MISSOURI PUBLIC SERVICE COMMISSION

**STAFF REPORT** 

## **COST OF SERVICE**

**REVENUE REQUIREMENT** 

# **APPENDIX 2**

Support for Staff Cost of Capital Recommendations

## LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. d/b/a LIBERTY UTILITIES

## CASE NO. GR-2014-0152

Jefferson City, Missouri June 2014

NP

\* Denotes Proprietary Information \*

## AN ANALYSIS OF THE COST OF CAPITAL

FOR

## LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. d/b/a LIBERTY UTILITIES

CASE NO. GR-2014-0152

**SCHEDULES** 

BY

## ZEPHANIA MAREVANGEPO

## UTILITY SERVICES DEPARTMENT

## **REGULATORY REVIEW DIVISION**

## MISSOURI PUBLIC SERVICE COMMISSION

**JUNE 2014** 

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	Federal Reserve	Federal Reserve
Date	Discount Rate	Funds Rate
01/01/83	8 50%	T unuo Tutto
12/31/83	8 50%	
04/09/84	9 00%	
11/21/84	8 50%	
12/24/84	8 00%	
05/20/85	7 50%	
03/07/86	7 00%	
04/21/86	6 50%	
07/11/86	6 00%	
08/21/86	5 50%	
09/04/87	6 00%	
08/09/88	6 50%	
02/24/89	7 00%	
07/13/90	7 00 /0	8 00% *
10/29/90		7 75%
10/29/90		7 50%
12/07/90		7 30%
12/07/90		
	6.500/	7 00%
12/19/90	6 50%	6750
01/09/91	6.000/	6 75%
02/01/91	6 00%	6 25%
03/08/91	5 500/	6 00%
04/30/91	5 50%	5 75%
08/06/91		5 50%
09/13/91	5 00%	5 25%
10/31/91		5 00%
11/06/91	4 50%	4 75%
12/06/91		4 50%
12/20/91	3 50%	4 00%
04/09/92		3 75%
07/02/92	3 00%	3 25%
09/04/92		3 00%
01/01/93		
12/31/93	No Changes	No Changes
02/04/94		3 25%
03/22/94		3 50%
04/18/94		3 75%
05/17/94	3 50%	4 25%
08/16/94	4 00%	4 75%
11/15/94	4 75%	5 50%
02/01/95	5 25%	6 00%
07/06/95		5 75%
12/19/95		5 50%
01/31/96	5 00%	5 25%
03/25/97		5 50%
12/12/97	5 00%	
01/09/98	5 00%	
03/06/98	5 00%	
09/29/98		5 25%
10/15/98	4 75%	5 00%
11/17/98	4 50%	4 75%
	• •	•

#### Federal Reserve Discount Rates Changes and Federal Reserve Funds Rates Changes

	Federal Reserve	Federal Reserve
Date	Discount Rate	Funds Rate
06/30/99	4 50%	5 00%
08/24/99	4 75%	5 25%
11/16/99	5 00%	5 50%
02/02/00	5 25%	5 75%
03/21/00	5 50%	6 00%
05/19/00	6 00%	6 50%
01/03/01	5 75%	6 00%
01/04/01	5 50%	6 00%
01/31/01	5 00%	5 50%
03/20/01	4 50%	5 00%
04/18/01	4 00%	4 50%
05/15/01	3 50%	4 00%
06/27/01	3 25%	3 75%
08/21/01	3 00%	3 50%
09/17/01	2 50%	3 00%
10/02/01	2 00%	2 50%
11/06/01	1 50%	2 00%
12/11/01	1 25%	1 75%
11/06/02	0 75%	1 25%
01/09/03	2 25%**	1 25%
06/25/03	2 00%	1 00%
06/30/04	2 25%	1 25%
08/10/04	2 50%	1 50%
09/21/04	2 75%	1 75%
11/10/04	3 00%	2 00%
12/14/04	3 25%	2 25%
02/02/05	3 50%	2 50%
03/22/05	3 75%	2 75%
05/03/05	4 00%	3 00%
06/30/05	4 25%	3 25%
08/09/05	4 50%	3 50%
09/20/05	4 75%	3 75%
11/01/05	5 00%	4 00%
12/13/05	5 25%	4 25%
01/31/06	5 50%	4 50%
03/28/06	5 75%	4 75%
05/10/06	6 00%	5 00%
06/29/06	6 25%	5 25%
08/17/07	5 75%	5 25%
09/18/07	5 25%	4 75%
10/31/07	5 00%	4 50%
12/11/07	4 75%	4 25%
01/22/08	4 00%	3 50%
01/30/08	3 50%	3 00%
03/16/08	3 25%	
03/18/08	2 50%	2 25%
04/30/08	2 25%	2 00%
10/08/08	1 75%	1 50%
10/28/08	1 25%	1 00%
11/29/08	1 50%	1 25%
12/30/08	0 50%	0% - 25%
02/19/10	0 75%	0% - 25%
	•	

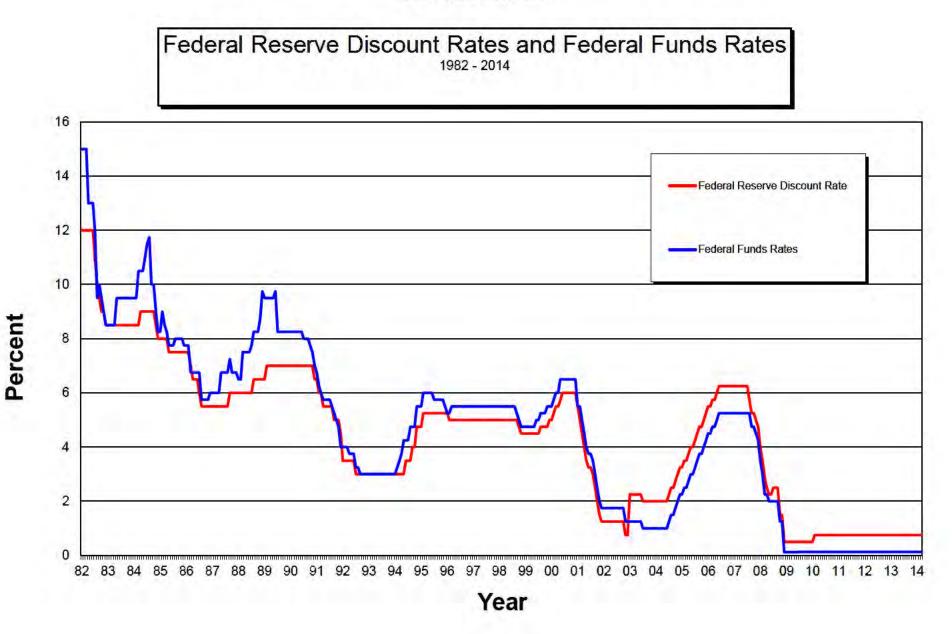
\* Staff began tracking the Federal Funds Rate

\*\*Revised discount window program begins Reflects rate on primary credit This revised discount window policy results in incomparability of the discount rates after January 9, 2003 to discount rates before January 9, 2003

Source: Federal Reserve Discount rate Federal Reserve Funds rate

http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html

Note: Interest rates as of December 31 for each year are underlined



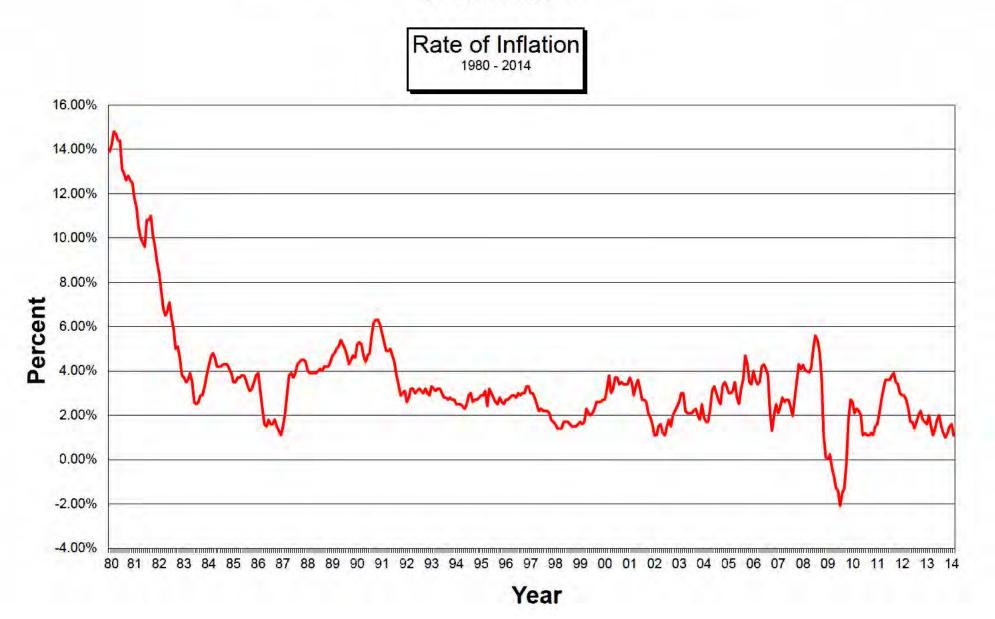
**Rate of Inflation** 

Mo/Year Jan 1980	Rate (%)	Mo/Year Jan 1984	Rate (%) 4 20	Mo/Year Jan 1988	Rate (%) 4 00	Mo/Year Jan 1992	Rate (%) 2 60	Mo/Year Jan 1996	Rate (%) 2 70	Mo/Year Jan 2000	Rate (%) 2 70	Mo/Year Jan 2004	Rate (%) 1 90	Mo/Year Jan 2008	Rate (%) 4 30	Mo/Year Jan 2012	Rate (%) 2 90
Feb	13 90	Feb	4 60	Feb	3 90	Feb	2 80	Feb	2 70	Feb	3 20	Feb	1 90	Feb	4 00	Feb	2 90
Mar	14 80	Mar	4 80	Mar	3 90	Mar	3 20	Mar	2 80	Mar	3 70	Mar	1 70	Mar	4 00	Mar	2 70
Apr	14 70	Apr	4 60	Apr	3 90	Apr	3 20	Apr	2 90	Apr	3 00	Apr	2 30	Apr	3 90	Apr	2 30
May	14 40	May	4 20	May	3 90	May	3 00	May	2 90	May	3 20	May	3 10	May	4 20	May	1 70
Jun	14 40	Jun	4 20	Jun	4 00	Jun	3 10	Jun	2 80	Jun	3 70	Jun	3 30	Jun	5 00	Jun	1 70
Jul	13 10	Jul	4 20	Jul	4 10	Jul	3 20	Jul	3 00	Jul	3 70	Jul	3 00	Jul	5 60	Jul	1 40
Aug	12 90	Aug	4 30	Aug	4 00	Aug	3 10	Aug	2 90	Aug	3 40	Aug	2 70	Aug	5 40	Aug	1 70
Sep	12 60	Sep	4 30	Sep	4 20	Sep	3 00	Sep	3 00	Sep	3 50	Sep	2 50	Sep	4 90	Sep	2 00
Oct	12 80	Oct	4 30	Oct	4 20	Oct	3 20	Oct	3 00	Oct	3 40	Oct	3 30	Oct	3 70	Oct	2 20
Nov	12 60	Nov	4 10	Nov	4 20	Nov	3 00	Nov	3 30	Nov	3 40	Nov	3 50	Nov	1 10	Nov	1 80
Dec	12 50	Dec	3 90	Dec	4 40	Dec	2 90	Dec	3 30	Dec	3 40	Dec	3 30	Dec	0 10	Dec	1 70
Jan 1981	11 80	Jan 1985	3 50	Jan 1989	4 70	Jan 1993	3 30	Jan 1997	3 00	Jan 2001	3 70	Jan 2005	3 00	Jan 2009	0 00	Jan 2013	1 60
Feb	11 40	Feb	3 50	Feb	4 80	Feb	3 20	Feb	3 00	Feb	3 50	Feb	3 00	Feb	0 20	Feb	2 00
Mar	10 50	Mar	3 70	Mar	5 00	Mar	3 10	Mar	2 80	Mar	2 90	Mar	3 10	Mar	-0 40	Mar	1 50
Apr	10 00	Apr	3 70	Apr	5 10	Apr	3 20	Apr	2 50	Apr	3 30	Apr	3 50	Apr	-0 70	Apr	1 10
May	9 80	May	3 80	May	5 40	May	3 20	May	2 20	May	3 60	May	2 80	May	-1 28	May	1 40
Jun	9 60	Jun	3 80	Jun	5 20	Jun	3 00	Jun	2 30	Jun	3 20	Jun	2 50	Jun	-1 40	Jun	1 80
Jul	10 80	Jul	3 60	Jul	5 00	Jul	2 80	Jul	2 20	Jul	2 70	Jul	3 20	Jul	-2 10	Jul	2 00
Aug	10 80	Aug	3 30	Aug	4 70	Aug	2 80	Aug	2 20	Aug	2 70	Aug	3 60	Aug	-1 50	Aug	1 50
Sep	11 00	Sep	3 10	Sep	4 30	Sep	2 70	Sep	2 20	Sep	2 60	Sep	4 70	Sep	-1 30	Sept	1 20
Oct	10 10	Oct	3 20	Oct	4 50	Oct	2 80	Oct	2 10	Oct	2 10	Oct	4 30	Oct	-0 20	Oct	1 00
Nov	9 60	Nov	3 50 3 80	Nov	4 70	Nov	2 70	Nov	1 80	Nov	1 90	Nov	3 50	Nov	1 80	Nov	1 20 1 50
Dec Jan 1982	8 90 8 40	Dec Jan 1986	3 80	Dec Jan 1990	4 60 5 20	Dec Jan 1994	2 70 2 50	Dec Jan 1998	1 70 1 60	Dec Jan 2002	1 60 1 10	Dec Jan 2006	3 40 4 00	Dec Jan 2010	2 70 2 60	Dec Jan 2014	1 50
Feb	8 40 7 60	Feb	3 90	Feb	5 30	Feb	2 50 2 50	Feb	1 40	Feb	1 10	Feb	4 00 3 60	Feb	2 10	Feb	1 10
Mar	6 80	Mar	2 30	Mar	5 20	Mar	2 50 2 50	Mar	1 40	Mar	1 10	Mar	3 40	Mar	2 10	reb	1 10
Apr	6 50	Apr	1 60	Apr	4 70	Apr	2 30 2 40	Apr	1 40	Apr	1 60	Apr	3 50	April	2 20		
May	6 70	May	1 50	May	4 40	May	2 30	May	1 70	May	1 20	May	4 20	May	2 00		
Jun	7 10	Jun	1 80	Jun	4 70	Jun	2 50	Jun	1 70	Jun	1 10	June	4 30	Jun	1 10		
Jul	6 40	Jul	1 60	Jul	4 80	Jul	2 90	Jul	1 70	Jul	1 50	July	4 10	Jul	1 20		
Aug	5 90	Aug	1 60	Aug	5 60	Aug	3 00	Aug	1 60	Aug	1 80	Aug	3 80	Aug	1 10		
Sep	5 00	Sep	1 80	Sep	6 20	Sep	2 60	Sep	1 50	Sep	1 50	Sep	2 10	Sep	1 10		
Oct	5 10	Oct	1 50	Oct	6 30	Oct	2 70	Oct	1 50	Oct	2 00	Oct	1 30	Oct	1 20		
Nov	4 60	Nov	1 30	Nov	6 30	Nov	2 70	Nov	1 50	Nov	2 20	Nov	2 00	Nov	1 10		
Dec	3 80	Dec	1 10	Dec	6 10	Dec	2 80	Dec	1 60	Dec	2 40	Dec	2 50	Dec	1 50		
Jan 1983	3 70	Jan 1987	1 50	Jan 1991	5 70	Jan 1995	2 90	Jan 1999	1 70	Jan 2003	2 60	Jan 2007	2 10	Jan 2011	1 60		
Feb	3 50	Feb	2 10	Feb	5 30	Feb	2 90	Feb	1 60	Feb	3 00	Feb	2 40	Feb	2 10		
Mar	3 60	Mar	3 00	Mar	4 90	Mar	3 10	Mar	1 70	Mar	3 00	Mar	2 80	Mar	2 70		
Apr	3 90	Apr	3 80	Apr	4 90	Apr	2 40	Apr	2 30	Apr	2 20	Apr	2 60	Apr	3 20		
May	3 50	May	3 90	May	5 00	May	3 20	May	2 10	May	2 10	May	2 70	May	3 60		
Jun	2 60	Jun	3 70	Jun	4 70	Jun	3 00	Jun	2 00	Jun	2 10	Jun	2 70	Jun	3 60		
Jul	2 50	Jul	3 90	Jul	4 40	Jul	2 80	Jul	2 10	Jul	2 10	Jul	2 40	Jul	3 60		
Aug	2 60	Aug	4 30	Aug	3 80	Aug	2 60	Aug	2 30	Aug	2 20	Aug	2 00	Aug	3 80		
Sep	2 90	Sep	4 40	Sep	3 40	Sep	2 50	Sep	2 60	Sep	2 30	Sep	2 80	Sep	3 90		
Oct	2 90	Oct	4 50	Oct	2 90	Oct	2 80	Oct	2 60	Oct	2 00	Oct	3 50	Oct	3 50		
Nov	3 30	Nov	4 50	Nov	3 00	Nov	2 60	Nov	2 60	Nov	1 80	Nov	4 30	Nov	3 40		
Dec	3 80	Dec	4 40	Dec	3 10	Dec	2 50	Dec	2 70	Dec	1 90	Dec	4 10	Dec	3 00		

Source: U.S. Dept of Labor, Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers,

Change for 12-Month Period, Bureau of Labor Statistics,

http://www.bls.gov/schedule/archives/cpi\_nr.htm\_



SCHEDULE 3-2

#### Average Yields on AA, A and BBB Public Utility Bonds

Prin         1348         Februar         1011         Poin         877         Poin         Poin         107         Poin        <	Mo/Year Jan 1980	Rate (%)	Mo/Year Jan 1984	Rate (%)	Mo/Year Jan 1988	Rate (%)	Mo/Year Jan 1992	Rate (%) 8 67	Mo/Year Jan 1996	Rate (%) 7 20	Mo/Year Jan 2000	Rate (%) 8 22	Mo/Year Jan 2004	Rate (%) 6 23	Mo/Year Jan 2008	Rate (%) 6 08	Mo/Year Jan 2012	Rate (%) 4 97
ImageImaImaImageImaImaImaImaImaImaImaImaImaImaImaImaImaI																		
Apr1350Apr1350Apr170May872May870May874May874May874May874May874May874May874May874May874May874May874May874May874May874May875May875May673May <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>																		
Image <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>																		
Init         Ist         Ist <td>-</td> <td></td>	-		-		-		-		-		-		-		-		-	
Ind         1212         and         1242         and         1243         Sep         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240         1240      <	•		•						•						•			
Alge     12 22     Auge     14 ab     Auge     8 ab     Auge     8 ab																		
Sep         1329         Sep         1329         Sep         1310         Sep         6.10         Se																		
Ord         13 53         Ord         9 62         Ord         8 43         Ord         7 76         Ord         8 10         Nov         5 10         Nov         4 13         1 10         Nov         1 10         Nov         1 10         Nov         7	-	13 29	Sep	14 04	Sep	10 56	Sep	8 32	Sep	8 01	Sep	8 16	Sep	6 01	Sep	6 59	Sep	4 75
Ibe         Ise         Ise <td></td> <td>13 53</td> <td>-</td> <td>13 68</td> <td></td> <td>9 92</td> <td>-</td> <td>8 44</td> <td>-</td> <td>7 76</td> <td>-</td> <td>8 08</td> <td>-</td> <td>5 95</td> <td>-</td> <td>7 70</td> <td>-</td> <td>4 69</td>		13 53	-	13 68		9 92	-	8 44	-	7 76	-	8 08	-	5 95	-	7 70	-	4 69
Jan 108         H 24         Jan 108         10.00         Jan 109         8.23         Jan 109         7.9         Jan 2010         7.6         Jan 2005         5.0         Jan 2005         6.7         Jan 2013         4.49           Mar         14.84         Mar         13.66         Mar         10.16         Mar         7.85         Mar         7.80         Mar         7.80         Mar         7.81         Mar         5.80         Mar         6.90         Mar         4.90           Mar         15.81         Mar         12.80         Mar         9.40         Mar         7.81         Mar	Nov	14 07	Nov	13 15	Nov	9 89	Nov	8 53	Nov	7 48	Nov	8 03	Nov	5 97	Nov	7 80	Nov	4 53
He4         He4 <td>Dec</td> <td>14 48</td> <td>Dec</td> <td>12 96</td> <td>Dec</td> <td>10 02</td> <td>Dec</td> <td>8 36</td> <td>Dec</td> <td>7 58</td> <td>Dec</td> <td>7 79</td> <td>Dec</td> <td>5 93</td> <td>Dec</td> <td>6 87</td> <td>Dec</td> <td>4 28</td>	Dec	14 48	Dec	12 96	Dec	10 02	Dec	8 36	Dec	7 58	Dec	7 79	Dec	5 93	Dec	6 87	Dec	4 28
Image	Jan 1981	14 22	Jan 1985	12 88	Jan 1989	10 02	Jan 1993	8 23	Jan 1997	7 79	Jan 2001	7 76	Jan 2005	5 80	Jan 2009	6 77	Jan 2013	4 45
App15.34May13.42Mpr11.41Mpr7.67Mpr8.08Mpr7.81Mpr7.81Mpr7.82Mpr6.01Mpr6.10Mpr4.19May15.84Jun11.91Jun9.49Jun7.68Mur7.71Jun7.75Jun7.75Jun5.61Mur6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75Jun6.76Jun6.75	Feb	14 84	Feb	13 00	Feb	10 02	Feb	8 00	Feb	7 68	Feb	7 69	Feb	5 64	Feb	6 72	Feb	4 49
ImageImageImageImageVale <t< td=""><td>Mar</td><td>14 86</td><td>Mar</td><td>13 66</td><td>Mar</td><td>10 16</td><td>Mar</td><td>7 85</td><td>Mar</td><td>7 92</td><td>Mar</td><td>7 59</td><td>Mar</td><td>5 86</td><td>Mar</td><td>6 85</td><td>Mar</td><td>4 45</td></t<>	Mar	14 86	Mar	13 66	Mar	10 16	Mar	7 85	Mar	7 92	Mar	7 59	Mar	5 86	Mar	6 85	Mar	4 45
Jnd         15 ?         Jun         19 lot         Jun         9 Jon         76 8         Jun         77 7         Jun         77 7         Jun         77 7         Jun         50 7         Jun         60 7         Jun         61 7         Jun <th< td=""><td>Apr</td><td>15 32</td><td>Apr</td><td>13 42</td><td>Apr</td><td>10 14</td><td>Apr</td><td>7 76</td><td>Apr</td><td>8 08</td><td>Apr</td><td>7 81</td><td>Apr</td><td>5 72</td><td>Apr</td><td>6 90</td><td>Apr</td><td>4 19</td></th<>	Apr	15 32	Apr	13 42	Apr	10 14	Apr	7 76	Apr	8 08	Apr	7 81	Apr	5 72	Apr	6 90	Apr	4 19
Jalel15.8Jul18.8Jul9.34Jul7.51Jul7.52Jul7.52Jul7.50Jul7.50Jul5.00July6.15July6.15Jul4.90Sep16.33Sep11.95Sep4.33Sep7.11Sep7.50Sep7.51Sep5.45Sep5.60Sep5.05Sep16.76Or11.31Nov9.33Nor7.00Sep7.61Nov5.88Nov5.80Sep5.05Jone15.77Jone10.66Jan 19909.44Jan 19947.31Jan 19867.60Sep7.62Sep5.88Nov5.83Jan 20105.83Jan 20105.90Jone16.72Jone16.76Jan 198616.72Jan 1986Jan 198616.72Apr7.61Jan 20105.83Jan 20105.91Jan 2010Jan 20105.91Jan 2010Jan 2010<	May	15 84	May	12 89	May	9 92	May	7 78	May	7 94	May	7 88	May	5 60	May	6 83	May	4 36
Ang19.3Ang19.3Ang9.37Ang7.10Ang7.57Ang7.57Ang5.51Ang5.80Ang5.90Sep16.80Sep11.84Oct9.37Oct6.90Oct7.37Oct7.64Oct5.74SepSep5.74SepSep5.74SepSep5.74SepSep5.74SepSepSep5.74SepSepSepSep5.74Sep	Jun	15 27	Jun	11 91	Jun	9 49	Jun	7 68	Jun	7 77	Jun	7 75	Jun	5 39	June	6 54	Jun	4 70
Sep         16 %         Sep         11 95         Sep         9 43         Sep         7 10         Sep         7 73         Sep         7 73         Sep         5 60         S	Jul		Jul		Jul		Jul		Jul		Jul		Jul		July		Jul	
Oct         15 %         Oct         9 37         Oct         9 70         Oct         74         Nov         74         Nov <td>Aug</td> <td>16 33</td> <td>Aug</td> <td>11 93</td> <td>Aug</td> <td>9 37</td> <td>Aug</td> <td>7 21</td> <td>Aug</td> <td>7 57</td> <td>Aug</td> <td>7 57</td> <td>Aug</td> <td>5 51</td> <td>0</td> <td>5 80</td> <td>Aug</td> <td>5 00</td>	Aug	16 33	Aug	11 93	Aug	9 37	Aug	7 21	Aug	7 57	Aug	7 57	Aug	5 51	0	5 80	Aug	5 00
Nove11 33Nove9.33Nove9.33Nove7.24Nove7.64Nove7.88Nove5.88Nove5.78Dece5.76D	Sep		Sep	11 95	Sep		Sep	7 01	Sep	7 50	Sep		Sep		Sep	5 60	Sep	
Dec.15 77Dec.10 82Dec.9 31Dec.7 33Dec.7 16Dec.7 86Dec.5 83Dec.5 86Dec.5 80Dec.5 80Dec.Dec.5 80Dec.																		
Jan 19821673Jan 1986106Jan 19909.44Jan 19947.31Jan 19987.03Jan 2027.69Jan 2065.77Jan 20105.81Jan 20.44.91Feb1607Mar9.33Mar9.33Mar9.75Mar7.83Mar7.13Mar7.83Mar7.13Mar7.83Mar7.13Mar7.83Mar7.13Mar7.83Mar7.13Mar7.83Mar7.13Mar7.83Mar7.13Mar7.83Mar7.13Mar7.83Mar7.13Mar7.14Apr6.28Apr5.98Feb4.74Apr15.82Apr9.52May9.89May8.32May7.11May7.67May6.39Jun5.55.77Jun6.39Jun <td></td>																		
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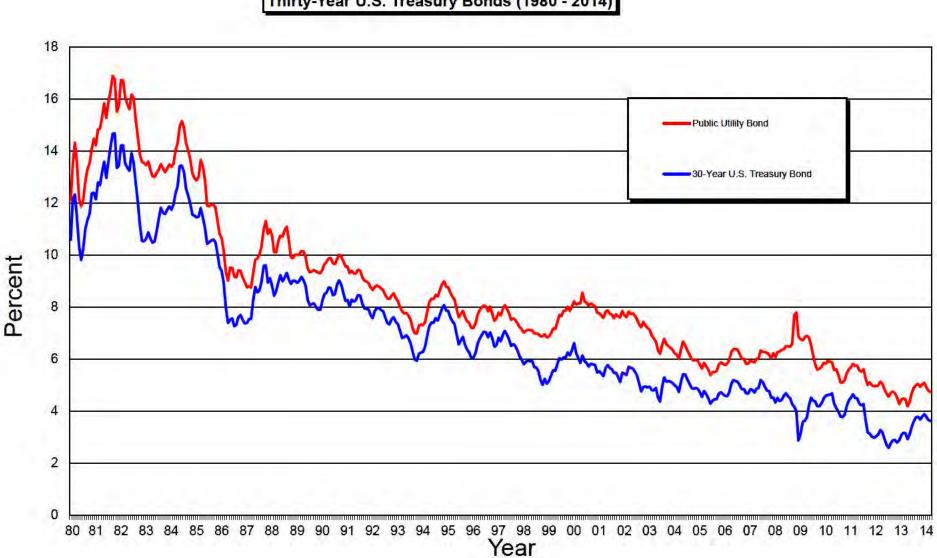
Source:

Mergent Bond Record (through November 2010); BondsOnline (December 2010 to present)

#### Average Yields on Thirty-Year U.S. Treasury Bonds

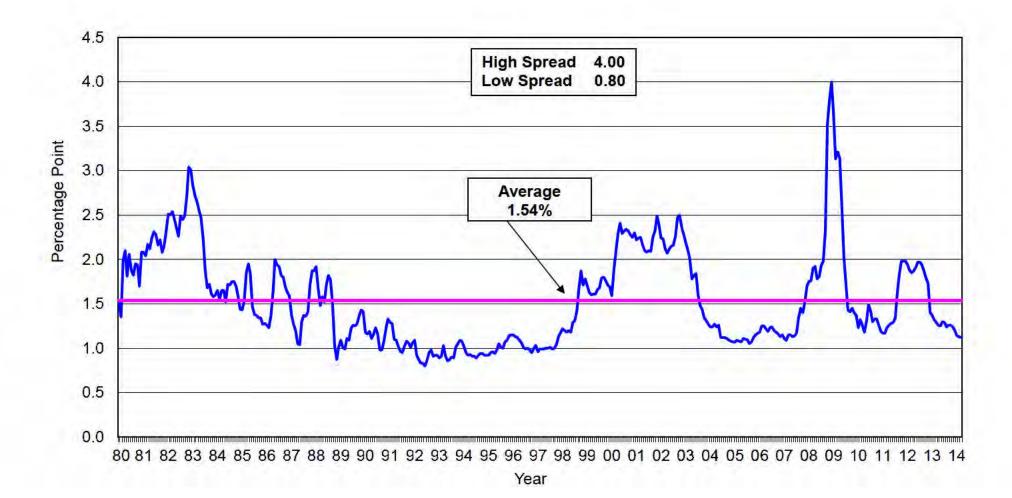
Mo/Year Jan 1980	Rate (%) 10 60	Mo/Year Jan 1984	Rate (%) 11 75	Mo/Year Jan 1988	Rate (%) 8 83	Mo/Year Jan 1992	Rate (%) 7 58	Mo/Year Jan 1996	Rate (%) 6 05	Mo/Year Jan 2000	Rate (%) 6 63	Mo/Year Jan 2004	Rate (%) 4 99	Mo/Year Jan 2008	Rate (%) 4 33	Mo/Year Jan 2012	Rate (%) 3 03
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Mar	12 13	Mar	12 38	Mar	8 63	Mar	7 97	Mar	6 60	Mar	6 05	Mar	4 74	Mar	4 39	Mar	3 28
Apr	11 40	Apr	12 65	Apr	8 95	Apr	7 96	Apr	6 79	Apr	5 85	Apr	5 14	Apr	4 44	Apr	3 18
May	10 36	May	13 43	May	9 23	May	7 89	May	6 93	May	6 15	May	5 42	May	4 60	May	2 93
Jun	9 81	Jun	13 44	Jun	9 00	Jun	7 84	Jun	7 06	Jun	5 93	Jun	5 41	Jun	4 69	Jun	2 70
Jul	10 24	Jul	13 21	Jul	9 14	Jul	7 60	Jul	7 03	Jul	5 85	Jul	5 22	Jul	4 57	Jul	2 59
Aug	11 00	Aug	12 54	Aug	9 32	Aug	7 39	Aug	6 84	Aug	5 72	Aug	5 06	Aug	4 50	Aug	2 77
Sep	11 34	Sep	12 29	Sep	9 06	Sep	7 34	Sep	7 03	Sep	5 83	Sep	4 90	Sep	4 27	Sep	2 88
Oct	11 59	Oct	11 98	Oct	8 89	Oct	7 53	Oct	6 81	Oct	5 80	Oct	4 86	Oct	4 17	Oct	2 90
Nov	12 37	Nov	11 56	Nov	9 02	Nov	7 61	Nov	6 48	Nov	5 78	Nov	4 89	Nov	4 00	Nov	2 80
Dec	12 40	Dec	11 52	Dec	9 01	Dec	7 44	Dec	6 55	Dec	5 49	Dec	4 86	Dec	2 87	Dec	2 88
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Mar	12 69	Mar	11 81	Mar	9 17	Mar	6 82	Mar	6 93	Mar	5 34	Mar	4 78	Mar	3 64	Mar	3 16
Apr	13 20	Apr	11 47	Apr	9 03	Apr	6 85	Apr	7 09	Apr	5 65	Apr	4 65	Apr	3 76	Apr	2 93
May	13 60	May	11 05	May	8 83	May	6 92	May	6 94	May	5 78	May	4 49	May	4 23	May	3 1 1
Jun	12 96	Jun	10 44	Jun	8 27	Jun	6 81	Jun	6 77	Jun	5 67	Jun	4 29	Jun	4 52	Jun	3 40
Jul	13 59	Jul	10 50	Jul	8 08	Jul	6 63	Jul	6 51	Jul	5 61	Jul	4 4 1	July	4 4 1	Jul	3 61
Aug	14 17	Aug	10 56	Aug	8 1 2	Aug	6 32	Aug	6 58	Aug	5 48	Aug	4 46	Aug	4 37	Aug	3 76
Sep	14 67	Sep	10 61	Sep	8 15	Sep	6 00	Sep	6 50	Sep	5 48	Sep	4 47	Sep	4 19	Sep	3 79
Oct	14 68	Oct	10 50	Oct	8 00	Oct	5 94	Oct	6 33	Oct	5 32	Oct	4 67	Oct	4 19	Oct	3 68
Nov	13 35	Nov	10 06	Nov	7 90	Nov	6 21	Nov	6 1 1	Nov	5 12	Nov	4 73	Nov	4 31	Nov	3 80
Dec	13 45	Dec	9 54	Dec	7 90	Dec	6 25	Dec	5 99	Dec	5 48	Dec	4 66	Dec	4 49	Dec	3 89
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Apr	13 37	Apr	7 39	Apr	8 76	Apr	7 27	Apr	5 92	Apr	5 67	Apr	5 06	Apr	4 69		
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Mar	10 63	Mar	7 55	Mar	8 29	Mar	7 45	Mar	5 58	Mar	4 80	Mar	4 72	Mar	4 51		
Apr	10 48	Apr	8 25	Apr	8 21	Apr	7 36	Apr	5 55	Apr	4 90	Apr	4 86	Apr	4 50		
May	10 53	May	8 78	May	8 27	May	6 95	May	5 81	May	4 53	May	4 90	May	4 29		
Jun	10 93	Jun	8 57	Jun	8 47	Jun	6 57	Jun	6 04	Jun	4 37	Jun	5 20	Jun	4 23		
Jul	11 40	Jul	8 64	Jul	8 45	Jul	672	Jul	5 98	Jul	4 93	July	5 11	Jul	4 27		
Aug	11 82	Aug	8 97	Aug	8 14	Aug	6 86	Aug	6 07	Aug	5 30	Aug	4 93	Aug	3 65		
Sep	11 63	Sep	9 59	Sep	7 95	Sep	6 55	Sep	6 07	Sep	5 14	Sep	4 79	Sep	3 18		
Oct	11 58	Oct	9 61	Oct	7 93	Oct	6 37	Oct	6 26	Oct	5 16	Oct	4 77	Oct	3 13		
Nov	11 75	Nov	8 95	Nov	7 92	Nov	6 26	Nov	6 1 5	Nov	5 13	Nov	4 52	Nov	3 02		
Dec	11 88	Dec	9 12	Dec	7 70	Dec	6 06	Dec	6 35	Dec	5 08	Dec	4 53	Dec	2 98		

Sources: http://finance yahoo com/q/hp?s=^TYX http://research stlouisfed org/fred2/data/GS30 txt

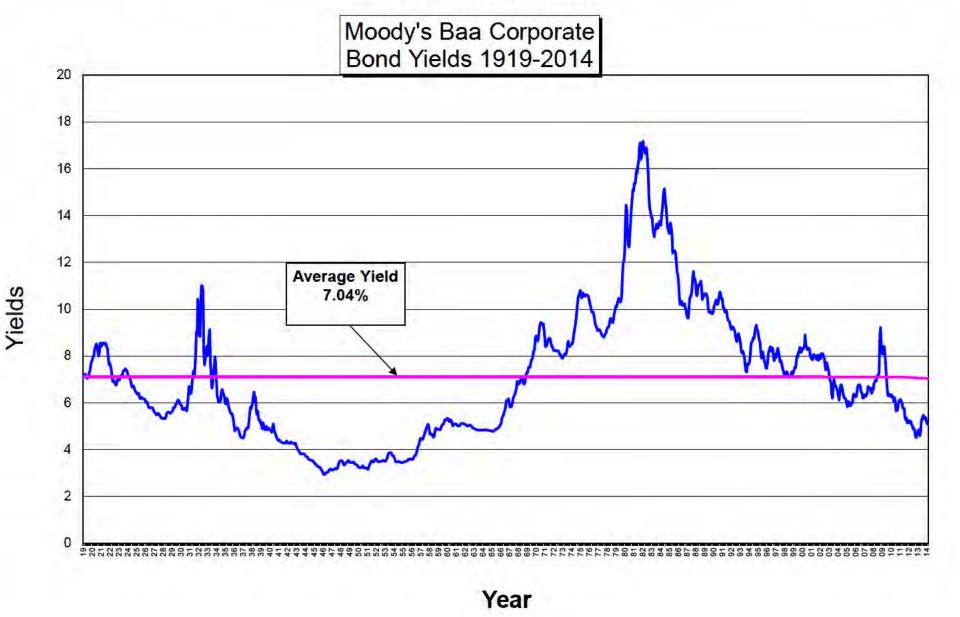


Average Yields on Public Utility Bonds and Thirty-Year U.S. Treasury Bonds (1980 - 2014)

Monthly Spreads Between Public Utility Bond Yields and Thirty-Year U.S. Treasury Bond Yields (1980 - 2014)



**SCHEDULE 4-4** 



Source: St. Louis Federal Reserve Website: http://stlouisfed.org

Algonquin Power & Utilities Consolidated Capital Struecture as of September 30, 2013									
(in dollars)		Percentage							
Capital Components	Dollar Amount	of Capital							
Common Equity	\$1,422,085,000	56.57%							
Long-Term Debt (Long-Term Debt including current portion)	\$1,091,975,000	43.43%							
Total	\$2,514,060,000	100.00%							

Source: Algonquin Power & Utilities Corp., 2013 Third quarter report, Interim Consolidated Balance Sheets-page 52

Liberty Utilities Company Consolidated Capital Structure as of September 30, 2013									
(in dollars)	The second s	Percentage							
Capital Components	Dollar Amount	of Capital							
Common Equity	*								
Long-Term Debt	*								
Total	*								

Source: Liberty Utilities Company Interim Consolidated Balance Sheet as of September 30, 2013.

	Midstates Capital Structure of September 30, 2013	
(in dollars)		Percentage
Capital Components	Dollar Amount	of Capital
Common Equity	*	
Long-Term Debt	*	
Total	*	

Source: GR-2014-0152: Company Workpapers-Schedule COS-9

## Proposed Ratemaking Capital Structure for Liberty Midstates

Capital Component		centage Capital
Common Stock Equity	*	*
Long-Term Debt	*	*
<b>Total Capitalization</b>	*	*

Source: Schedule 6-1: Liberty Utilities Company Capital Structure as of September 30, 2013.

### Liberty Utilities Corp. Consolidated Long-Term Debt Outstanding and embedded debt cost based on stated Interest Rates As of September 30, 2013

	<u>Debt Series</u> (a)	<u>lssued</u>	Maturity	<u>Outstanding</u>	End <u>Int Rate</u>	Annual Int at <u>9/1/2013</u>
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*
*						*

Source: Liberty Utilities Company Interim Consolidated Balance Sheet as of September 30, 2013.

#### Criteria for Selecting Comparable Natural Gas Distribution Companies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Natural Gas Utility Companies	Stock Publicly Traded	At least 65% Operating Income Distribution	Distribution	At least 2 analysts in last 90 days and Current Projected L-T EPS Growth Available	Positive 5-year Historical CAGR in DPS	At Least Investment Grade Credit Rating	Comparable Company Met All Criteria
AGL Resources, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Atmos Energy Corporation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Corning Natural Gas Holding Corp.	Yes	NA					
Delta Natural Gas Company, Inc.	Yes	Yes	Yes	No			
Energen Corporation	Yes	No					
EQT Corporation	Yes	No					
Gas Natural Inc.	Yes	Yes	Yes	No			
Laclede Group Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
National Fuel Gas Company	Yes	No					
New Jersey Resources Corp.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Northwest Natural Gas Company	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ONE Gas Inc.	Yes	NA					
ONEOK, Inc.	Yes	No					
Piedmont Natural Gas Company, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Questar Corporations	Yes	No					
RGC Resources Inc.	Yes	NA					
South Jersey Industries, Inc.	Yes	Yes	Yes	No			
Southern Union Company	No						
Southwest Gas Corporation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WGL Holdings, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Column 1,2,3,4,5 6, and 7 = SNL Financial

## Eight Comparable Natural Gas Distribution Companies For Summit Natural Gas of Missouri

Number	Ticker Symbol	Company Name	Bond Rating
1	GAS	AGL Resources, Inc.	BBB+
2	ATO	Atmos Energy Corporation.	A-
3	LG	Laclede Group Inc.	A-
4	NJR	New Jersey Resources Corporation	A
5	NWN	Northwest Natural Gas	A+
6	PNY	Piedmont Natural Gas Company, Inc.	A
7	SWX	Southwest Gas Corporation	A-
8	WGL	WGL Holdings, Inc.	A+
		Average	A

### Dividends Per Share for the Eight Comparable Natural Gas Distribution Companies

**Dividends Per Share** 

Company Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AGL Resources, Inc.	1.08	1.08	1.11	1.15	1.30	1.48	1.64	1.68	1.72	1.76	2.26	1.38	1.88	1.94	2.01	2.13
Atmos Energy Corporation	1.16	1.18	1.20	1.22	1.24	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.40	1.48	1.55	1.64
Laclede Group Inc.	1.34	1.34	1.34	1.36	1.38	1.41	1.46	1.50	1.54	1.58	1.62	1.66	1.70	1.77	1.83	1.94
New Jersey Resources Corp.	0.78	0.80	0.83	0.87	0.91	0.96	1.01	1.11	1.24	1.36	1.44	1.54	1.62	1.71	1.80	1.90
Northwest Natural Gas Co.	1.25	1.26	1.27	1.30	1.32	1.39	1.44	1.52	1.60	1.68	1.75	1.79	1.83	1.85	1.92	NA
Piedmont Natural Gas Co.	0.76	0.79	0.82	0.85	0.91	0.95	0.99	1.03	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36
Southwest Gas	0.82	0.82	0.82	0.82	0.82	1.03	0.86	0.90	0.95	1.00	1.06	1.18	1.32	1.37	1.48	1.48
WGL Holdings, Inc.	1.26	1.27	1.28	1.30	1.32	1.35	1.37	1.41	1.46	1.50	1.54	1.59	1.66	1.75	1.83	1.97

	<u> 10-Year Historical</u>	5-Year Historcal	<b>3-Year Projected</b>
AGL Resources, Inc.	5.38%	2.83%	4.25%
Atmos Energy Corporation	1.58%	1.52%	5.41%
Laclede Group Inc.	2.16%	2.65%	4.50%
New Jersey Resources Corp.	6.68%	8.35%	5.46%
Northwest Natural Gas Co.	3.58%	4.28%	NA
Piedmont Natural Gas Co.	4.16%	3.75%	3.51%
Southwest Gas	3.77%	5.03%	3.81%
WGL Holdings, Inc.	2.34%	3.06%	5.78%
Average	3.71%	3.93%	4.67%

### **Earnings Per Share** for the Eight Comparable Natural Gas Distribution Companies

Company Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AGL Resources, Inc.	1.62	1.82	2.13	2.28	2.48	2.72	2.72	2.84	2.88	3.00	2.12	2.31	2.64	3.33	3.08	3.10
Atmos Energy Corporation	1.47	1.45	1.71	1.58	1.72	1.82	1.92	1.99	2.07	2.12	2.07	2.10	2.50	2.80	2.90	3.07
Laclede Group Inc.	1.61	1.18	1.82	1.82	1.90	2.30	2.12	2.63	2.89	2.43	2.86	2.79	2.02	3.04	3.16	3.20
New Jersey Resources Corp.	1.33	1.39	1.59	1.70	1.81	5.27	1.55	2.59	0.64	2.82	2.44	2.23	2.75	3.95	3.03	3.00
Northwest Natural Gas Co.	1.88	1.62	1.76	1.86	2.11	2.29	2.76	2.61	2.83	2.73	2.36	2.18	2.24	2.28	2.38	2.50
Piedmont Natural Gas Co.	1.01	0.94	1.11	1.27	1.32	1.28	1.40	1.49	1.67	1.96	1.57	1.66	1.78	1.85	1.90	2.00
Southwest Gas	1.15	1.32	1.13	1.60	1.14	2.05	1.95	1.39	1.94	2.27	2.43	2.86	3.11	2.99	3.15	3.29
WGL Holdings, Inc.	1.75	0.80	2.30	1.98	2.16	1.94	2.19	2.33	2.39	2.16	2.28	2.71	1.55	2.36	2.42	2.66

	<b>10-Year Historical</b>	<u>5-Year Historcal</u>	<b>3-Year Projected</b>
AGL Resources, Inc.	2.41%	-3.11%	5.50%
Atmos Energy Corporation	3.72%	3.08%	7.08%
Laclede Group Inc.	5.22%	1.70%	16.57%
New Jersey Resources Corp.	5.58%	-4.64%	2.94%
Northwest Natural Gas Co.	2.57%	-2.41%	NA
Piedmont Natural Gas Co.	5.05%	3.74%	3.87%
Southwest Gas	8.84%	9.28%	1.89%
WGL Holdings, Inc.	3.03%	0.25%	19.72%
Average	4.55%	0.99%	8.23%

### **Book Value Per Share** for the Eight Comparable Natural Gas Distribution Companies

Company Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AGL Resources, Inc.	12.19	12.52	14.65	18.06	19.27	20.71	21.74	21.48	22.97	23.24	28.35	28.96	30.54	NA	NA	NA
Atmos Energy Corporation	14.31	13.75	16.66	18.05	19.90	20.16	22.01	22.60	23.52	24.16	24.98	26.14	28.47	32.81	32.98	NA
Laclede Group Inc.	15.26	15.10	15.67	16.96	17.31	18.85	19.79	22.12	23.32	24.02	25.56	26.69	32.00	33.11	34.30	35.74
New Jersey Resources Corp.	8.67	8.87	10.19	11.22	10.52	14.74	15.50	17.31	16.59	17.62	18.74	19.55	21.15	24.34	24.60	NA
Northwest Natural Gas Co.	18.56	18.85	19.52	20.64	21.28	21.97	22.52	23.71	24.88	25.99	26.62	27.11	27.77	30.29	31.91	29.60
Piedmont Natural Gas Co.	8.63	8.91	9.36	11.15	11.53	11.70	11.84	12.11	12.67	13.35	13.79	14.21	15.62	17.04	18.63	18.94
Southwest Gas	17.27	17.91	18.42	19.18	19.10	21.58	22.98	23.49	24.44	25.60	26.68	28.39	30.51	32.25	34.03	35.86
WGL Holdings, Inc.	16.24	15.78	16.83	17.54	18.36	18.86	19.89	20.99	21.89	22.63	23.41	24.60	24.62	26.14	28.62	NA

	<u> 10-Year Historical</u>	<u>5-Year Historcal</u>	<b>3-Year Projected</b>
AGL Resources, Inc.	8.36%	6.56%	NA
Atmos Energy Corporation	5.93%	4.21%	NA
Laclede Group Inc.	6.23%	6.76%	3.76%
New Jersey Resources Corp.	7.92%	4.57%	NA
Northwest Natural Gas Co.	3.65%	3.62%	2.15%
Piedmont Natural Gas Co.	4.95%	4.12%	6.64%
Southwest Gas	4.79%	4.69%	5.53%
WGL Holdings, Inc.	4.05%	3.99%	NA
Average	5.74%	4.81%	4.52%

#### Historical and Projected Growth Rates for the Eight Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)
	10-Year	5-Year	Projected
	Historical	Hisotrical	5-Year
	Growth Rate	Growth Rate	EPS Growth
	(DPS, EPS and	(DPS, EPS and	FactSet
Company Name	BVPS)	BVPS)	(Mean)
AGL Resources, Inc.	5.38%	2.10%	1.75%
Atmos Energy Corporation	3.74%	2.94%	6.90%
Laclede Group Inc.	4.54%	3.70%	4.78%
New Jersey Resources Corp.	6.73%	2.76%	3.60%
Northwest Natural Gas Co.	3.27%	1.83%	3.50%
Piedmont Natural Gas Co.	4.72%	3.87%	3.67%
Southwest Gas	5.80%	6.34%	2.55%
WGL Holdings, Inc.	3.14%	2.43%	4.95%
-	4.67%	3.25%	3.96%

Sources: Column 1 = Average of 10-Year Compound Annual Growth Rates from Schedules 9-1 through 9-3.

Column 2 = Average of 10-Year Compound Annual Growth Rates from Schedules 9-1 through 9-3.

Column 3 = SNL Financial

### Long-Term Gas Proxy Group DPS, EPS, BVPS & GDP 10-Year Compound Growth Rate Averages (1968-2013)

DPS		EPS		BVPS		Average	GDP	
	10 yr compound		10 yr compound		10 yr compound	DPS, EPS and		10 yr compound
Years	growth rate avgs	Years	growth rate avgs	Years	growth rate avgs	BVPS	Years	growth rate avgs
1968-70 to 1978-80	3.82%	1968-70 to 1978-80	5.16%	1968-70 to 1978-80	4.59%	4.52%	1968-70 to 1978-80	9.96%
1969-71 to 1979-81	4.13%	1969-71 to 1979-81	5.07%	1969-71 to 1979-81	4.62%	4.61%	1969-71 to 1979-81	10.31%
1970-72 to 1980-82	4.69%	1970-72 to 1980-82	4.75%	1970-72 to 1980-82	4.51%	4.65%	1970-72 to 1980-82	10.32%
1971-73 to 1981-83	5.10%	1971-73 to 1981-83	4.10%	1971-73 to 1981-83	4.30%	4.50%	1971-73 to 1981-83	10.15%
1972-74 to 1982-84	5.50%	1972-74 to 1982-84	5.20%	1972-74 to 1982-84	4.11%	4.94%	1972-74 to 1982-84	9.98%
1972-74 to 1982-84	5.98%	1973-75 to 1983-85	5.87%	1973-75 to 1983-85	4.08%	5.31%	1973-75 to 1983-85	9.93%
1973-75 to 1983-85	6.31%	1974-76 to 1984-86	5.91%	1974-76 to 1984-86	4.08 % 3.96%	5.39%	1973-75 to 1983-85	9.76%
1975-77 to 1985-87	6.80%	1975-77 to 1985-87	5.28%	1975-77 to 1985-87	4.02%	5.37%	1975-77 to 1985-87	9.34%
1976-78 to 1986-88	7.00%	1976-78 to 1986-88	5.37%	1976-78 to 1986-88	4.02 /8	5.55%	1976-78 to 1986-88	9.34 % 8.82%
1977-79 to 1987-89	7.21%	1977-79 to 1987-89	5.07%	1977-79 to 1987-89	4.44%	5.57%	1977-79 to 1987-89	8.35%
								8.35% 7.96%
1978-80 to 1988-90	7.07%	1978-80 to 1988-90	3.85%	1978-80 to 1988-90	4.39% 4.05%	5.11%	1978-80 to 1988-90	7.42%
1979-81 to 1989-91	6.75% 6.13%	1979-81 to 1989-91 1980-82 to 1990-92	2.39% 2.16%	1979-81 to 1989-91	4.05% 3.91%	4.39% 4.07%	1979-81 to 1989-91 1980-82 to 1990-92	7.10%
1980-82 to 1990-92	5.63%	1980-82 to 1990-92	2.86%	1980-82 to 1990-92 1981-83 to 1991-93	3.94%	4.07%	1980-82 to 1990-92	6.75%
1981-83 to 1991-93 1982-84 to 1992-94	5.03% 5.04%		2.86% 2.59%		3.94% 3.98%	4.15% 3.87%		6.52%
		1982-84 to 1992-94		1982-84 to 1992-94			1982-84 to 1992-94	
1983-85 to 1993-95	4.40%	1983-85 to 1993-95	2.36%	1983-85 to 1993-95	3.93%	3.56%	1983-85 to 1993-95	6.15%
1984-86 to 1994-96	3.75%	1984-86 to 1994-96	2.94%	1984-86 to 1994-96	3.91%	3.53%	1984-86 to 1994-96	5.92%
1985-87 to 1995-97	3.39%	1985-87 to 1995-97	3.94%	1985-87 to 1995-97	3.92%	3.75%	1985-87 to 1995-97	5.85%
1986-88 to 1996-98	3.02%	1986-88 to 1996-98	3.44%	1986-88 to 1996-98	3.61%	3.36%	1986-88 to 1996-98	5.78%
1987-89 to 1997-99	2.71%	1987-89 to 1997-99	2.29%	1987-89 to 1997-99	3.25%	2.75%	1987-89 to 1997-99	5.66%
1988-90 to 1998-00	2.44%	1988-90 to 1998-00	2.27%	1988-90 to 1998-00	3.16%	2.63%	1988-90 to 1998-00	5.57%
1989-91 to 1999-01	2.19%	1989-91 to 1999-01	4.07%	1989-91 to 1999-01	3.46%	3.24%	1989-91 to 1999-01	5.55%
1990-92 to 2000-02	2.07%	1990-92 to 2000-02	4.73%	1990-92 to 2000-02	3.67%	3.49%	1990-92 to 2000-02	5.49%
1991-93 to 2001-03	2.01%	1991-93 to 2001-03	4.89%	1991-93 to 2001-03	4.03%	3.64%	1991-93 to 2001-03	5.39%
1992-94 to 2002-04	2.05%	1992-94 to 2002-04	4.50%	1992-94 to 2002-04	4.48%	3.68%	1992-94 to 2002-04	5.31%
1993-95 to 2003-05	2.19%	1993-95 to 2003-05	5.00%	1993-95 to 2003-05	4.98%	4.06%	1993-95 to 2003-05	5.37%
1994-96 to 2004-06	2.42%	1994-96 to 2004-06	5.08%	1994-96 to 2004-06	5.41%	4.30%	1994-96 to 2004-06	5.45%
1995-97 to 2005-07	2.66%	1995-97 to 2005-07	4.84%	1995-97 to 2005-07	5.69%	4.40%	1995-97 to 2005-07	5.45%
1996-98 to 2006-08	2.91%	1996-98 to 2006-08	5.35%	1996-98 to 2006-08	5.98%	4.75%	1996-98 to 2006-08	5.26%
1997-99 to 2007-09	3.18%	1997-99 to 2007-09	6.29%	1997-99 to 2007-09	6.18%	5.22%	1997-99 to 2007-09	4.77%
1998-00 to 2008-10	3.47%	1998-00 to 2008-10	6.81%	1998-00 to 2008-10	6.23%	5.50%	1998-00 to 2008-10	4.26%
1999-01 to 2009-11	3.78%	1999-01 to 2009-11	6.28%	1999-01 to 2009-11	6.25%	5.43%	1999-01 to 2009-11	3.92%
2000-02 to 2010-12	4.02%	2000-02 to 2010-12	5.75%	2000-02 to 2010-12	6.29%	5.35%	2000-02 to 2010-12	3.89%
2001-03 to 2011-13	4.24%	2001-03 to 2011-13	4.59%	2001-03 to 2011-13	6.27%	5.03%	2001-03 to 2011-13	3.91%

Average

4.44% Ave

Average

4.53%

Average

6.81%

Average of 10-year Rolling Averages EPS, DPS and BVPS

4.24%

4.40%

Source: Value Line Investment Survey and SNL Financial

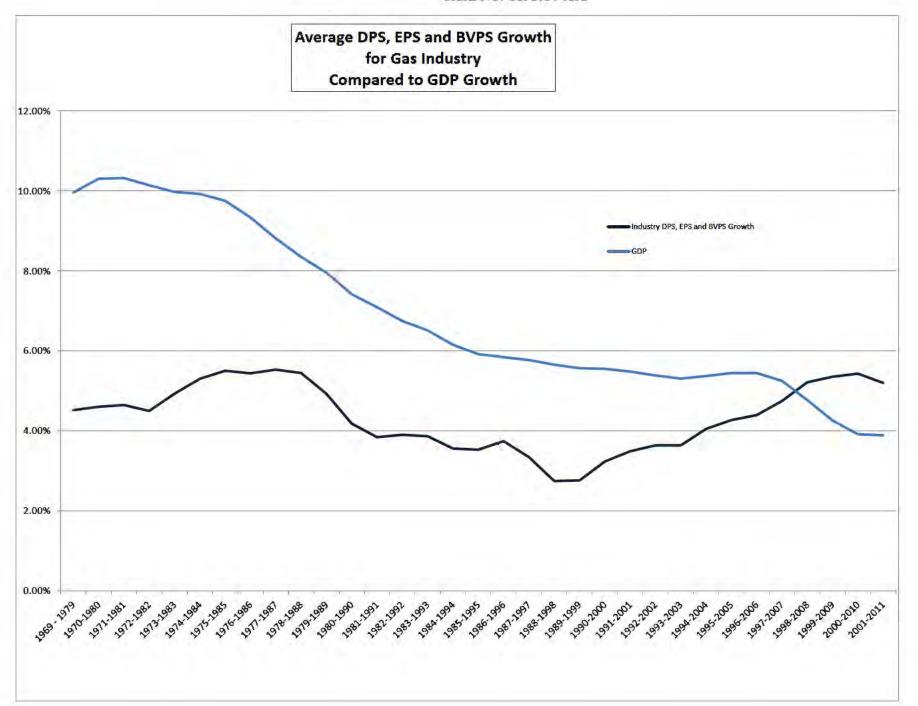
#### Long-Term Gas Proxy Group Excluding Atmos DPS, EPS, BVPS & GDP

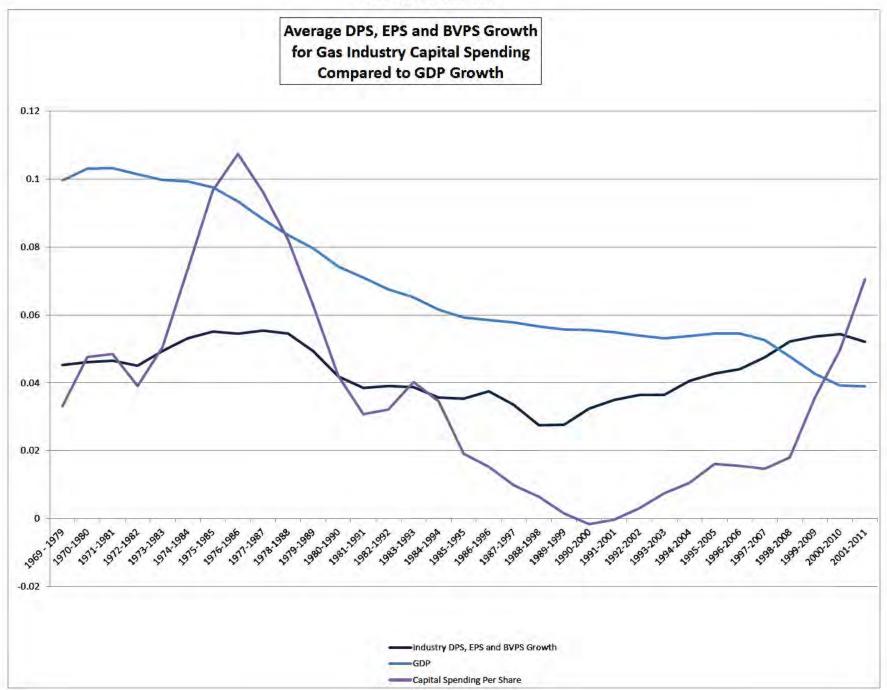
#### **10-Year Compound Growth Rate Averages (1968-2013)**

DPS		EPS		BVPS		Average	GDP	
	10 yr compound		10 yr compound		10 yr compound	DPS, EPS and		10 yr compound
Years	growth rate avgs	Years	fears growth rate avgs		growth rate avgs	BVPS	Years	growth rate avgs
1968-70 to 1978-80	3.82%	1968-70 to 1978-80	5.16%	1968-70 to 1978-80	4.59%	4.52%	1968-70 to 1978-80	9.96%
1969-71 to 1979-81	4.13%	1969-71 to 1979-81	5.07%	1969-71 to 1979-81	4.62%	4.61%	1969-71 to 1979-81	10.31%
1970-72 to 1980-82	4.69%	1970-72 to 1980-82	4.75%	1970-72 to 1980-82	4.51%	4.65%	1970-72 to 1980-82	10.32%
1971-73 to 1981-83	5.10%	1971-73 to 1981-83	4.10%	1971-73 to 1981-83	4.30%	4.50%	1971-73 to 1981-83	10.15%
1972-74 to 1982-84	5.50%	1972-74 to 1982-84	5.20%	1972-74 to 1982-84	4.11%	4.94%	1972-74 to 1982-84	9.98%
1973-75 to 1983-85	5.98%	1973-75 to 1983-85	5.87%	1973-75 to 1983-85	4.08%	5.31%	1973-75 to 1983-85	9.93%
1974-76 to 1984-86	6.31%	1974-76 to 1984-86	5.91%	1974-76 to 1984-86	3.96%	5.39%	1974-76 to 1984-86	9.76%
1975-77 to 1985-87	6.80%	1975-77 to 1985-87	5.28%	1975-77 to 1985-87	4.02%	5.37%	1975-77 to 1985-87	9.34%
1976-78 to 1986-88	7.00%	1976-78 to 1986-88	5.37%	1976-78 to 1986-88	4.27%	5.55%	1976-78 to 1986-88	8.82%
1977-79 to 1987-89	7.21%	1977-79 to 1987-89	5.07%	1977-79 to 1987-89	4.44%	5.57%	1977-79 to 1987-89	8.35%
1978-80 to 1988-90	7.07%	1978-80 to 1988-90	3.85%	1978-80 to 1988-90	4.39%	5.11%	1978-80 to 1988-90	7.96%
1979-81 to 1989-91	6.75%	1979-81 to 1989-91	2.39%	1979-81 to 1989-91	4.05%	4.39%	1979-81 to 1989-91	7.42%
1980-82 to 1990-92	6.13%	1980-82 to 1990-92	2.16%	1980-82 to 1990-92	3.91%	4.07%	1980-82 to 1990-92	7.10%
1981-83 to 1991-93	5.63%	1981-83 to 1991-93	2.86%	1981-83 to 1991-93	3.94%	4.15%	1981-83 to 1991-93	6.75%
1982-84 to 1992-94	5.04%	1982-84 to 1992-94	2.59%	1982-84 to 1992-94	3.98%	3.87%	1982-84 to 1992-94	6.52%
1983-85 to 1993-95	4.40%	1983-85 to 1993-95	2.36%	1983-85 to 1993-95	3.93%	3.56%	1983-85 to 1993-95	6.15%
1984-86 to 1994-96	3.75%	1984-86 to 1994-96	2.94%	1984-86 to 1994-96	3.91%	3.53%	1984-86 to 1994-96	5.92%
1985-87 to 1995-97	3.25%	1985-87 to 1995-97	3.93%	1985-87 to 1995-97	3.80%	3.66%	1985-87 to 1995-97	5.85%
1986-88 to 1996-98	2.85%	1986-88 to 1996-98	3.30%	1986-88 to 1996-98	3.49%	3.21%	1986-88 to 1996-98	5.78%
1987-89 to 1997-99	2.49%	1987-89 to 1997-99	2.34%	1987-89 to 1997-99	3.14%	2.65%	1987-89 to 1997-99	5.66%
1988-90 to 1998-00	2.19%	1988-90 to 1998-00	2.48%	1988-90 to 1998-00	3.09%	2.59%	1988-90 to 1998-00	5.57%
1989-91 to 1999-01	1.95%	1989-91 to 1999-01	4.34%	1989-91 to 1999-01	3.38%	3.22%	1989-91 to 1999-01	5.55%
1990-92 to 2000-02	1.83%	1990-92 to 2000-02	4.88%	1990-92 to 2000-02	3.59%	3.43%	1990-92 to 2000-02	5.49%
1991-93 to 2001-03	1.78%	1991-93 to 2001-03	4.93%	1991-93 to 2001-03	3.91%	3.54%	1991-93 to 2001-03	5.39%
1992-94 to 2002-04	1.86%	1992-94 to 2002-04	4.54%	1992-94 to 2002-04	4.35%	3.58%	1992-94 to 2002-04	5.31%
1993-95 to 2003-05	2.04%	1993-95 to 2003-05	5.14%	1993-95 to 2003-05	4.79%	3.99%	1993-95 to 2003-05	5.37%
1994-96 to 2004-06	2.33%	1994-96 to 2004-06	5.28%	1994-96 to 2004-06	5.24%	4.28%	1994-96 to 2004-06	5.45%
1995-97 to 2005-07	2.66%	1995-97 to 2005-07	5.06%	1995-97 to 2005-07	5.52%	4.41%	1995-97 to 2005-07	5.45%
1996-98 to 2006-08	2.99%	1996-98 to 2006-08	5.78%	1996-98 to 2006-08	5.89%	4.88%	1996-98 to 2006-08	5.26%
1997-99 to 2007-09	3.33%	1997-99 to 2007-09	6.62%	1997-99 to 2007-09	6.10%	5.35%	1997-99 to 2007-09	4.77%
1998-00 to 2008-10	3.70%	1998-00 to 2008-10	7.03%	1998-00 to 2008-10	6.16%	5.63%	1998-00 to 2008-10	4.26%
1999-01 to 2009-11	4.07%	1999-01 to 2009-11	6.21%	1999-01 to 2009-11	6.21%	5.50%	1999-01 to 2009-11	3.92%
2000-02 to 2010-12	4.36%	2000-02 to 2010-12	5.83%	2000-02 to 2010-12	6.27%	5.49%	2000-02 to 2010-12	3.89%
2001-03 to 2011-13	4.62%	2001-03 to 2011-13	4.67%	2001-03 to 2011-13	6.32%	5.20%	2001-03 to 2011-13	3.91%

Average	4.22%	Average	4.51%	Average	4.48%	Average	6.81%
Average of 10-year Rolling Av	erages EPS, I	<b>DPS and BVPS</b>	4.40%				

Source: Value Line Investment Survey and SNL Financial





### LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. d/b/a LIBERTY UTILITIES CASE NO. GR-2014-0152 Average High / Low Stock Price for January 2014 through March 2014 for the Eight Comparable Natural Gas Distribution Companies

	-1	-2	(3)	(4)	(5)	(6)	(7)
	Februar	ry 2014	Marc	ch 2014	Api	il 2014	Average High/Low
	High	Low	High	Low	High	Low	Stock
	Stock	Stock	Stock	Stock	Stock	Stock	Price
Company Name	Price	Price	Price	Price	Price	Price	(2/14 - 4/14)
AGL Resources, Inc.	47.95	45.30	49.84	46.65	54.07	48.29	48.68
Atmos Energy Corp.	48.06	44.26	47.21	44.84	51.82	46.42	47.10
Laclede Group Inc.	46.28	43.95	47.48	45.02	47.47	44.75	45.83
New Jersey Resources Corp.	45.82	43.75	50.47	44.17	50.32	47.70	47.04
Northwest Natural Gas Co.	43.04	40.05	44.09	41.58	45.05	43.60	42.90
Piedmont Natural Gas Co.	33.99	32.12	35.78	33.23	36.55	35.07	34.46
Southwest Gas Corp.	54.98	51.45	55.18	52.42	55.69	52.21	53.66
WGL Holdings, Inc.	40.50	35.35	40.72	38.36	40.45	38.28	38.94

Notes:

Column 7 = [ ( Column 1 + Column 2 + Column 3 + Column 4 + Column 5 + Column 6) / 6 ].

## Expected Annual Dividend for the Eight Comparable Natural Gas Distribution Companies

	FactSet Mean DPS	FactSet Mean DPS	
	2014Y	2015Y	
ACL Descurres Inc	1.04	2.02	
AGL Resources Inc.	1.94	2.02	
Atmos Energy Corporation	1.48	1.55	
Laclede Group, Inc. (The)	1.76	1.83	
New Jersey Resources Corporation	1.71	1.80	
Northwest Natural Gas Company	1.85	1.91	
Piedmont Natural Gas Company, Inc.	1.27	1.32	
Southwest Gas Corporation	1.35	1.45	
WGL Holdings, Inc.	1.74	1.82	

	Expected Annual
Company Name	Dividend
AGL Resources, Inc.	\$1.97
Atmos Energy Corp.	\$1.52
Laclede Group Inc.	\$1.80
New Jersey Resources Corp.	\$1.76
Northwest Natural Gas Co.	\$1.87
Piedmont Natural Gas Co.	\$1.29
Southwest Gas Corp.	\$1.38
WGL Holdings, Inc.	\$1.79
Average	

#### Discounted Cash Flow (DCF) Estimated Costs of Common Equity for the Eight Comparable Natural Gas Distribution Companies,

(1) (2) (3)

	Expected	Average High/Low	Projected
a	Annual <sup>1</sup>	Stock	Dividend
Company Name	Dividend	Price	Yield
AGL Resources, Inc.	\$1.97	\$48.68	4.04%
Atmos Energy Corp.	\$1.52	\$47.10	3.23%
Laclede Group Inc.	\$1.80	\$45.83	3.93%
New Jersey Resources Corp.	\$1.76	\$47.04	3.74%
Northwest Natural Gas Co.	\$1.87	\$42.90	4.36%
Piedmont Natural Gas Co.	\$1.29	\$34.46	3.76%
Southwest Gas Corp.	\$1.38	\$53.66	2.57%
WGL Holdings, Inc.	\$1.79	\$38.94	4.59%
Average			3.78%

Note: Rounded to 10 basis points	Proposed Dividend Yield:	3.80%		
	Proposed Range of Growth:	4.00%	-	5.00%
	Estimated Proxy Cost of Common Equity:	7.80%	-	8.80%
	Adjustment			0.38%
	Cost of Common Equity	8.18%		9.18%
	Recommended Cost of Common Equity Midpoint	8.20%		9.20% 8.70%

#### Notes:

- 1 = Expected Annual Dividend based on weighted average of each companies 2014 fiscal year and 2015 fiscal year FactSet projected dividends per share according to SNL Financial.
- 2 = Three month average (February April 2014) of differences between 'A' rated 'BBB+' rated 30-year bonds from Reuters Corporate Spreads for Utilities BondsOnline data.

Sources: Column 1 = Schedule 10. Column 2 = Schedule 9.

#### Capital Asset Pricing Model (CAPM) Costs of Common Equity Estimates Based on Historical Return Differences Between Common Stocks and Long-Term U.S. Treasuries for the Eight Comparable Natural Gas Distribution Companies

(1)	(2)	(3)	(4)	(5)	(6)
		Arithmetic	Geometric	Arithmetic	Geometric
		Average	Average	CAPM	CAPM
		Market	Market	Cost of	Cost of
Risk		Risk	Risk	Common	Common
Free		Premium	Premium	Equity	Equity
Rate	Beta	(1926-2013)	(1926-2013)	(1926-2013)	(1926-2013)
3 60%	0 83	6 20%	4 64%	8 72%	7 43%
3 60%	0 83	6 20%	4 64%	8 72%	7 43%
3 60%	0 75	6 20%	4 64%	8 26%	7 09%
3 60%	0 81	6 20%	4 64%	8 59%	7 33%
3 60%	0 76	6 20%	4 64%	8 30%	7 12%
3 60%	0 78	6 20%	4 64%	8 40%	7 19%
3 60%	0 89	6 20%	4 64%	9 09%	7 71%
3 60%	0 77	6 20%	4 64%	8 34%	7 15%
	0.80			8.55%	7.31%
	Risk Free Rate 3 60% 3 60% 3 60% 3 60% 3 60% 3 60%	Risk           Free           Rate         Beta           3 60%         0 83           3 60%         0 83           3 60%         0 75           3 60%         0 76           3 60%         0 76           3 60%         0 78           3 60%         0 78           3 60%         0 77	Arithmetic           Average           Market           Risk           Free           Premium           Rate           Beta           (1926-2013)           3 60%         0 83           3 60%         0 83           3 60%         0 75           3 60%         0 75           3 60%         0 76           3 60%         0 76           3 60%         0 78           3 60%         0 89           3 60%         0 89           3 60%         0 77	Arithmetic Average         Geometric Average           Market         Market           Risk         Risk           Free         Premium           Rate         Beta           (1926-2013)         (1926-2013)           3 60%         0 83         6 20%           3 60%         0 83         6 20%           3 60%         0 75         6 20%           3 60%         0 75         6 20%           3 60%         0 76         6 20%           3 60%         0 76         6 20%           3 60%         0 78         6 20%           3 60%         0 78         6 20%           3 60%         0 77         6 20%	Arithmetic Average         Geometric Average         Arithmetic CAPM           Market         Market         Cost of           Risk         Risk         Risk         Risk           Free         Premium         Premium         Equity           Rate         Beta         (1926-2013)         (1926-2013)         (1926-2013)           3 60%         0 83         6 20%         4 64%         8 72%           3 60%         0 75         6 20%         4 64%         8 26%           3 60%         0 81         6 20%         4 64%         8 30%           3 60%         0 76         6 20%         4 64%         8 30%           3 60%         0 78         6 20%         4 64%         8 40%           3 60%         0 77         6 20%         4 64%         8 40%

#### Sources:

- Column 1 = The appropriate yield is equal to the average 30-year U S Treasury Bond yield for February, March and April 2014, which was obtained from the St Louis Federal Reserve website at http://research.stlouisfed.org/fred2/series/GS30/22
- Column 2 = Beta is a measure of the movement and relative risk of an individual stock to the market as a whole Staff calculated the unadjusted Beta for each company using SNL Financial's Beta generator, then adjusted each Beta using the Blume adjustment formula as stated in Ibbotson SBBI's 2010 Valuation Yearbook: Prospective Beta = 0 371 + 0 635 \* Historical Beta
- Column 3 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment The appropriate Market Risk Premium for the period 1926 - 2013 was determined to be 6 20% based on an arithmetic average as calculated in Duff & Phelps 2014 Valuation Handbook: A Guide to the Cost of Capital
- Column 4 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment The appropriate Market Risk Premium for the period 1926 - 2013 was determined to be 4 64% based on a geometric average calculated by using the arithmetic average as calculated in Duff & Phelps 2014 Valuation Handbook: A Guide to the Cost of Capital

#### $R_{A} = R_{g} + (\sigma^{2}/2)$

 $R_A$ = Arithmetic Return Average  $R_g$ = Geometric Return Average  $\sigma$ = standard deviation of equity returns

Column 5 = (Column 1 + (Column 2 \* Column 3))

Column 6 = (Column 1 + (Column 2 \* Column 4))

### Weighted Average Cost of Capital for Liberty Midstates

		Weighted Cost of Capital Using Common Equity Return of:			
Capital Component	Percentage of Capital	Embedded Cost	8.20%	8.70%	9.20%
Common Stock Equity	*				*
Long-Term Debt	*				*
	*				*