOUR CONSTANT**
11 **GROWTH DCF ANALYSIS?**

12 A Yes. The constant growth DCF analysis for my proxy group is based on a group
13 average long-term sustainable growth rate of 6.05%. The three- to five-year growth
14 rates are higher than my estimate of a maximum long-term sustainable growth rate of
15 4.20%, which I discuss later in this testimony. I believe the constant growth DCF
16 analysis produces a reasonable high-end return estimate from my DCF studies.

17 **Q HOW DID YOU ESTIMATE A MAXIMUM LONG-TERM SUSTAINABLE GROWTH**
18 **RATE?**

19 A A long-term sustainable growth rate for a utility stock cannot exceed the growth rate
20 of the economy in which it sells its goods and services. Hence, the long-term
21 maximum sustainable growth rate for a utility investment is best proxied by the

1 projected long-term Gross Domestic Product ("GDP"). *Blue Chip Financial Forecasts*
2 projects that over the next five and ten years, the U.S. nominal GDP will grow
3 approximately 4.20%. These GDP growth projections reflect a real growth outlook of
4 2.1% and an inflation outlook of 2.1% going forward. As such, the average growth
5 rate over the next ten years is approximately 4.20%, which is a reasonable proxy of
6 long-term sustainable growth.¹³

7 In my multi-stage growth DCF analysis, I discuss academic and investment
8 practitioner support for using the projected long-term GDP growth outlook as a
9 maximum sustainable growth rate projection. Hence, recognizing the long-term GDP
10 growth rate as a maximum sustainable growth is logical, and is generally consistent
11 with academic and economic practitioner accepted practices.

12 **II.H. Sustainable Growth DCF**

13 **Q PLEASE DESCRIBE HOW YOU ESTIMATED A SUSTAINABLE LONG-TERM**
14 **GROWTH RATE FOR YOUR SUSTAINABLE GROWTH DCF MODEL.**

15 **A** A sustainable growth rate is based on the percentage of the utility's earnings that is
16 retained and reinvested in utility plant and equipment. These reinvested earnings
17 increase the earnings base (rate base). Earnings grow when plant funded by
18 reinvested earnings is put into service, and the utility is allowed to earn its authorized
19 return on such additional rate base investment.

20 The internal growth methodology is tied to the percentage of earnings retained
21 in the company and not paid out as dividends. The earnings retention ratio is 1 minus
22 the dividend payout ratio. As the payout ratio declines, the earnings retention ratio

¹³*Blue Chip Financial Forecasts*, June 1, 2017, at 14.

1 increases. An increased earnings retention ratio will fuel stronger growth because
2 the business funds more investments with retained earnings.

3 The payout ratios of the proxy group are shown in my Schedule MPG-6.
4 These dividend payout ratios and earnings retention ratios can be used to develop a
5 sustainable long-term earnings retention growth rate. A sustainable long-term
6 earnings retention ratio will help gauge whether analysts' current three- to five-year
7 growth rate projections can be sustained over an indefinite period of time.

8 The data used to estimate the long-term sustainable growth rate is based on
9 the Companies' current market-to-book ratio and on *Value Line's* three- to five-year
10 projections of earnings, dividends, earned returns on book equity, and stock
11 issuances.

12 As shown in Schedule MPG-7, the average sustainable growth rate for the
13 proxy group using this internal growth rate model is 6.18%.

14 **Q DO YOU HAVE ANY COMMENTS CONCERNING YOUR SUSTAINABLE**
15 **GROWTH RATE?**

16 **A** Yes. As shown on my Schedule MPG-7, page 1, the internal growth by reinvesting
17 retained earnings is about 4.32%. This growth rate is reasonably consistent with a
18 long-term sustainable growth. However, after reflecting sales of additional shares,
19 the sustainable growth rate is increased from 4.32% up to 6.18%. While this growth
20 rate may be achieved over the relatively short run, this significant impact on the
21 internal growth caused by sales of additional shares is not sustainable. Therefore, I
22 conclude that the three- to five-year projection of growth does not produce a
23 reasonable estimate of sustainable growth.

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1 Q WHAT IS THE DCF ESTIMATE USING THESE SUSTAINABLE LONG-TERM
2 GROWTH RATES?

3 A A DCF estimate based on these sustainable growth rates is developed in Schedule
4 MPG-8. As shown there, a sustainable growth DCF analysis produces proxy group
5 average and median DCF results for the 13-week period of 9.05% and 8.76%,
6 respectively.

7 **II.1. Multi-Stage Growth DCF Model**

8 Q HAVE YOU CONDUCTED ANY OTHER DCF STUDIES?

9 A Yes. My first constant growth DCF is based on consensus analysts' growth rate
10 projections so it is a reasonable reflection of rational investment expectations over the
11 next three to five years. The limitation on this constant growth DCF model is that it
12 cannot reflect a rational expectation that a period of high or low short-term growth can
13 be followed by a change in growth to a rate that is more reflective of long-term
14 sustainable growth. Hence, I performed a multi-stage growth DCF analysis to reflect
15 this outlook of changing growth expectations.

16 Q WHY DO YOU BELIEVE GROWTH RATES CAN CHANGE OVER TIME?

17 A Analyst-projected growth rates over the next three to five years will change as utility
18 earnings growth outlooks change. Utility companies go through cycles in making
19 investments in their systems. When utility companies are making large investments,
20 their rate base grows rapidly, which in turn accelerates earnings growth. Once a
21 major construction cycle is completed or levels off, growth in the utility rate base
22 slows and its earnings growth slows from an abnormally high three- to five-year rate
23 to a lower sustainable growth rate.

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1 As major construction cycles extend over longer periods of time, even with an
2 accelerated construction program, the growth rate of the utility will slow simply
3 because rate base growth will slow and the utility has limited human and capital
4 resources available to expand its construction program. Therefore, the three- to five-
5 year growth rate projection could be used as a long-term sustainable growth rate but
6 not without making a reasonable informed judgment to determine whether it
7 considers the current market environment, the industry, and whether the three- to
8 five-year growth outlook is sustainable.

9 **Q PLEASE DESCRIBE YOUR MULTI-STAGE GROWTH DCF MODEL.**

10 **A** The multi-stage growth DCF model reflects the possibility of non-constant growth for
11 a company over time. The multi-stage growth DCF model reflects three growth
12 periods: (1) a short-term growth period consisting of the first five years; (2) a transition
13 period, consisting of the next five years (6 through 10); and (3) a long-term growth
14 period starting in year 11 through perpetuity.

15 For the short-term growth period, I relied on the consensus analysts' growth
16 projections described above in the discussion of my constant growth DCF model. For
17 the transition period, the growth rates were reduced or increased by an equal factor
18 reflecting the difference between the analysts' growth rates and the long-term
19 sustainable growth rate. For the long-term growth period, I assumed each company's
20 growth would converge on the maximum sustainable long-term growth rate.

1 Q WHY IS THE GDP GROWTH PROJECTION A REASONABLE PROXY FOR THE
2 MAXIMUM SUSTAINABLE LONG-TERM GROWTH RATE?

3 A Utilities cannot indefinitely sustain a growth rate that exceeds the growth rate of the
4 economy in which they sell services. Utilities' earnings/dividend growth is created by
5 increased utility investment or rate base. Such investment, in turn, is driven by
6 service area economic growth and demand for utility service. In other words, utilities
7 invest in plant to meet sales demand growth. Sales growth, in turn, is tied to
8 economic growth in their service areas.

9 The U.S. Department of Energy, Energy Information Administration ("EIA")
10 has observed utility sales growth tracks the U.S. GDP growth, albeit at a lower level,
11 as shown in Schedule MPG-9. Utility sales growth has lagged behind GDP growth for
12 more than a decade. Therefore, the U.S. GDP nominal growth rate is a conservative
13 (i.e., generous to the utility) proxy for the highest sustainable long-term growth rate of
14 a utility.

15 Q IS THERE RESEARCH THAT SUPPORTS YOUR POSITION THAT, OVER THE
16 LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT GROW AT
17 A RATE GREATER THAN THE GROWTH OF THE U.S. GDP?

18 A Yes. This concept is supported in published analyst literature and academic work.
19 Specifically, in a textbook titled "Fundamentals of Financial Management," published
20 by Eugene Brigham and Joel F. Houston, the authors state as follows:

21 The constant growth model is most appropriate for mature companies
22 with a stable history of growth and stable future expectations.
23 Expected growth rates vary somewhat among companies, but
24 dividends for mature firms are often expected to grow in the future at

1 1926-2016 to be approximately 5.8%.¹⁶ During this same time period, the U.S.
2 nominal compound annual growth of the U.S. GDP was approximately 6.4%.¹⁷

3 As such, the compound geometric growth of the U.S. nominal GDP has been
4 higher but comparable to the nominal growth of the U.S. stock market capital
5 appreciation. This historical relationship indicates the U.S. GDP growth outlook is a
6 conservative estimate of the long-term sustainable growth of U.S. stock investments.

7 **Q HOW DID YOU DETERMINE A SUSTAINABLE LONG-TERM GROWTH RATE**
8 **THAT REFLECTS THE CURRENT CONSENSUS OUTLOOK OF THE MARKET?**

9 **A** I relied on the consensus analysts' projections of long-term GDP growth. *Blue Chip*
10 *Financial Forecasts* publishes consensus economists' GDP growth projections twice
11 a year. These consensus analysts' GDP growth outlooks are the best available
12 measure of the market's assessment of long-term GDP growth. These analyst
13 projections reflect all current outlooks for GDP and are likely the most influential on
14 investors' expectations of future growth outlooks. The consensus economists'
15 published GDP growth rate outlook is 4.20% over the next five to ten years.¹⁸

16 Therefore, I propose to use the consensus economists' projected five- and
17 ten-year average GDP consensus growth rates of 4.20%, as published by *Blue Chip*
18 *Financial Forecasts*, as an estimate of long-term sustainable growth. *Blue Chip*
19 *Financial Forecasts* projections provide real GDP growth projections of 2.1% and
20 GDP inflation of 2.1%¹⁹ over the five-year and ten-year projection periods. These
21 consensus GDP growth forecasts represent the most likely views of market
22 participants because they are based on published consensus economist projections.

¹⁶*Duff & Phelps, 2017 SBBI Yearbook* at 6-17.

¹⁷U.S. Bureau of Economic Analysis, February 28, 2017.

¹⁸*Blue Chip Financial Forecasts*, June 1, 2017, at 14.

¹⁹*Id.*

1 Q DID YOU CONSIDER OTHER SOURCES OF PROJECTED LONG-TERM GDP
2 GROWTH?

3 A Yes, and these sources corroborate my consensus analysts' projections, as shown
4 below in Table 5.

<u>Source</u>	<u>Term</u>	<u>Real GDP</u>	<u>Inflation</u>	<u>Nominal GDP</u>
<i>Blue Chip Financial Forecasts</i>	5-10 Yrs	2.1%	2.1%	4.2%
EIA – Annual Energy Outlook	29 Yrs	2.0%	2.1%	4.2%
Congressional Budget Office	6 Yrs	1.9%	2.0%	4.0%
Moody's Analytics	25 Yrs	2.0%	2.0%	4.0%
Social Security Administration	49 Yrs			4.4%
The Economist Intelligence Unit	25 Yrs	1.7%	1.9%	3.6%

5 The EIA, in its *Annual Energy Outlook*, projects real GDP out until 2050. In its
6 2017 Annual Report, the EIA projects real GDP through 2050 to be 2.0% and a long-
7 term GDP price inflation projection of 2.1%. The EIA data supports a long-term
8 nominal GDP growth outlook of 4.2%.²⁰

9 Also, the Congressional Budget Office ("CBO") makes long-term economic
10 projections. The CBO is projecting real GDP growth to be 1.9% during the next
11 6 years with a GDP price inflation outlook of 2.0%. The CBO 6-year outlook for
12 nominal GDP based on this projection is 4.0%.²¹

²⁰DOE/EIA Annual Energy Outlook 2017 With Projections to 2050, downloaded March 1, 2017.

²¹CBO: *The Budget and Economic Outlook: 2017 to 2027*, January 2017, downloaded March 1, 2017.

1 Moody's Analytics also makes long-term economic projections. In its recent
2 25-year outlook, Moody's Analytics is projecting real GDP growth of 2.0% with GDP
3 inflation of 2.0%. Based on these projections, Moody's is projecting nominal GDP
4 growth of 4.0% over the next 25 years.²²

5 The Social Security Administration ("SSA") makes long-term economic
6 projections out to 2090. The SSA's nominal GDP projection, under its intermediate
7 cost scenario of 49 years, is 4.4%.²³

8 The Economist Intelligence Unit, a division of *The Economist* and a third-party
9 data provider to SNL, makes a long-term economic projection out to 2050. The
10 Economist Intelligence Unit is projecting real GDP growth of 1.7% with an inflation
11 rate of 1.9% out to 2050. The real GDP growth projection is in line with the
12 consensus economists. The long-term nominal GDP projection based on these
13 outlooks is approximately 3.6%.²⁴

14 The real GDP and nominal GDP growth projections made by these
15 independent sources support the use of the consensus economists' five-year and ten-
16 year projected GDP growth outlooks as a reasonable estimate of market participants'
17 long-term GDP growth outlooks.

18 **Q WHAT STOCK PRICE, DIVIDEND, AND GROWTH RATES DID YOU USE IN YOUR**
19 **MULTI-STAGE GROWTH DCF ANALYSIS?**

20 **A** I relied on the same 13-week average stock prices and the most recent quarterly
21 dividend payment data discussed above. For stage one growth, I used the
22 consensus analysts' growth rate projections discussed above in my constant growth

²²www.economy.com, *Moody's Analytics Forecast*, February 6, 2017.

²³www.ssa.gov, "2017 OASDI Trustees Report," Table VI.G4, downloaded July 20, 2017.

²⁴*SNL Financial, Economist Intelligence Unit*, downloaded on March 1, 2017.

1 DCF model. The first stage growth covers the first five years, consistent with the term
2 of the analyst growth rate projections. The second stage, or transition stage, begins
3 in year 6 and extends through year 10. The second stage growth transitions the
4 growth rate from the first stage to the third stage using a linear trend. For the third
5 stage, or long-term sustainable growth stage, starting in year 11, I used a 4.20%
6 long-term sustainable growth rate based on the consensus economists' long-term
7 projected nominal GDP growth rate.

8 Q WHAT ARE THE RESULTS OF YOUR MULTI-STAGE GROWTH DCF MODEL?

9 A As shown in Schedule MPG-10, the average and median DCF returns on equity for
10 my proxy group using the 13-week average stock price are 7.39% and 7.15%,
11 respectively.

12 Q PLEASE SUMMARIZE THE RESULTS FROM YOUR DCF ANALYSES.

13 A The results from my DCF analyses are summarized in Table 6 below:

<u>Description</u>	<u>Proxy Group</u>	
	<u>Average</u>	<u>Median</u>
Constant Growth DCF Model (Analysts' Growth)	8.93%	8.14%
Constant Growth DCF Model (Sustainable Growth)	9.05%	8.76%
Multi-Stage Growth DCF Model	7.39%	7.15%

14 I conclude that my DCF studies support a return on equity of 8.90%.
15 I consider the results of all my studies, along with my assessment of the inputs and
16 results as described above. Based on this assessment, I find a return on equity of

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1 around 8.90% generally reflects results of my proxy group DCF studies, and a
2 sustainable DCF return estimate for the proxy group, but should be regarded as a
3 conservative high-end DCF return for the reasons outlined above.

4 **II.J. Risk Premium Model**

5 **Q PLEASE DESCRIBE YOUR BOND YIELD PLUS RISK PREMIUM MODEL.**

6 **A** This model is based on the principle that investors require a higher return to assume
7 greater risk. Common equity investments have greater risk than bonds because
8 bonds have more security of payment in bankruptcy proceedings than common equity
9 and the coupon payments on bonds represent contractual obligations. In contrast,
10 companies are not required to pay dividends or guarantee returns on common equity
11 investments. Therefore, common equity securities are considered to be riskier than
12 bond securities.

13 This risk premium model is based on two estimates of an equity risk premium.
14 First, I estimated the difference between the required return on utility common equity
15 investments and U.S. Treasury bonds. The difference between the required return on
16 common equity and the Treasury bond yield is the risk premium. I estimated the risk
17 premium on an annual basis for each year over the period January 1986 through
18 second quarter 2017. The common equity required returns were based on regulatory
19 commission-authorized returns for gas utility companies. Authorized returns are
20 typically based on expert witnesses' estimates of the contemporary investor-required
21 return.

22 The second equity risk premium estimate is based on the difference between
23 regulatory commission-authorized returns on common equity and contemporary
24 "A" rated utility bond yields by Moody's. I selected the period January 1986 through

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1 second quarter 2017 because public utility stocks consistently traded at a premium to
2 book value during that period. This is illustrated in Schedule MPG-11, which shows
3 the market-to-book ratio since 1986 for the utility industry was consistently above a
4 multiple of 1.0x. Over this period, regulatory authorized returns were sufficient to
5 support market prices that at least exceeded book value. This is an indication that
6 regulatory authorized returns on common equity supported a utility's ability to issue
7 additional common stock without diluting existing shares. It further demonstrates that
8 utilities were able to access equity markets without a detrimental impact on current
9 shareholders.

10 Based on this analysis, as shown in Schedule MPG-12, the average indicated
11 equity risk premium over U.S. Treasury bond yields has been 5.40%. Since the risk
12 premium can vary depending upon market conditions and changing investor risk
13 perceptions, I believe using an estimated range of risk premiums provides the best
14 method to measure the current return on common equity for a risk premium
15 methodology.

16 I incorporated five-year and ten-year rolling average risk premiums over the
17 study period to gauge the variability over time of risk premiums. These rolling
18 average risk premiums mitigate the impact of anomalous market conditions and
19 skewed risk premiums over an entire business cycle. As shown on my Schedule
20 MPG-12, the five-year rolling average risk premium over Treasury bonds ranged from
21 4.17% to 6.67%, while the ten-year rolling average risk premium ranged from 4.30%
22 to 6.41%.

23 As shown on my Schedule MPG-13, the average indicated equity risk
24 premium over contemporary Moody's utility bond yields was 4.03%. The five-year

1 and ten-year rolling average risk premiums ranged from 2.80% to 5.51% and 3.11%
2 to 5.06%, respectively.

3 Q DO YOU BELIEVE THAT THE TIME PERIOD USED TO DERIVE THESE EQUITY
4 RISK PREMIUM ESTIMATES IS APPROPRIATE TO FORM ACCURATE
5 CONCLUSIONS ABOUT CONTEMPORARY MARKET CONDITIONS?

6 A Yes. The time period I use in this risk premium study is a generally accepted period
7 to develop a risk premium study using "expectational" data.

8 Contemporary market conditions can change dramatically during the period
9 that rates determined in this proceeding will be in effect. A relatively long period of
10 time where stock valuations reflect premiums to book value is an indication the
11 authorized returns on equity and the corresponding equity risk premiums were
12 supportive of investors' return expectations and provided utilities access to the equity
13 markets under reasonable terms and conditions. Further, this time period is long
14 enough to smooth abnormal market movement that might distort equity risk
15 premiums. While market conditions and risk premiums do vary over time, this
16 historical time period is a reasonable period to estimate contemporary risk premiums.

17 Alternatively, some studies, such as Duff & Phelps referred to later in this
18 testimony, have recommended that use of "actual achieved investment return data" in
19 a risk premium study should be based on long historical time periods. The studies
20 find that achieved returns over short time periods may not reflect investors' expected
21 returns due to unexpected and abnormal stock price performance. Short-term,
22 abnormal actual returns would be smoothed over time and the achieved actual
23 investment returns over long time periods would approximate investors' expected
24 returns. Therefore, it is reasonable to assume that averages of annual achieved

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1 returns over long time periods will generally converge on the investors' expected
2 returns.

3 My risk premium study is based on expectational data, not actual investment
4 returns, and, thus, need not encompass a very long historical time period.

5 **Q** **BASED ON HISTORICAL DATA, WHAT RISK PREMIUM HAVE YOU USED TO**
6 **ESTIMATE LACLEDE/MGE'S COST OF COMMON EQUITY IN THIS**
7 **PROCEEDING?**

8 **A** The equity risk premium should reflect the relative market perception of risk in the
9 utility industry today. I have gauged investor perceptions in utility risk today in
10 Schedule MPG-14, where I show the yield spread between utility bonds and Treasury
11 bonds over the last 38 years. As shown in this schedule, the average utility bond
12 yield spreads over Treasury bonds for "A" and "Baa" rated utility bonds for this
13 historical period are 1.51% and 1.95%, respectively. The utility bond yield spreads
14 over Treasury bonds for "A" and "Baa" rated utilities for 2017 are 1.15% and 1.55%,
15 respectively. The current average "A" rated utility bond yield spread over Treasury
16 bond yields is now lower than the 38-year average spread. The current "Baa" rated
17 utility bond yield spread over Treasury bond yields is lower than the 38-year average
18 spread.

19 The current 13-week average "A" rated utility bond yield is 3.97% and
20 compares to the current Treasury bond yield of 2.84%, as shown in Schedule
21 MPG-15. This current utility bond yield spread of 1.13% is lower than the 38-year
22 average spread for "A" rated utility bonds of 1.51%. The current spread for the "Baa"
23 rated utility bond yield of 1.50% is also lower than the 38-year average spread of
24 1.95%.

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1 These utility bond yield spreads are evidence that the market perception of
2 utility risk is about average relative to this historical time period and demonstrate that
3 utilities continue to have strong access to capital in the current market.

4 **Q HOW DID YOU DETERMINE WHAT A REASONABLE RISK PREMIUM IS IN THE**
5 **CURRENT MARKET?**

6 **A** I observed the spread of Treasury securities relative to public utility bonds and
7 corporate bonds in gauging whether or not the risk premium in current market prices
8 is stable relative to the past. What this observation of market evidence clearly
9 demonstrates is that the valuations in the current market place an above average risk
10 premium on securities that have greater risk.

11 This market evidence is summarized below in Table 7, which shows the utility
12 bond yield spreads over Treasury bond yields on average for the period 1980 through
13 June 2017, and the corporate bond yield spreads for Aaa corporates and Baa
14 corporates.

<u>Description</u>	<u>Utility</u>		<u>Corporate</u>	
	<u>A</u>	<u>Baa</u>	<u>Aaa</u>	<u>Baa</u>
Average Historical Spread	1.51%	1.95%	0.84%	1.94%
2016 Spread	1.33%	2.08%	1.07%	2.12%
June 2017 Spread	1.15%	1.55%	0.91%	1.61%

Source:
Schedule MPG-14.

1 The observable yield spreads shown in the table above illustrate that
2 securities of greater risk have recently had average risk premiums relative to the long-
3 term historical average risk premium. Specifically, A-rated utility bonds to Treasuries,
4 a relatively low-risk investment, have a yield spread in 2017 that has been lower than,
5 though comparable to that of, its long-term historical yield spread. This is an
6 indication that low risk investments like A-rated utility bonds have premium values
7 relative to minimal risk Treasury securities.

8 Only recently have Baa-rated utility bond yield spreads gone below the
9 38-year average of 1.95%. For example, in 2016, the Baa-rated yield spread
10 averaged 2.08%, which is approximately 13 basis points above the long-term average
11 of 1.95%, shown in Schedule MPG-14. While the higher risk Baa utility and corporate
12 bond yields currently have a below-average yield spread of 40 basis points (1.55%
13 vs. 1.95%), there appears to be more volatility in the spread. The higher risk Baa
14 utility bond yields do not have the same premium valuations as their lower risk A-
15 rated utility bond yields, and thus the yield spread for greater risk investments is wider
16 than lower risk investments.

17 This illustrates that securities with greater risk, such as Baa-rated bonds
18 versus A-rated bonds, have recently commanded above average risk premium
19 spreads in the marketplace. Utility equity securities are greater risk than Baa utility
20 bonds. Because greater risk securities appear to support an above-average risk
21 premium relative to historical averages, this would support an above-average risk
22 premium in measuring a fair return on equity for a utility stock or equity security.

1 Q WHAT IS YOUR RECOMMENDED RETURN FOR THE COMPANIES BASED ON
2 YOUR RISK PREMIUM STUDY?

3 A To be conservative, I am recommending more weight to the high-end risk premium
4 estimates than the low-end. I state this because of the relatively low level of interest
5 rates now but relative upward movements of utility yields more recently. Hence, I
6 propose to provide 65% weight to my high-end risk premium estimates and 35% to
7 the low-end. Applying these weights, the risk premium for Treasury bond yields
8 would be approximately 5.8%,²⁵ which is considerably higher than the 31-year
9 average risk premium of 5.40% and reasonably reflective of the 3.7% projected
10 Treasury bond yield. A Treasury bond risk premium of 5.8% and projected Treasury
11 bond yield of 3.7% produce a risk premium estimate of 9.5%.

12 Similarly, applying these weights to the utility risk premium indicates a risk
13 premium of 4.6%.²⁶ This risk premium is above the 31-year historical average risk
14 premium of 4.03%. This risk premium in connection with the current observable Baa
15 utility bond yield of 4.34% produces an estimated return on equity of approximately
16 8.94%.

17 Based on this methodology, my Treasury bond risk premium and my utility
18 bond risk premium indicate a return in the range of 8.9% to 9.5%, with a midpoint of
19 9.20%.

20 II.K. Capital Asset Pricing Model ("CAPM")

21 Q PLEASE DESCRIBE THE CAPM.

22 A The CAPM method of analysis is based upon the theory that the market-required rate
23 of return for a security is equal to the risk-free rate, plus a risk premium associated

²⁵ $(4.17\% * 35\%) + (6.67\% * 65\%) = 5.80\%$.

²⁶ $(2.80\% * 35\%) + (5.51\% * 65\%) = 4.56\%$, rounded to 4.60%.

1 with the specific security. This relationship between risk and return can be expressed
2 mathematically as follows:

3 $R_i = R_f + B_i \times (R_m - R_f)$ where:

4 R_i = Required return for stock i
5 R_f = Risk-free rate
6 R_m = Expected return for the market portfolio
7 B_i = Beta - Measure of the risk for stock

8 The stock-specific risk term in the above equation is beta. Beta represents
9 the investment risk that cannot be diversified away when the security is held in a
10 diversified portfolio. When stocks are held in a diversified portfolio, firm-specific risks
11 can be eliminated by balancing the portfolio with securities that react in the opposite
12 direction to firm-specific risk factors (e.g., business cycle, competition, product mix,
13 and production limitations).

14 The risks that cannot be eliminated when held in a diversified portfolio are
15 non-diversifiable risks. Non-diversifiable risks are related to the market in general
16 and are referred to as systematic risks. Risks that can be eliminated by diversification
17 are non-systematic risks. In a broad sense, systematic risks are market risks and
18 non-systematic risks are business risks. The CAPM theory suggests the market will
19 not compensate investors for assuming risks that can be diversified away. Therefore,
20 the only risk investors will be compensated for are systematic or non-diversifiable
21 risks. The beta is a measure of the systematic or non-diversifiable risks.

22 **Q PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.**

23 **A** The CAPM requires an estimate of the market risk-free rate, the Companies' beta,
24 and the market risk premium.

1 Q WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE RATE?

2 A Currently, as published in the *Blue Chip Financial Forecasts*, the consensus
3 economists have projected the 30-year Treasury bond yield to be 3.70%.²⁷ I used
4 *Blue Chip Financial Forecasts'* projected 30-year Treasury bond yield of 3.70% for my
5 CAPM analysis.

6 Q WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN ESTIMATE
7 OF THE RISK-FREE RATE?

8 A Treasury securities are backed by the full faith and credit of the United States
9 government so long-term Treasury bonds are considered to have negligible credit
10 risk. Also, long-term Treasury bonds have an investment horizon similar to that of
11 common stock. As a result, investor-anticipated long-run inflation expectations are
12 reflected in both common stock required returns and long-term bond yields.
13 Therefore, the nominal risk-free rate (or expected inflation rate and real risk-free rate)
14 included in a long-term bond yield is a reasonable estimate of the nominal risk-free
15 rate included in common stock returns.

16 Treasury bond yields, however, do include risk premiums related to
17 unanticipated future inflation and interest rates. A Treasury bond yield is not a risk-
18 free rate. Risk premiums related to unanticipated inflation and interest rates are
19 systematic market risks. Consequently, for companies with betas less than 1.0, using
20 the Treasury bond yield as a proxy for the risk-free rate in the CAPM analysis can
21 produce an overstated estimate of the CAPM return.

²⁷*Blue Chip Financial Forecasts*, August 1, 2017, at 2.

1 Q WHAT BETA DID YOU USE IN YOUR ANALYSIS?

2 A As shown in Schedule MPG-16, the proxy group average *Value Line* beta estimate is
3 0.73.

4 Q HOW DID YOU DERIVE YOUR MARKET RISK PREMIUM ESTIMATE?

5 A I derived two market risk premium estimates: a forward-looking estimate and one
6 based on a long-term historical average.

7 The forward-looking estimate was derived by estimating the expected return
8 on the market (as represented by the S&P 500) and subtracting the risk-free rate from
9 this estimate. I estimated the expected return on the S&P 500 by adding an expected
10 inflation rate to the long-term historical arithmetic average real return on the market.
11 The real return on the market represents the achieved return above the rate of
12 inflation.

13 Duff & Phelps' *2017 SBBI Yearbook* estimates the historical arithmetic
14 average inflation-adjusted market return over the period 1926 to 2016 as 8.9%.²⁸ A
15 current consensus analysts' inflation projection, as measured by the Consumer Price
16 Index, is 2.4%.²⁹ Using these estimates, the expected market return is approximately
17 11.50%.³⁰ The market risk premium then is the difference between the 11.50%
18 expected market return and my 3.70% risk-free rate estimate, or approximately
19 7.80%.

20 My historical estimate of the market risk premium was also calculated by using
21 data provided by Duff & Phelps in its *2017 SBBI Yearbook*. Over the period 1926
22 through 2016, the Duff & Phelps study estimated that the arithmetic average of the

²⁸Duff & Phelps, *2017 SBBI Yearbook* at 6-18.

²⁹Blue Chip Financial Forecasts, August 1, 2017 at 2.

³⁰ $\{ [(1 + 0.089) * (1 + 0.024)] - 1 \} * 100$.

1 achieved total return on the S&P 500 was 12.0%³¹ and the total return on long-term
2 Treasury bonds was 6.0%.³² The indicated market risk premium is 6.0% (12.0% -
3 6.0% = 6.0%).

4 **Q HOW DOES YOUR ESTIMATED MARKET RISK PREMIUM RANGE COMPARE TO**
5 **THAT ESTIMATED BY DUFF & PHELPS?**

6 A The Duff & Phelps analysis indicates a market risk premium falls somewhere in the
7 range of 5.5% to 6.9%. My market risk premium falls in the range of 6.0% to 7.8%.
8 My average market risk premium of approximately 6.9% is at the high-end of the Duff
9 & Phelps range.

10 **Q HOW DOES DUFF & PHELPS MEASURE A MARKET RISK PREMIUM?**

11 A Duff & Phelps makes several estimates of a forward-looking market risk premium
12 based on actual achieved data from the historical period of 1926 through 2016 as well
13 as normalized data. Using this data, Duff & Phelps estimates a market risk premium
14 derived from the total return on large company stocks (S&P 500), less the income
15 return on Treasury bonds. The total return includes capital appreciation, dividend or
16 coupon reinvestment returns, and annual yields received from coupons and/or
17 dividend payments. The income return, in contrast, only reflects the income return
18 received from dividend payments or coupon yields. Duff & Phelps claims the income
19 return is the only true risk-free rate associated with Treasury bonds and is the best
20 approximation of a truly risk-free rate.³³ I disagree with this assessment from Duff &
21 Phelps because it does not reflect a true investment option available to the

³¹*Duff & Phelps, 2017 SBBI Yearbook at 6-17.*

³²*Id.*

³³*Duff & Phelps, 2017 Valuation Handbook at 3-32.*

1 marketplace and therefore does not produce a legitimate estimate of the expected
2 premium of investing in the stock market versus that of Treasury bonds.
3 Nevertheless, I will use Duff & Phelps' conclusion to show the reasonableness of my
4 market risk premium estimates.

5 Duff & Phelps' range is based on several methodologies. First, Duff & Phelps
6 estimates a market risk premium of 6.9% based on the difference between the total
7 market return on common stocks (S&P 500) less the income return on Treasury bond
8 investments over the 1926-2016 period.

9 Second, Duff & Phelps updated the Ibbotson & Chen supply-side model,
10 which found that the 6.9% market risk premium based on the S&P 500 was
11 influenced by an abnormal expansion of price-to-earnings ("P/E") ratios relative to
12 earnings and dividend growth during the period, primarily over the last 30 years. Duff
13 & Phelps believes this abnormal P/E expansion is not sustainable.³⁴ Therefore, Duff
14 & Phelps adjusted this market risk premium estimate to normalize the growth in the
15 P/E ratio to be more in line with the growth in dividends and earnings. Based on this
16 alternative methodology, Duff & Phelps published a long-horizon supply-side market
17 risk premium of 5.97%.³⁵

18 Finally, Duff & Phelps develops its own recommended equity, or market risk
19 premium by employing an analysis that takes into consideration a wide range of
20 economic information, multiple risk premium estimation methodologies, and the
21 current state of the economy by observing measures such as the level of stock
22 indices and corporate spreads as indicators of perceived risk. Based on this
23 methodology, and utilizing a "normalized" risk-free rate of 3.5%, Duff & Phelps

³⁴*Id.* at 3-36.

³⁵*Id.*

1 concludes the current expected, or forward-looking, market risk premium is 5.5%,
2 implying an expected return on the market of 9.0%.³⁶

3 Q WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

4 A As shown in Schedule MPG-17 using the CAPM equation above, based on my
5 prospective market risk premium of 7.8% and my low market risk premium of 6.0%, a
6 risk-free rate of 3.7%, and a beta of 0.73, my CAPM analysis produces return
7 estimates of 9.42% and 8.10%, respectively. Based on my assessment of risk
8 premiums in the market, as discussed above, I will place primary reliance on my
9 high-end CAPM return estimate rounded to 9.40%.

10 **II.L. Return on Equity Summary**

11 Q BASED ON THE RESULTS OF YOUR RETURN ON COMMON EQUITY
12 ANALYSES DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY DO
13 YOU RECOMMEND FOR THE COMPANIES?

14 A Based on my analyses, I estimate the Companies' current market cost of equity to be
15 9.20%.

<u>Return on Common Equity Summary</u>	
<u>Description</u>	<u>Results</u>
DCF	8.90%
Risk Premium	9.20%
CAPM	9.40%

³⁶*Id.* at 3-48.

1 My recommended return on common equity of 9.20% is at the approximate
2 midpoint of my estimated range of 8.90% to 9.40%. As shown in Table 8 above, the
3 high-end of my estimated range is based on my CAPM result. The low-end is based
4 on my DCF return.

5 My return on equity estimates reflect observable market evidence, the impact
6 of Federal Reserve policies on current and expected long-term capital market costs,
7 an assessment of the current risk premium built into current market securities, a
8 general assessment of the current investment risk characteristics of the utility
9 industry, and the market's demand for utility securities.

10 **Q IS YOUR RECOMMENDED RETURN ON EQUITY AND RANGE BASED**
11 **PREDOMINANTLY ON THE DCF ANALYSIS?**

12 **A**No. It is based on my complete analyses relying on DCF, risk premium and CAPM
13 studies. I have been advised by Counsel that the Missouri Commission frequently
14 gives preference to the results of a DCF study. If they choose to do that in this
15 proceeding, then a fair return on equity for Laclede/MGE would be 8.9%, and
16 generally would fall within the range of what I believe to be a reasonable DCF return
17 of 8.15% up to 8.9%.

18 **Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

19 **A**Yes, it does.

Appendix A

Qualifications of Michael P. Gorman

1 Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,
3 Chesterfield, MO 63017.

4 Q PLEASE STATE YOUR OCCUPATION.

5 A I am a consultant in the field of public utility regulation and a Managing Principal with
6 the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory
7 consultants.

8 Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK
9 EXPERIENCE.

10 A In 1983 I received a Bachelors of Science Degree in Electrical Engineering from
11 Southern Illinois University, and in 1986, I received a Masters Degree in Business
12 Administration with a concentration in Finance from the University of Illinois at
13 Springfield. I have also completed several graduate level economics courses.

14 In August of 1983, I accepted an analyst position with the Illinois Commerce
15 Commission ("ICC"). In this position, I performed a variety of analyses for both formal
16 and informal investigations before the ICC, including: marginal cost of energy, central
17 dispatch, avoided cost of energy, annual system production costs, and working
18 capital. In October of 1986, I was promoted to the position of Senior Analyst. In this
19 position, I assumed the additional responsibilities of technical leader on projects, and

1 my areas of responsibility were expanded to include utility financial modeling and
2 financial analyses.

3 In 1987, I was promoted to Director of the Financial Analysis Department. In
4 this position, I was responsible for all financial analyses conducted by the Staff.
5 Among other things, I conducted analyses and sponsored testimony before the ICC
6 on rate of return, financial integrity, financial modeling and related issues. I also
7 supervised the development of all Staff analyses and testimony on these same
8 issues. In addition, I supervised the Staff's review and recommendations to the
9 Commission concerning utility plans to issue debt and equity securities.

10 In August of 1989, I accepted a position with Merrill-Lynch as a financial
11 consultant. After receiving all required securities licenses, I worked with individual
12 investors and small businesses in evaluating and selecting investments suitable to
13 their requirements.

14 In September of 1990, I accepted a position with Drazen-Brubaker &
15 Associates, Inc. ("DBA"). In April 1995, the firm of Brubaker & Associates, Inc. was
16 formed. It includes most of the former DBA principals and Staff. Since 1990, I have
17 performed various analyses and sponsored testimony on cost of capital, cost/benefits
18 of utility mergers and acquisitions, utility reorganizations, level of operating expenses
19 and rate base, cost of service studies, and analyses relating to industrial jobs and
20 economic development. I also participated in a study used to revise the financial
21 policy for the municipal utility in Kansas City, Kansas.

22 At BAI, I also have extensive experience working with large energy users to
23 distribute and critically evaluate responses to requests for proposals ("RFPs") for
24 electric, steam, and gas energy supply from competitive energy suppliers. These
25 analyses include the evaluation of gas supply and delivery charges, cogeneration

1 and/or combined cycle unit feasibility studies, and the evaluation of third-party
2 asset/supply management agreements. I have participated in rate cases on rate
3 design and class cost of service for electric, natural gas, water and wastewater
4 utilities. I have also analyzed commodity pricing indices and forward pricing methods
5 for third party supply agreements, and have also conducted regional electric market
6 price forecasts.

7 In addition to our main office in St. Louis, the firm also has branch offices in
8 Phoenix, Arizona and Corpus Christi, Texas.

9 **Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?**

10 **A** Yes. I have sponsored testimony on cost of capital, revenue requirements, cost of
11 service and other issues before the Federal Energy Regulatory Commission and
12 numerous state regulatory commissions including: Arkansas, Arizona, California,
13 Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas,
14 Louisiana, Michigan, Mississippi, Missouri, Montana, New Jersey, New Mexico, New
15 York, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Texas,
16 Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and before
17 the provincial regulatory boards in Alberta and Nova Scotia, Canada. I have also
18 sponsored testimony before the Board of Public Utilities in Kansas City, Kansas;
19 presented rate setting position reports to the regulatory board of the municipal utility
20 in Austin, Texas, and Salt River Project, Arizona, on behalf of industrial customers;
21 and negotiated rate disputes for industrial customers of the Municipal Electric
22 Authority of Georgia in the LaGrange, Georgia district.

1 Q PLEASE DESCRIBE ANY PROFESSIONAL REGISTRATIONS OR
2 ORGANIZATIONS TO WHICH YOU BELONG.

3 A I earned the designation of Chartered Financial Analyst ("CFA") from the CFA
4 Institute. The CFA charter was awarded after successfully completing three
5 examinations which covered the subject areas of financial accounting, economics,
6 fixed income and equity valuation and professional and ethical conduct. I am a
7 member of the CFA Institute's Financial Analyst Society.

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Laclede Gas Company / Missouri Gas-Energy

Natural Gas Utilities (Valuation Metrics)

		Price to Earnings (P/E) Ratio ¹												
Line	Company	12-Year												
		Average (1)	2017 ² (2)	2016 (3)	2015 (4)	2014 (5)	2013 (6)	2012 (7)	2011 (8)	2010 (9)	2009 (10)	2008 (11)	2007 (12)	2006 (13)
1	Atmos Energy	15.96	22.20	20.80	17.50	16.09	15.87	15.93	14.36	13.21	12.54	13.59	15.87	13.52
2	Chesapeake Utilities	17.17	27.70	21.77	19.15	17.70	15.62	14.81	14.16	12.21	14.20	14.15	16.72	17.85
3	New Jersey Resources	16.85	23.10	21.25	16.61	11.73	15.98	16.83	16.76	14.98	14.93	12.27	21.61	16.13
4	NiSource Inc.	20.08	21.90	23.18	37.34	22.74	18.89	17.87	19.36	15.33	14.34	12.07	18.82	19.16
5	Northwest Nat. Gas	20.07	27.30	26.92	23.69	20.69	19.36	21.08	19.02	16.97	15.17	18.08	16.74	15.85
6	ONE Gas Inc.	20.99	23.60	22.74	19.79	17.83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	18.08	28.30	21.71	17.95	18.03	18.90	16.94	18.48	16.81	14.96	15.90	17.18	11.86
8	Southwest Gas	17.36	23.40	21.64	19.35	17.86	15.76	15.00	15.69	13.97	12.20	20.27	17.26	15.94
9	Spire Inc.	16.17	20.20	19.61	16.49	19.80	21.25	14.46	13.05	13.74	13.39	14.31	14.19	13.60
10	UGI Corp.	15.30	20.40	19.33	17.71	15.81	15.44	16.38	15.03	10.86	10.30	13.30	15.14	13.97
11	WGL Holdings Inc.	16.57	23.70	20.05	16.99	15.15	18.25	15.27	16.97	15.11	12.58	13.66	15.60	15.46
12	Average	17.37	23.80	21.73	20.23	17.58	17.53	16.46	16.29	14.32	13.46	14.76	16.91	15.33
13	Median	17.07	23.40	21.64	17.95	17.83	17.11	16.15	16.22	14.48	13.80	13.91	16.73	15.66

		Market Price to Cash Flow (MP/CF) Ratio ¹												
Line	Company	12-Year												
		Average (1)	2017 ^{2a} (2)	2016 (3)	2015 (4)	2014 (5)	2013 (6)	2012 (7)	2011 (8)	2010 (9)	2009 (10)	2008 (11)	2007 (12)	2006 (13)
1	Atmos Energy	7.93	11.85	11.36	9.30	8.79	7.72	7.02	6.87	6.15	5.76	6.48	7.44	6.36
2	Chesapeake Utilities	9.11	13.26	12.06	10.16	9.25	8.12	7.46	7.35	6.36	9.48	7.88	8.58	9.40
3	New Jersey Resources	11.87	14.98	13.94	11.71	8.95	11.29	12.29	12.71	11.32	11.34	9.15	13.76	11.01
4	NiSource Inc.	7.37	7.97	8.56	10.38	10.56	8.71	7.81	6.81	5.09	4.06	4.87	6.69	6.87
5	Northwest Nat. Gas	9.22	11.26	11.57	9.46	8.84	8.61	9.48	9.08	8.94	8.26	8.75	8.54	7.83
6	ONE Gas Inc.	9.91	11.19	11.10	9.19	8.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	10.93	14.24	10.88	10.70	10.57	11.57	10.95	11.98	10.78	9.57	10.38	11.23	8.32
8	Southwest Gas	5.85	8.45	7.41	6.56	6.35	5.94	5.55	5.60	4.91	3.84	4.89	5.42	5.28
9	Spire Inc.	9.56	10.73	10.32	8.47	12.03	13.76	8.80	8.08	8.12	8.58	8.95	8.46	8.46
10	UGI Corp.	7.45	9.86	9.02	8.47	7.49	6.55	6.30	7.51	6.02	5.74	7.11	7.92	7.48
11	WGL Holdings Inc.	9.22	13.47	11.36	9.59	8.46	9.83	9.03	9.52	8.34	7.17	7.68	8.39	7.81
12	Average	8.84	11.57	10.69	9.45	9.04	9.21	8.47	8.55	7.60	7.38	7.62	8.64	7.88
13	Median	8.70	11.26	11.10	9.46	8.84	8.66	8.31	7.80	7.24	7.71	7.78	8.42	7.82

		Market Price to Book Value (MP/BV) Ratio ¹												
Line	Company	12-Year												
		Average (1)	2017 ^{2b} (2)	2016 (3)	2015 (4)	2014 (5)	2013 (6)	2012 (7)	2011 (8)	2010 (9)	2009 (10)	2008 (11)	2007 (12)	2006 (13)
1	Atmos Energy	1.47	2.09	2.11	1.72	1.55	1.39	1.28	1.30	1.18	1.05	1.20	1.40	1.34
2	Chesapeake Utilities	1.83	2.22	2.28	2.19	2.12	1.83	1.66	1.61	1.40	1.37	1.64	1.84	1.85
3	New Jersey Resources	2.22	2.66	2.52	2.28	2.13	2.05	2.33	2.31	2.09	2.16	1.92	2.17	2.01
4	NiSource Inc.	1.38	1.85	1.84	1.95	1.94	1.58	1.37	1.15	0.92	0.69	0.94	1.16	1.19
5	Northwest Nat. Gas	1.78	1.98	1.92	1.63	1.59	1.56	1.72	1.70	1.78	1.73	1.96	2.05	1.69
6	ONE Gas Inc.	1.44	1.75	1.67	1.26	1.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	2.10	1.96	1.79	1.77	2.07	2.27	2.21	2.59	2.38	1.95	2.08	2.21	1.93
8	Southwest Gas	1.53	2.10	1.96	1.68	1.68	1.61	1.51	1.43	1.24	0.97	1.20	1.46	1.46
9	Spire Inc.	1.55	1.68	1.64	1.44	1.33	1.34	1.51	1.46	1.39	1.68	1.71	1.66	1.71
10	UGI Corp.	1.99	2.74	2.41	2.29	1.97	1.69	1.45	1.75	1.55	1.66	2.01	2.16	2.21
11	WGL Holdings Inc.	1.81	2.72	2.45	2.15	1.69	1.71	1.66	1.63	1.50	1.45	1.59	1.64	1.59
12	Average	1.75	2.16	2.05	1.85	1.74	1.70	1.67	1.69	1.54	1.47	1.62	1.78	1.70
13	Median	1.71	2.09	1.96	1.77	1.69	1.65	1.58	1.62	1.45	1.56	1.67	1.75	1.70

Sources:

¹ The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2017.

² The Value Line Investment Survey, June 2, 2017.

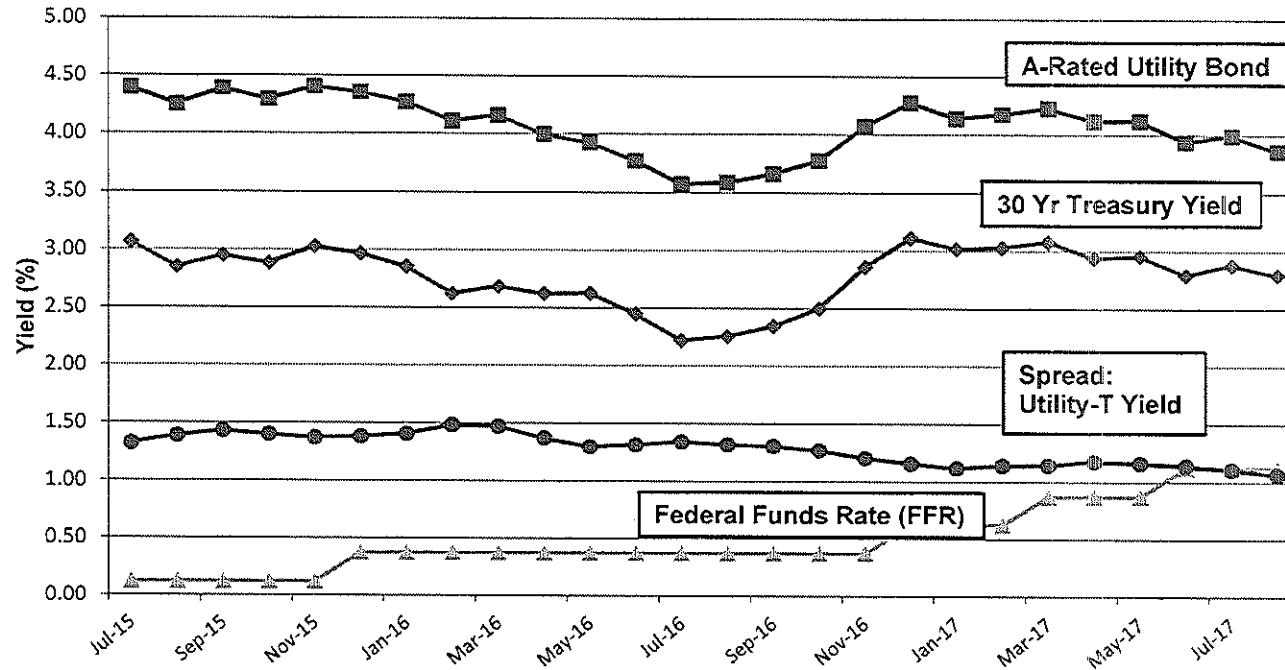
Notes:

^a Based on the average of the high and low price for 2017 and the projected 2017 Cash Flow per share, published in The Value Line Investment Survey, June 2, 2017.

^b Based on the average of the high and low price for 2017 and the projected 2017 Book Value per share, published in The Value Line Investment Survey, June 2, 2017.

Laclede Gas Company / Missouri Gas Energy

Timeline of Federal Funds Rate Increases



Fed FFR Actions:

December 2015	0.25	→	0.50
December 2016	0.50	→	0.75
March 2017	0.75	→	1.00
June 2017	1.00	→	1.25

Sources:

Federal Reserve Bank of New York, <https://apps.newyorkfed.org/markets/autorates/fed-funds-search-page>
 Board of Governors of the Federal Reserve System, <https://www.federalreserve.gov/datadownload/>
 Moody's Credit Trends, <https://credittrends.moody.com/>

Laclede Gas Company / Missouri Gas Energy

Proxy Group

<u>Line</u>	<u>Company</u>	<u>Credit Ratings¹</u>		<u>Common Equity Ratios</u>	
		<u>S&P</u> (1)	<u>Moody's</u> (2)	<u>SNL¹</u> (3)	<u>Value Line²</u> (4)
1	Atmos Energy Corporation	A	A2	51.4%	61.3%
2	New Jersey Resources Corporation	A	Aa2	48.5%	52.3%
3	Northwest Natural Gas Company	A+	A3	52.4%	55.6%
4	South Jersey Industries, Inc.	BBB+	A2	49.1%	61.5%
5	Southwest Gas Holdings, Inc.	BBB+	Baa1	50.7%	51.8%
6	Spire Inc.	A-	Baa2	41.7%	49.1%
7	Average	A-	A2	49.0%	55.3%
8	Laclede Gas Company	A-	A1	57.2%³	

Note and Sources:

If credit rating unavailable for utility, subsidiary rating used.

¹ SNL Financial, Downloaded on August 11, 2017.

² *The Value Line Investment Survey*, June 2, 2017.

³ Ahern direct at 3.

Laclede Gas Company / Missouri Gas Energy

Consensus Analysts' Growth Rates

<u>Line</u>	<u>Company</u>	<u>Zacks</u>		<u>SNL</u>		<u>Reuters</u>		<u>Average of Growth Rates</u>
		<u>Estimated Growth %¹</u>	<u>Number of Estimates</u>	<u>Estimated Growth %²</u>	<u>Number of Estimates</u>	<u>Estimated Growth %³</u>	<u>Number of Estimates</u>	
		(1)	(2)	(3)	(4)	(5)	(6)	
1	Atmos Energy Corporation	7.00%	N/A	7.00%	2	7.30%	2	7.10%
2	New Jersey Resources Corporation	6.00%	N/A	6.50%	2	6.00%	1	6.17%
3	Northwest Natural Gas Company	4.30%	N/A	4.67%	3	4.00%	1	4.32%
4	South Jersey Industries, Inc.	10.00%	N/A	10.00%	2	N/A	N/A	10.00%
5	Southwest Gas Holdings, Inc.	5.00%	N/A	5.35%	2	4.00%	1	4.78%
6	Spire Inc.	4.40%	N/A	3.70%	2	3.74%	2	3.95%
7	Average	6.12%	N/A	6.20%	2	5.01%	1	6.05%

Sources:

¹ Zacks Elite, <http://www.zackselite.com/>, downloaded on August 11, 2017.

² SNL Interactive, <http://www.snl.com/>, downloaded on August 11, 2017.

³ Reuters, <http://www.reuters.com/>, downloaded on August 11, 2017.

Laclede Gas Company / Missouri Gas Energy

Constant Growth DCF Model (Consensus Analysts' Growth Rates)

<u>Line</u>	<u>Company</u>	<u>13-Week AVG Stock Price¹</u> (1)	<u>Analysts' Growth²</u> (2)	<u>Annualized Dividend³</u> (3)	<u>Adjusted Yield</u> (4)	<u>Constant Growth DCF</u> (5)
1	Atmos Energy Corporation	\$84.22	7.10%	\$1.80	2.29%	9.39%
2	New Jersey Resources Corporation	\$41.56	6.17%	\$1.02	2.61%	8.77%
3	Northwest Natural Gas Company	\$61.63	4.32%	\$1.88	3.18%	7.51%
4	South Jersey Industries, Inc.	\$34.96	10.00%	\$1.09	3.44%	13.44%
5	Southwest Gas Holdings, Inc.	\$78.00	4.78%	\$1.98	2.66%	7.44%
6	Spire Inc.	\$71.21	3.95%	\$2.10	3.07%	7.01%
7	Average	\$61.93	6.05%	\$1.65	2.87%	8.93%
8	Median					8.14%

Sources:

¹ SNL Financial, Downloaded on August 13, 2017.

² Schedule MPG-4.

³ *The Value Line Investment Survey*, June 2, 2017.

Laclede Gas Company / Missouri Gas Energy

Payout Ratios

<u>Line</u>	<u>Company</u>	<u>Dividends Per Share</u>		<u>Earnings Per Share</u>		<u>Payout Ratio</u>	
		<u>2016</u> (1)	<u>Projected</u> (2)	<u>2016</u> (3)	<u>Projected</u> (4)	<u>2016</u> (5)	<u>Projected</u> (6)
1	Atmos Energy Corporation	\$1.68	\$2.30	\$3.38	\$4.50	49.70%	51.11%
2	New Jersey Resources Corporation	\$0.98	\$1.12	\$1.61	\$2.15	60.87%	52.09%
3	Northwest Natural Gas Company	\$1.87	\$2.00	\$2.12	\$3.15	88.21%	63.49%
4	South Jersey Industries, Inc.	\$1.06	\$1.30	\$1.34	\$1.80	79.10%	72.22%
5	Southwest Gas Holdings, Inc.	\$1.80	\$2.50	\$3.18	\$4.75	56.60%	52.63%
6	Spire Inc.	\$1.96	\$2.50	\$3.24	\$4.65	60.49%	53.76%
7	Average	\$1.56	\$1.95	*\$2.48	\$3.50	65.83%	57.55%

Source:

The Value Line Investment Survey, June 2, 2017.

Laclede Gas Company / Missouri Gas Energy

Sustainable Growth Rate

Line	Company	3 to 5 Year Projections										Sustainable Growth Rate
		Dividends Per Share (1)	Earnings Per Share (2)	Book Value Per Share (3)	Book Value Growth (4)	ROE (5)	Adjustment Factor (6)	Adjusted ROE (7)	Payout Ratio (8)	Retention Rate (9)	Internal Growth Rate (10)	
1	Atmos Energy Corporation	\$2.30	\$4.50	\$38.50	2.93%	11.69%	1.01	11.86%	51.11%	48.89%	5.80%	10.25%
2	New Jersey Resources Corporation	\$1.12	\$2.15	\$18.25	6.09%	11.78%	1.03	12.13%	52.09%	47.91%	5.81%	5.87%
3	Northwest Natural Gas Company	\$2.00	\$3.15	\$32.25	1.65%	9.77%	1.01	9.85%	63.49%	36.51%	3.60%	4.60%
4	South Jersey industries, Inc.	\$1.30	\$1.80	\$25.00	9.04%	7.20%	1.04	7.51%	72.22%	27.78%	2.09%	3.92%
5	Southwest Gas Holdings, Inc.	\$2.50	\$4.75	\$57.70	10.50%	8.23%	1.05	8.64%	52.63%	47.37%	4.09%	6.35%
6	Spire Inc.	\$2.50	\$4.65	\$48.30	4.52%	9.63%	1.02	9.84%	53.76%	46.24%	4.55%	6.09%
7	Average	\$1.95	\$3.50	\$36.67	5.79%	9.72%	1.03	9.97%	57.55%	42.45%	4.32%	6.18%

Sources and Notes:

Cols. (1), (2) and (3): *The Value Line Investment Survey*, June 2, 2017.

Col. (4): [Col. (3) / Page 2 Col. (2)] ^ (1/number of years projected) - 1.

Col. (5): Col. (2) / Col. (3).

Col. (6): [2 * (1 + Col. (4))] / (2 + Col. (4)).

Col. (7): Col. (6) * Col. (5).

Col. (8): Col. (1) / Col. (2).

Col. (9): 1 - Col. (8).

Col. (10): Col. (9) * Col. (7).

Col. (11): Col. (10) + Page 2 Col. (9).

Laclede Gas Company / Missouri Gas Energy

Sustainable Growth Rate

Line	Company	13-Week	2016	Market	Common Shares		Growth	S Factor ³	V Factor ⁴	S * V
		Average	Book Value		to Book	Outstanding (in Millions) ²				
		Stock Price ¹	Per Share ²	Ratio	2016	3-5 Years	(6)	(7)	(8)	(9)
		(1)	(2)	(3)	(4)	(5)				
1	Atmos Energy Corporation	\$84.22	\$33.32	2.53	103.93	120.00	2.92%	7.37%	60.44%	4.46%
2	New Jersey Resources Corporation	\$41.56	\$13.56	3.06	85.88	86.00	0.03%	0.09%	67.32%	0.06%
3	Northwest Natural Gas Company	\$61.63	\$29.71	2.07	28.63	30.00	0.94%	1.95%	51.80%	1.01%
4	South Jersey Industries, Inc.	\$34.96	\$16.22	2.16	79.48	86.00	1.59%	3.43%	53.61%	1.84%
5	Southwest Gas Holdings, Inc.	\$78.00	\$35.03	2.23	47.48	52.00	1.84%	4.09%	55.09%	2.25%
6	Spire Inc.	\$71.21	\$38.73	1.84	45.65	50.00	1.84%	3.38%	45.61%	1.54%
7	Average	\$61.93	\$27.77	2.31	65.18	70.67	1.52%	3.38%	55.65%	1.86%

Sources and Notes:

¹ SNL Financial, Downloaded on August 13, 2017.

² *The Value Line Investment Survey*, June 2, 2017.

³ Expected Growth in the Number of Shares, Column (3) * Column (6).

⁴ Expected Profit of Stock Investment, [1 - 1 / Column (3)].

Laclede Gas Company / Missouri Gas Energy

Constant Growth DCF Model (Sustainable Growth Rate)

<u>Line</u>	<u>Company</u>	<u>13-Week AVG Stock Price¹</u> (1)	<u>Sustainable Growth²</u> (2)	<u>Annualized Dividend³</u> (3)	<u>Adjusted Yield</u> (4)	<u>Constant Growth DCF</u> (5)
1	Atmos Energy Corporation	\$84.22	10.25%	\$1.80	2.36%	12.61%
2	New Jersey Resources Corporation	\$41.56	5.87%	\$1.02	2.60%	8.47%
3	Northwest Natural Gas Company	\$61.63	4.60%	\$1.88	3.19%	7.80%
4	South Jersey Industries, Inc.	\$34.96	3.92%	\$1.09	3.25%	7.17%
5	Southwest Gas Holdings, Inc.	\$78.00	6.35%	\$1.98	2.70%	9.04%
6	Spire Inc.	\$71.21	6.09%	\$2.10	3.13%	9.22%
7	Average	\$61.93	6.18%	\$1.65	2.87%	9.05%
8	Median					8.76%

Sources:

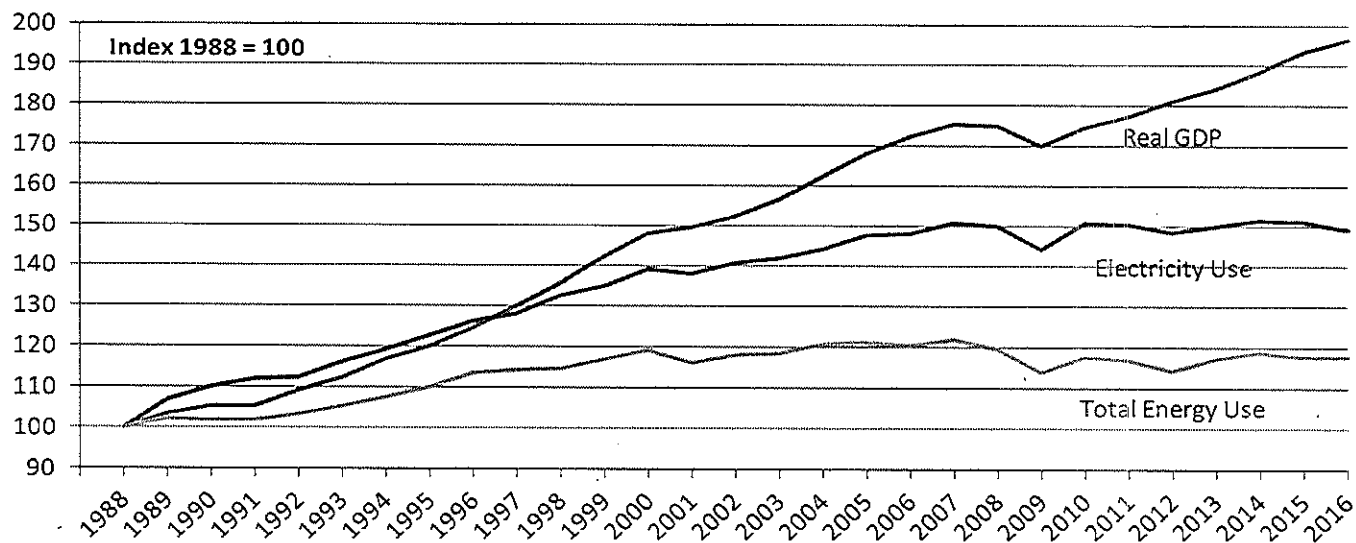
¹ SNL Financial, Downloaded on August 13, 2017.

² Schedule MPG-7, page 1.

³ *The Value Line Investment Survey*, June 2, 2017.

Laclede Gas Company / Missouri Gas Energy

Electricity Sales Are Linked to U.S. Economic Growth



Note:

1988 represents the base year. Graph depicts increases or decreases from the base year.

Sources:

U.S. Energy Information Administration
Federal Reserve Bank of St. Louis

Laclede Gas Company / Missouri Gas Energy

Multi-Stage Growth DCF Model

Line	Company	13-Week AVG	Annualized	First Stage	Second Stage Growth					Third Stage	Multi-Stage
		Stock Price ¹	Dividend ²	Growth ³	Year 6	Year 7	Year 8	Year 9	Year 10	Growth ⁴	Growth DCF
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Atmos Energy Corporation	\$84.22	\$1.80	7.10%	6.62%	6.13%	5.65%	5.17%	4.68%	4.20%	6.88%
2	New Jersey Resources Corporation	\$41.56	\$1.02	6.17%	5.84%	5.51%	5.18%	4.86%	4.53%	4.20%	7.10%
3	Northwest Natural Gas Company	\$61.63	\$1.88	4.32%	4.30%	4.28%	4.26%	4.24%	4.22%	4.20%	7.40%
4	South Jersey Industries, Inc.	\$34.96	\$1.09	10.00%	9.03%	8.07%	7.10%	6.13%	5.17%	4.20%	8.85%
5	Southwest Gas Holdings, Inc.	\$78.00	\$1.98	4.78%	4.69%	4.59%	4.49%	4.39%	4.30%	4.20%	6.93%
6	Spire Inc.	\$71.21	\$2.10	3.95%	3.99%	4.03%	4.07%	4.12%	4.16%	4.20%	7.21%
7	Average	\$61.93	\$1.65	6.05%	5.74%	5.44%	5.13%	4.82%	4.51%	4.20%	7.39%
8	Median										7.15%

Sources:

¹ SNL Financial, Downloaded on August 13, 2017.

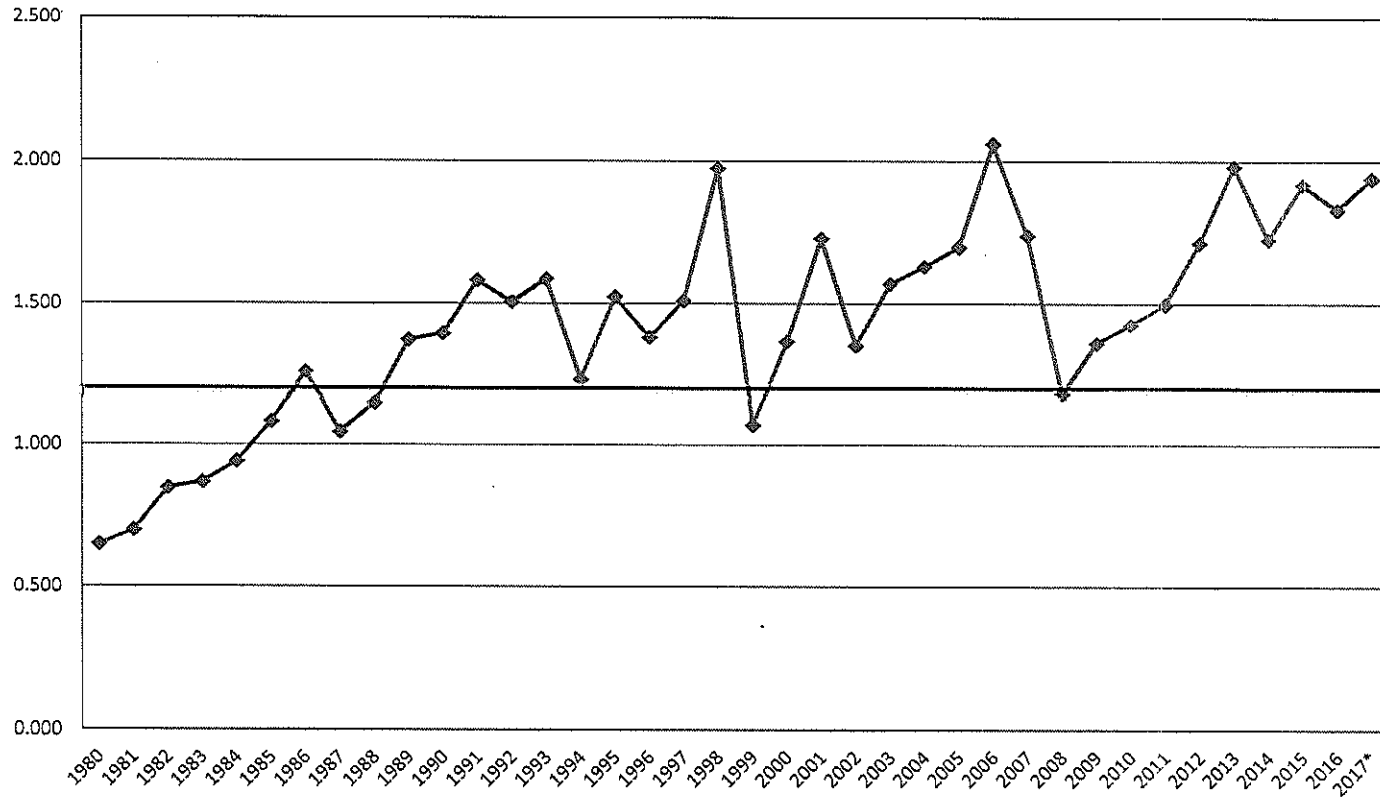
² *The Value Line Investment Survey*, June 2, 2017.

³ Schedule MPG-4.

⁴ *Blue Chip Financial Forecasts*, June 1, 2017 at 14.

Laclede Gas Company / Missouri Gas Energy

Common Stock Market/Book Ratio



Source:

1980 - 2000: Mergent Public Utility Manual.

2001 - 2015: AUS Utility Reports, multiple dates.

2016 - 2017: Value Line Investment Survey, multiple dates.

* Value Line Investment Survey Reports, May 19, June 2, June 16, and July 28, 2017.

Laclede Gas Company / Missouri Gas Energy

Equity Risk Premium - Treasury Bond

<u>Line</u>	<u>Year</u>	<u>Authorized Gas Returns¹</u> (1)	<u>30 yr. Treasury Bond Yield²</u> (2)	<u>Indicated Risk Premium</u> (3)	<u>Rolling 5 - Year Average</u> (4)	<u>Rolling 10 - Year Average</u> (5)
1	1986	13.46%	7.80%	5.66%		
2	1987	12.74%	8.58%	4.16%		
3	1988	12.85%	8.96%	3.89%		
4	1989	12.88%	8.45%	4.43%		
5	1990	12.67%	8.61%	4.06%	4.44%	
6	1991	12.46%	8.14%	4.32%	4.17%	
7	1992	12.01%	7.67%	4.34%	4.21%	
8	1993	11.35%	6.60%	4.75%	4.38%	
9	1994	11.35%	7.37%	3.98%	4.29%	
10	1995	11.43%	6.88%	4.55%	4.39%	4.42%
11	1996	11.19%	6.70%	4.49%	4.42%	4.30%
12	1997	11.29%	6.61%	4.68%	4.49%	4.35%
13	1998	11.51%	5.58%	5.93%	4.73%	4.55%
14	1999	10.66%	5.87%	4.79%	4.89%	4.59%
15	2000	11.39%	5.94%	5.45%	5.07%	4.73%
16	2001	10.95%	5.49%	5.46%	5.26%	4.84%
17	2002	11.03%	5.43%	5.60%	5.45%	4.97%
18	2003	10.99%	4.96%	6.03%	5.47%	5.10%
19	2004	10.59%	5.05%	5.54%	5.62%	5.25%
20	2005	10.46%	4.65%	5.81%	5.69%	5.38%
21	2006	10.40%	4.90%	5.50%	5.70%	5.48%
22	2007	10.22%	4.83%	5.39%	5.66%	5.55%
23	2008	10.39%	4.28%	6.11%	5.67%	5.57%
24	2009	10.22%	4.07%	6.15%	5.79%	5.70%
25	2010	10.15%	4.25%	5.90%	5.81%	5.75%
26	2011	9.92%	3.91%	6.01%	5.91%	5.80%
27	2012	9.94%	2.92%	7.02%	6.24%	5.95%
28	2013	9.68%	3.45%	6.23%	6.26%	5.97%
29	2014	9.78%	3.34%	6.44%	6.32%	6.06%
30	2015	9.60%	2.84%	6.76%	6.49%	6.15%
31	2016	9.50%	2.60%	6.90%	6.67%	6.29%
32	2017 ³	9.50%	2.97%	6.53%	6.57%	6.41%
33	Average	11.02%	5.61%	5.40%	5.36%	5.35%
34	Minimum				4.17%	4.30%
35	Maximum				6.67%	6.41%

Sources:

¹ *Regulatory Research Associates, Inc.*, Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3.
S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions, January-June 2017, July 26, 2017, p. 5.

² St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>.

The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

³ Data includes January - June 2017.

Laclede Gas Company / Missouri Gas Energy

Equity Risk Premium - Utility Bond

<u>Line</u>	<u>Year</u>	<u>Authorized Gas Returns¹</u> (1)	<u>Average "A" Rated Utility Bond Yield²</u> (2)	<u>Indicated Risk Premium</u> (3)	<u>Rolling 5 - Year Average</u> (4)	<u>Rolling 10 - Year Average</u> (5)
1	1986	13.46%	9.58%	3.88%		
2	1987	12.74%	10.10%	2.64%		
3	1988	12.85%	10.49%	2.36%		
4	1989	12.88%	9.77%	3.11%		
5	1990	12.67%	9.86%	2.81%	2.96%	
6	1991	12.46%	9.36%	3.10%	2.80%	
7	1992	12.01%	8.69%	3.32%	2.94%	
8	1993	11.35%	7.59%	3.76%	3.22%	
9	1994	11.35%	8.31%	3.04%	3.21%	
10	1995	11.43%	7.89%	3.54%	3.35%	3.16%
11	1996	11.19%	7.75%	3.44%	3.42%	3.11%
12	1997	11.29%	7.60%	3.69%	3.49%	3.22%
13	1998	11.51%	7.04%	4.47%	3.64%	3.43%
14	1999	10.66%	7.62%	3.04%	3.64%	3.42%
15	2000	11.39%	8.24%	3.15%	3.56%	3.45%
16	2001	10.95%	7.76%	3.19%	3.51%	3.46%
17	2002	11.03%	7.37%	3.66%	3.50%	3.50%
18	2003	10.99%	6.58%	4.41%	3.49%	3.56%
19	2004	10.59%	6.16%	4.43%	3.77%	3.70%
20	2005	10.46%	5.65%	4.81%	4.10%	3.83%
21	2006	10.40%	6.07%	4.33%	4.33%	3.92%
22	2007	10.22%	6.07%	4.15%	4.43%	3.96%
23	2008	10.39%	6.53%	3.86%	4.32%	3.90%
24	2009	10.22%	6.04%	4.18%	4.27%	4.02%
25	2010	10.15%	5.46%	4.69%	4.24%	4.17%
26	2011	9.92%	5.04%	4.88%	4.35%	4.34%
27	2012	9.94%	4.13%	5.81%	4.68%	4.55%
28	2013	9.68%	4.48%	5.20%	4.95%	4.63%
29	2014	9.78%	4.28%	5.50%	5.22%	4.74%
30	2015	9.60%	4.12%	5.48%	5.38%	4.81%
31	2016	9.50%	3.93%	5.57%	5.51%	4.93%
32	2017 ³	9.50%	4.12%	5.38%	5.43%	5.06%
33	Average	11.02%	6.99%	4.03%	3.99%	3.95%
34	Minimum				2.80%	3.11%
35	Maximum				5.51%	5.06%

Sources:

¹ Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3.

S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions, January-June 2017, July 26, 2017, p. 5.

² Mergent Public Utility Manual, Mergent Weekly News Reports, 2003.

The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record.

The utility yields from 2010-2017 were obtained from <http://credittrends.moody.com/>.

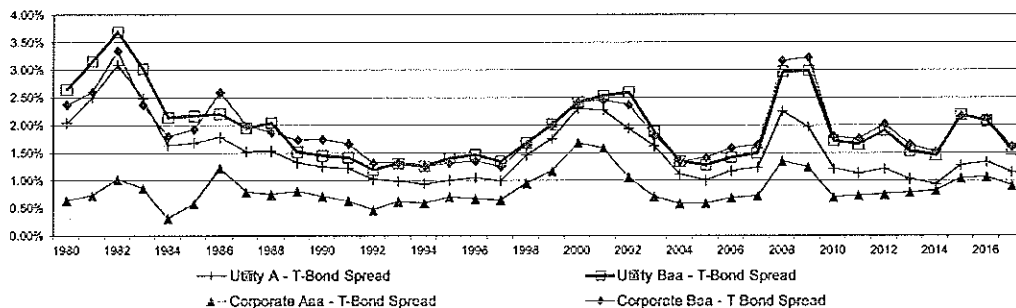
³ Data includes January - June 2017.

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Bond Yield Spreads

Line	Year	T-Bond Yield ¹ (1)	Public Utility Bond				Corporate Bond				Utility to Corporate	
			A ² (2)	Baa ³ (3)	A-T-Bond Spread (4)	Baa-T-Bond Spread (5)	Aaa ³ (6)	Baa ³ (7)	Aaa-T-Bond Spread (8)	Baa-T-Bond Spread (9)	Baa Spread (10)	A-Aaa Spread (11)
1	1980	11.30%	13.34%	13.95%	2.04%	2.65%	11.94%	13.67%	0.64%	2.37%	0.28%	1.40%
2	1981	13.44%	15.95%	16.60%	2.51%	3.16%	14.17%	16.04%	0.73%	2.60%	0.56%	1.78%
3	1982	12.76%	15.86%	16.45%	3.10%	3.69%	13.79%	16.11%	1.03%	3.35%	0.34%	2.07%
4	1983	11.18%	13.66%	14.20%	2.48%	3.02%	12.04%	13.55%	0.86%	2.38%	0.65%	1.62%
5	1984	12.39%	14.03%	14.53%	1.64%	2.14%	12.71%	14.19%	0.32%	1.80%	0.34%	1.32%
6	1985	10.79%	12.47%	12.96%	1.68%	2.17%	11.37%	12.72%	0.53%	1.93%	0.24%	1.10%
7	1986	7.80%	9.58%	10.00%	1.78%	2.20%	9.02%	10.39%	1.22%	2.59%	-0.39%	0.56%
8	1987	8.58%	10.10%	10.53%	1.52%	1.95%	9.38%	10.58%	0.80%	2.00%	-0.05%	0.72%
9	1988	8.96%	10.49%	11.00%	1.53%	2.04%	9.71%	10.83%	0.75%	1.87%	0.17%	0.78%
10	1989	8.45%	9.77%	9.97%	1.32%	1.52%	9.26%	10.18%	0.81%	1.73%	-0.21%	0.51%
11	1990	8.61%	9.86%	10.06%	1.25%	1.45%	9.32%	10.36%	0.71%	1.75%	-0.30%	0.54%
12	1991	8.14%	9.36%	9.55%	1.22%	1.41%	8.77%	9.80%	0.63%	1.67%	-0.25%	0.59%
13	1992	7.67%	8.69%	8.86%	1.02%	1.19%	8.14%	8.98%	0.47%	1.31%	-0.12%	0.55%
14	1993	6.60%	7.59%	7.91%	0.99%	1.31%	7.22%	7.93%	0.62%	1.33%	-0.02%	0.37%
15	1994	7.37%	8.31%	8.63%	0.94%	1.26%	7.96%	8.62%	0.59%	1.25%	0.01%	0.35%
16	1995	6.88%	7.89%	8.29%	1.01%	1.41%	7.59%	8.20%	0.71%	1.32%	0.09%	0.30%
17	1996	6.70%	7.75%	8.17%	1.05%	1.47%	7.37%	8.05%	0.67%	1.35%	0.12%	0.38%
18	1997	6.61%	7.60%	7.95%	0.99%	1.34%	7.26%	7.86%	0.66%	1.26%	0.09%	0.34%
19	1998	5.58%	7.04%	7.26%	1.46%	1.68%	6.53%	7.22%	0.95%	1.64%	0.04%	0.51%
20	1999	5.87%	7.62%	7.88%	1.75%	2.01%	7.04%	7.87%	1.18%	2.01%	0.01%	0.58%
21	2000	5.94%	8.24%	8.36%	2.30%	2.42%	7.62%	8.36%	1.68%	2.42%	-0.01%	0.62%
22	2001	5.49%	7.76%	8.03%	2.27%	2.54%	7.08%	7.95%	1.59%	2.45%	0.08%	0.68%
23	2002	5.43%	7.37%	8.02%	1.94%	2.59%	6.49%	7.80%	1.06%	2.37%	0.22%	0.88%
24	2003	4.96%	6.58%	6.84%	1.62%	1.89%	5.67%	6.77%	0.71%	1.81%	0.08%	0.91%
25	2004	5.05%	6.16%	6.40%	1.11%	1.35%	5.63%	6.39%	0.58%	1.35%	0.00%	0.53%
26	2005	4.65%	5.65%	5.93%	1.00%	1.28%	5.24%	6.06%	0.59%	1.42%	-0.14%	0.41%
27	2006	4.90%	6.07%	6.32%	1.17%	1.42%	5.59%	6.48%	0.69%	1.58%	-0.16%	0.48%
28	2007	4.83%	6.07%	6.33%	1.24%	1.50%	5.56%	6.48%	0.72%	1.65%	-0.15%	0.52%
29	2008	4.28%	6.53%	7.25%	2.25%	2.97%	5.63%	7.45%	1.35%	3.17%	-0.20%	0.90%
30	2009	4.07%	6.04%	7.06%	1.97%	2.99%	5.31%	7.30%	1.24%	3.23%	-0.24%	0.73%
31	2010	4.25%	5.46%	5.96%	1.21%	1.71%	4.95%	6.04%	0.70%	1.79%	-0.08%	0.52%
32	2011	3.91%	5.04%	5.56%	1.13%	1.65%	4.64%	5.67%	0.73%	1.76%	-0.10%	0.40%
33	2012	2.92%	4.13%	4.83%	1.21%	1.90%	3.67%	4.94%	0.75%	2.02%	-0.11%	0.46%
34	2013	3.45%	4.48%	4.98%	1.03%	1.53%	4.24%	5.10%	0.79%	1.65%	-0.12%	0.24%
35	2014	3.34%	4.28%	4.80%	0.94%	1.46%	4.16%	4.86%	0.82%	1.52%	-0.06%	0.12%
36	2015	2.84%	4.12%	5.03%	1.27%	2.19%	3.89%	5.00%	1.05%	2.16%	0.03%	0.23%
37	2016	2.60%	3.93%	4.67%	1.33%	2.08%	3.66%	4.71%	1.07%	2.12%	-0.04%	0.27%
38	2017 ⁴	2.97%	4.12%	4.52%	1.15%	1.55%	3.88%	4.58%	0.91%	1.61%	-0.05%	0.24%
39	Average	6.62%	8.13%	8.57%	1.51%	1.95%	7.46%	8.55%	0.84%	1.94%	0.01%	0.67%

Yield Spreads
Treasury Vs. Corporate & Treasury Vs. Utility



Sources:

- ¹ St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>.
- ² The utility yields for the period 1980-2000 were obtained from Mergent Public Utility Manual, Mergent Weekly News Reports, 2003. The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record. The utility yields for the period 2010-2017 were obtained from <http://credtrends.moodys.com/>.
- ³ The corporate yields for the period 1980-2009 were obtained from the St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>. The corporate yields from 2010-2017 were obtained from <http://credtrends.moodys.com/>.
- ⁴ Data includes January - June 2017.

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Treasury and Utility Bond Yields

<u>Line</u>	<u>Date</u>	<u>Treasury Bond Yield¹</u> (1)	<u>"A" Rated Utility Bond Yield²</u> (2)	<u>"Baa" Rated Utility Bond Yield²</u> (3)
1	08/11/17	2.79%	3.86%	4.22%
2	08/04/17	2.84%	3.90%	4.27%
3	07/28/17	2.89%	3.97%	4.32%
4	07/21/17	2.81%	3.91%	4.27%
5	07/14/17	2.91%	4.02%	4.40%
6	07/07/17	2.93%	4.06%	4.44%
7	06/30/17	2.84%	3.98%	4.36%
8	06/23/17	2.71%	3.86%	4.26%
9	06/16/17	2.78%	3.93%	4.31%
10	06/09/17	2.86%	4.00%	4.37%
11	06/02/17	2.80%	3.97%	4.34%
12	05/26/17	2.92%	4.07%	4.43%
13	05/19/17	2.90%	4.06%	4.44%
14	Average	2.84%	3.97%	4.34%
15	Spread To Treasury		1.13%	1.50%

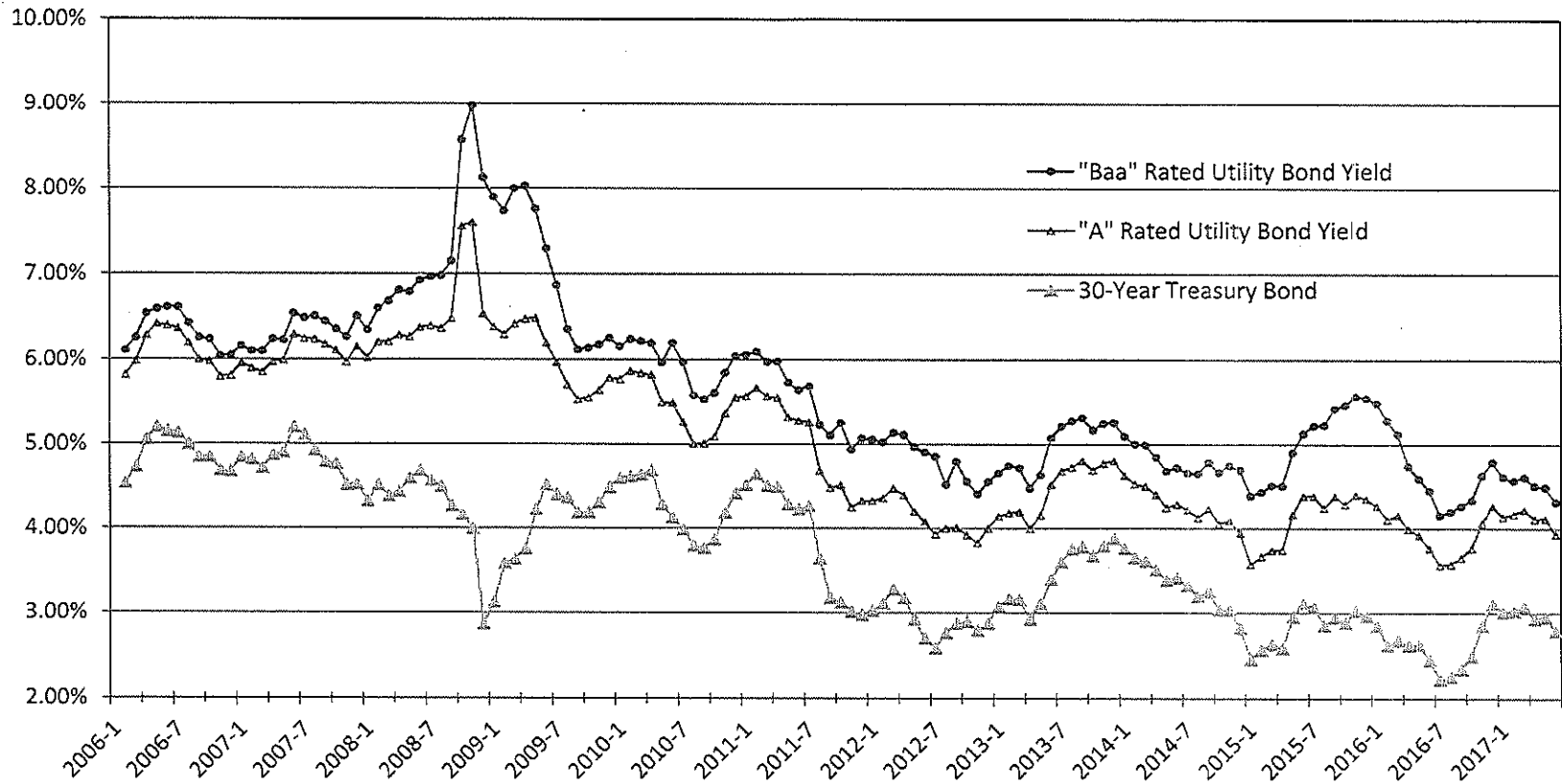
Sources:

¹ St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org>.

² <http://credittrends.moodys.com/>.

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Trends in Bond Yields



Sources:

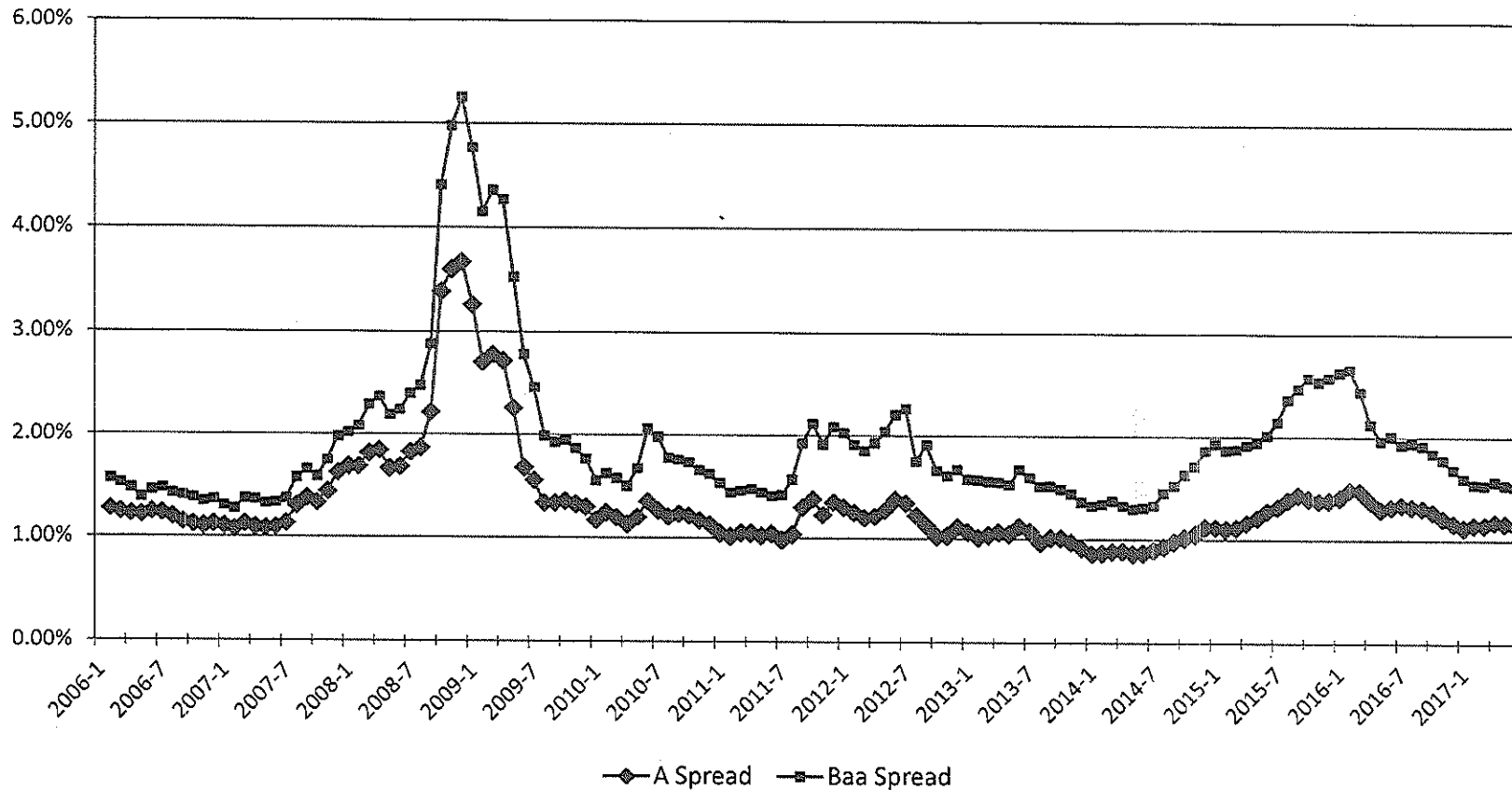
Mergent Bond Record.

www.moodys.com, Bond Yields and Key Indicators.

St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>

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Yield Spread Between Utility Bonds and 30-Year Treasury Bonds



Sources:

Mergent Bond Record.

www.moodys.com, Bond Yields and Key Indicators.

St. Louis Federal Reserve: Economic Research, <http://research.stlouisfed.org/>

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Value Line Beta

<u>Line</u>	<u>Company</u>	<u>Beta</u>
1	Almos Energy Corporation	0.70
2	New Jersey Resources Corporation	0.80
3	Northwest Natural Gas Company	0.65
4	South Jersey Industries, Inc.	0.80
5	Southwest Gas Holdings, Inc.	0.75
6	Spire Inc.	0.70
7	Average	0.73

Source:
The Value Line Investment Survey,
June 2, 2017.

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CAPM Return

<u>Line</u>	<u>Description</u>	High Market Risk <u>Premium</u> (1)	Low Market Risk <u>Premium</u> (2)
1	Risk-Free Rate ¹	3.70%	3.70%
2	Risk Premium ²	7.80%	6.00%
3	Beta ³	0.73	0.73
4	CAPM	9.42%	8.10%

Sources:

¹ *Blue Chip Financial Forecasts*; August 1, 2017, at 2.

² *Duff & Phelps, 2017 SBBI Yearbook* at 6-17 and 6-18, and
Duff & Phelps, 2017 Valuation Handbook at 3-36 and 3-48.

³ Schedule MPG-16.