

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the Matter of the Application and	)	
Request of The Golden Belt Telephone	)	
Association, Inc. for an Increase in its	)	Docket No.
Cost-Based Kansas Universal Service	)	19-GNBT-505-KSF
Fund Support	)	

DIRECT TESTIMONY

PREPARED BY

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UTILITIES DIVISION

KANSAS CORPORATION COMMISSION

October 11, 2019

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1 **Q. Please state your name and business address.**

2 A. Adam H. Gatewood, 1500 Arrowhead Road, Topeka, Kansas 66604.

3 **Q. Who is your employer and what is your title?**

4 A. I am a Senior Managing Financial Analyst for the Kansas Corporation Commission
5 (Commission).

6 **Q. What is your educational and professional background?**

7 A. I graduated from Washburn University with a B.A. in Economics in 1987 and a Masters of
8 Business Administration in 1996. I have filed testimony on cost of capital, capital structure,
9 and related issues before the Commission in more than 120 proceedings. I have also filed

1 cost of capital testimony before the Federal Energy Regulatory Commission in natural gas
2 pipeline and electric transmission revenue requirement dockets.

3 **Q. What is the purpose of your testimony?**

4 A. My testimony contains Staff's rate of return (ROR) for Golden Belt Telecommunications
5 Association, Inc. (Golden Belt or Applicant) which encompasses Golden Belt's cost of debt,
6 cost of equity (ROE), and capital structure. The rate of return is an input to Staff's revenue
7 requirement study that determines Golden Belt's Kansas Universal Service Fund (KUSF)
8 support.

9 **How Does Setting KUSF Support Levels Differ From a Rate Case**

10 **Q. How does this Docket, in which the Commission is setting the level of KUSF support**
11 **for a rural local exchange carrier (RLEC), differ from a typical rate case?**

12 A. In a typical rate case, the revenue requirement is only collected from a utility's customers.
13 In determining an RLEC's KUSF support, the Commission is not setting a revenue
14 requirement to determine rates solely paid by the RLEC customers, rather the KUSF support
15 is coming from all Kansans who pay into the KUSF, transferring money from users of
16 telecommunications services in Kansas to the ratepayers of an RLEC so that they do not
17 have to pay the full cost of those RLEC telephony services. In essence, all Kansans, either
18 directly or indirectly, are paying a portion of the RLECs' revenue requirements. In setting
19 revenue requirements for any rate regulated industry, a regulatory agency has to balance the
20 interests of a regulated entity and the consumer. In this instance, "consumers' interests"

1 encompass all who contribute to the KUSF support mechanism.

2 **Q. When establishing a reasonable rate of return for RLECs in KUSF dockets, are there**
3 **unique issues that the Commission should be aware of that are not present in gas and**
4 **electric rate cases?**

5 A. Yes, there are challenges in estimating the allowed returns for these KUSF dockets that are
6 not present in rate cases for gas and electric utilities. It is difficult because we are estimating
7 the capital costs associated with providing a very narrow set of telecommunications
8 services.¹ The foremost issue is a lack of publicly traded companies whose primary
9 business is the provision of land-line telephony services in rural areas. Of the few
10 companies that do provide land-line services to rural areas, that segment of their operations
11 is a small percent of their total revenues and earnings. As a result of this limited exposure
12 to RLEC services, investors do not evaluate those companies based on the risks associated
13 with providing RLEC services, but instead, it is the risks and growth potential of providing
14 other telecommunications services such as cellular, internet, and cable television that drive
15 the valuation and expected returns for these companies. Despite these nuances, it is possible
16 to estimate the cost of equity for companies providing RLEC services, but the stakeholders
17 in this process will have to accept a less precise estimate than we would otherwise have if
18 we had access to a robust proxy group for the analysis. This data limitation creates a
19 challenge and it is a matter of fact that parties must accept. In spite of this challenge, there

¹In Kansas, Universal Service is defined by K.S.A. 66-1,187(p): "Universal service" means telecommunications services and facilities which include: single party, two-way voice grade calling; stored program controlled switching with vertical service capability; E911 capability; tone dialing; access to operator services; access to directory assistance; and equal access to long distance services."

1 is ample evidence that demonstrates Staff's recommended return on equity meets the legal
2 requirements of a just and reasonable return to Golden Belt's members.

3 **Executive Summary**

4 **Q. Please summarize your recommendation?**

5 A. I recommend that the Commission adopt an allowed return (ROR) of 7.22% for the purpose
6 of setting Golden Belt's KUSF revenue requirement that incorporates a 9.60% return on
7 equity and a 60% equity ratio. A 9.60% ROR results in an interest coverage ratio of 19.77
8 (see Staff Schedule D-1); providing ample assurance that Golden Belt's annual cash-flows
9 far exceed the minimum specified by loan covenants.²

Staff Cost of Capital Recommendation Golden Belt Telephone Association, Inc.			
	Weight	Cost	Weighted Avg Cost
Equity	60%	9.60%	5.76%
Debt	40%	3.65%	1.46%
		Rate of Return	7.22%

10

11 **Q. Please summarize Golden Belt's rate of return request.**

12 A. Golden Belt requests the Commission grant it an ROR equal to the 10.25% ROR authorized
13 by the Federal Communications Commission (FCC) to calculate federal high-cost support.³
14 It is not based on Golden Belt's actual cost of debt or capital structure. Although Golden

² Response to KCC Data Request No. 88; minimum TIER is 1.50 as of December 31, 2019. TIER = (Net Income + Interest Expense + Depreciation Expense) / Debt Service Payments.

³ Connect America Fund, WC Docket No. 10-90, Rate of Return Order, March 23, 2016.

1 Belt does not explicitly state its requested ROE, Staff's calculations indicate that it is
 2 11.24%, based on its actual capital structure, cost of debt and the 10.25% rate of return.

Rate of Return Requested By Golden Belt Telephone Association. Inc.				
	Balance	Weight	Cost	Weighted Avg Cost
Equity	\$ 85,143,244	86.99%	*	*
Debt	\$ 12,729,437	13.01%	3.65%	0.47%
	\$ 97,872,681			10.25%
Source: Section 7; Schedule 1 of Application; Annual Report				

3
 4 There are several reasons why the FCC's generic ROR does not meet the cost-based
 5 standard that this Commission applies when setting revenue requirements for KUSF
 6 support. First, with respect to the capital structure, the FCC ROR does not differentiate
 7 between costs of debt and equity capital that is employed by Golden Belt. Second, it does
 8 not incorporate Golden Belt's actual cost of debt but instead relies on an industry average
 9 cost of debt. Third, it does not reflect the current trends in the equity capital markets. A
 10 review of the FCC's Order indicates that the 10.75% ROR set by the FCC incorporates an
 11 ROE greater than the cost of equity set by this Commission (and virtually all regulatory
 12 bodies) since the early 2000s. By some measures, the FCC's generic allowed ROR would
 13 result in an ROE in excess of 14.00%.⁴ Golden Belt's requested rate of return ignores its

⁴ Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking In the Matter of Connect America Fund ETC Annual Reports and Certifications Developing a Unified Intercarrier Compensation Regime (WC Docket No. 10-90; WC Docket No. 14-58; and CC Docket No. 01-92) Released March 30, 2016. See paragraph 322.

1 own embedded cost of debt and has no link to returns available in the current capital
2 markets. Because of these problems, Golden Belt's request fails to conform the
3 Commission's established practice and fails the basic principles set out in the key legal
4 decisions rendered by the U.S. Supreme Court, commonly referred to as the "Hope and
5 Bluefield" decisions that are the cornerstone to establishing a fair return.⁵ For these reasons
6 the Commission should reject the FCC ROR as it has in past KUSF dockets.

7 **Summary of Cost of Equity Models**

8 **Q. Please provide an overview of the methods you relied on to arrive at 9.60% ROE.**

9 A. To estimate the RLEC's cost of equity, I applied the same financial models as I do for
10 regulated natural gas distribution and electric utilities. I applied a discounted cash flow
11 (DCF) analysis and capital asset pricing model (CAPM) to a group of telecommunications

322. We note that the WACC is supposed to compensate equity holders and debtholders who provide the funds used to finance the firm's assets. Given a rate of return set equal to 9.75 percent, an average capital structure based on our estimates of 54.34 percent debt, and a cost of debt based on our estimates of 5.87 percent, the implied cost of equity is 14.37percent. We find that not only is the WACC of 9.75 percent high enough adequately to compensate the firm's debtholders, but the implied rate of return on equity also provides equity holders with the opportunity to earn a reasonable rate of return on their investment. As support for our finding that a 9.75 percent rate of return is reasonable, we examine some benchmarks.

⁵ Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia, 262 U.S. 679, 692-3 (1923).

Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591, 603 (1944). *603 [8] [9] The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus, we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view, it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. The conditions under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at. For we are of the view that the end result in this case cannot be condemned under the Act as unjust and unreasonable from the investor or company viewpoint.

1 companies. I also performed a survey of the cost of capital trends in the time since the last
2 KUSF docket which occurred from 2017 through the present to ascertain how the market
3 cost of capital has changed.

4 **Q. What are your impressions of the capital markets?**

5 A. My overall impression is that there is no upward pressure on capital costs from the levels
6 seen over the past decade; if there is a trend in capital costs, it is downward. I reviewed the
7 capital markets from several perspectives and found that the global capital markets continue
8 to be in the same low inflation, slow economic growth, and low capital market returns that
9 became known as the “new-normal” after the Great Recession. Trends in interest rates on
10 public utility bonds, forecasted returns published by asset management firms, and the
11 returns set by public utility commissions for regulated utilities all indicate the continuation
12 of low cost capital, global growth that is far lower than historic averages, and low inflation.
13 The only discernable change in the capital markets is a recent downward trend in corporate
14 bond yields to levels lower than those observed following the Great Recession and not seen
15 since the mid 1950’s and yields on U.S. Treasury Bonds that are at record lows. While at
16 the same time, forecasts by the International Monetary Fund expect slowing growth rates
17 both globally and in the U.S. economy⁶, thus raising the possibility that expectations for
18 economic growth in the U.S. should be tempered downward.

⁶ IMF Cuts Global Growth Forecasts as Trade Tensions Take Toll, Financial Times, April 9, 2019.
<https://www.ft.com/content/43e8a74a-5a97-11e9-939a-341f5ada9d40>

1 **Q. Why do you believe that 9.60% return on equity is reasonable for Golden Belt?**

2 A. First, my analysis demonstrates that a 9.60% return on equity offers investors (Golden Belt
3 members) a significant premium over the returns available on less risky fixed income
4 investments, as well as a premium over returns expected from investments in the equity
5 market. Second, it is also a risk premium that is wholly consistent with that granted to its
6 peers in recent KUSF dockets (see table on p. 10). Third, I demonstrate that a 9.60% return
7 on equity meets the capital attraction test as it results in a TIER of 19.77; well above the
8 1.50 minimum set by Golden Belt's lenders.

9 **Q. Which models do you believe are the most informative to estimate an RLEC's cost of**
10 **equity capital?**

11 A. The following table summarizes the results of the DCF and CAPM analyses. I would not
12 place equal weight to each of the results shown in the table as a couple of those financial
13 models incorporate data that may not be wholly representative of the RLEC industry. To
14 arrive at the 9.60% ROE recommendation, I place greater reliance on the CAPM analyses
15 that incorporate expected returns. I find these to be most persuasive as these CAPM
16 analyses recognize that market returns and interest rates are expected to be lower in the
17 future than those experienced historically. These forward looking CAPM analyses are also
18 not tied to forecasted earnings growth rates for the proxy group where most of the drivers
19 for earnings growth are not related to traditional land-line services. By and large, a 9.60%
20 ROE will allow Golden Belt a return that is, by some forecasts, greater than the expected
21 returns on common stocks in unregulated industries.

1 I am placing little weight on the DCF analysis that incorporates forecasted earnings growth
 2 of the proxy companies. Those growth expectations have shown to be volatile across time
 3 and largely reflect the growth potential of the lines of business other than traditional land-
 4 line telephony services that are part of KUSF supported services.

Summary of Staff's Cost of Equity Estimates 19-GNBT-505-KSF			
<u>Discounted Cash Flow Analyses</u>	<u>Low</u>	<u>High</u>	<u>Average</u>
Two-Stage Growth DCF Model: Based on the Average of Short-Term Growth Forecasts & Long-Term nGDP Forecasts	12.24%	13.36%	12.80%
Single-Stage Growth DCF Model: Based on the Long-Term nGDP Forecasts	8.51%	9.64%	9.08%
<u>Capital Asset Pricing Models</u>			
Based on Historical Return Data, gathered from 1928 to 2018, Reported by Damodaran Online	9.58%	12.08%	10.83%
Based on Forecasted Return Data, gathered from J.P. Morgan Asset Management Long-Term Capital Market Assumptions (2019 edition)	5.84%	7.22%	6.53%
Based on Forecasted Return Data, gathered from BlackRock Investments Projected Long-run Returns Market Assumptions - Geometric Returns (2019 edition)	6.79%	8.91%	7.85%
Based on Forecasted Return Data, gathered from Duff & Phelps Projected Market Risk Premium & Risk Free Return	7.63%	9.83%	8.73%

5

6 **Risk-Premium Provided by a 9.60% ROE**

7 **Q. How does your recommendation in this Docket compare to those in recent KUSF**
 8 **Dockets?**

9 **A.** The best picture of this comparison is the risk-premium that the allowed ROE provides the

1 RLEC investors over bond yields that we observe in the capital markets. This table contains
 2 the KUSF Dockets of the seven years beginning in 2012; the last docket occurred in 2017.
 3 In these Dockets, Staff's recommendations have been in the range of 9.60% to 10.50%. As
 4 a clearer picture on the post-recession economy materialized with slower economic growth
 5 rates and lower capital costs, Staff recommended an ROE of 9.60% to 9.75% in the past
 6 seven dockets.

Staff Positions in Recent KUSF Dockets						
Docket	Testimony Date	Company	Equity Ratio	Staff ROE	Baa/BBB Yields*	Resulting Rp**
12-GRHT-633-KSF	10/18/2012	Gorham Telephone Company	29.69%	10.50%	4.27%	6.23%
12-LHPT-875-AUD	12/19/2012	LaHarpe Telephone Company	90.00%	10.00%	4.33%	5.67%
13-CRKT-268-KSF	3/13/2013	Craw-Kan Telephone Cooperative, Inc.	60.00%	10.00%	4.48%	5.52%
13-ZENT-065-AUD	5/17/2013	Zenda Telephone Company, Inc.	Confidential	10.00%	4.42%	5.58%
13-JBNT-437-KSF	5/23/2013	J.B.N. Telephone Company, Inc.	46.50%	9.75%	4.52%	5.23%
13-PLTT-678-KSF	9/24/2013	Peoples Telecommunications, LLC	55.83%	9.75%	5.19%	4.56%
14-WTCT-142-KSF	2/5/2014	Wamego Telecommunications Co.	61.43%	9.60%	4.78%	4.82%
14-S&TT-525-KSF	9/25/2014	S&T Telephone Cooperative, Inc.	54.86%	9.75%	4.45%	5.30%
15-MRGT-097-KSF	1/20/2015	Moundridge Telephone Co.	Confidential	9.75%	3.91%	5.84%
15-TWVT-213-AUD	9/4/2015	Twin Valley Telephone Co.	47.81%	9.75%	4.56%	5.19%
17-RNBT-555-KSF	10/26/2017	Rainbow Telecomm Assoc. Coop	60.00%	9.75%	4.21%	5.54%
Average Risk Premium of Recent KUSF Dockets						5.41%
* Yield on Baa/BBB Utility Bonds reported by Value-Line Investment Survey at date of Staff's testimony						
**Risk premium of Staff's ROE Recommendation over the Baa/BBB Utility Bond Yield						

7
 8 In the far right column is the resulting risk premium provided by the return on equity
 9 advocated by Staff in each docket. The risk premium is the Staff recommended ROE minus
 10 the average yield on Baa/BBB utility bonds reported each week by Value-Line Investment
 11 Survey. For that time period, the risk premium averaged 5.41%. In the current capital
 12 market environment, the bond yields have fallen below the observations in this table. Given
 13 the recent downward trend of bond yields, an ROE of 9.60% provides a risk premium of
 14 5.40%, which is consistent with risk premiums of past KUSF dockets.

1 Staff's recommendation of a 9.60% ROE allows investors a risk premium over less risky
2 debt investments; consistent with the principles espoused by the Supreme Court in its *Hope*
3 and *Bluefield* decisions. These types of income producing securities are viewed as
4 alternatives to investments in utility stocks because, like utility stocks, bonds offer stable
5 valuations and higher current income, relative to the equity market. Risk premiums vary
6 over time and across market conditions; thus, there is not a benchmark risk premium or
7 formula that sets a reasonable return on equity at a given interest rate.

8 **Q. How does Staff's recommendation compare to the returns available on other**
9 **investments?**

10 A. The following table looks at risk premiums from a broader view of alternative investments
11 and a broader time horizon.

**KCC Staff's Risk Premium Over Fixed Income Yields
Based on a 9.60% Return on Equity**

Monthly Averages	10-Year T-Bond Yield¹	30-Year T-Bond Yield²	Baa Corporate Bond Yield³	BBB/Baa Utility Bond Yield⁴
March, 2019	2.60%	3.00%	4.86%	4.57%
April, 2019	2.54%	2.94%	4.70%	4.43%
May, 2019	2.31%	2.75%	4.60%	4.31%
June, 2019	2.05%	2.56%	4.40%	4.12%
July, 2019	2.08%	2.59%	4.30%	4.02%
August, 2019	1.72%	2.22%	3.95%	3.74%
Six Month Average	2.22%	2.68%	4.47%	4.20%

Staff's Risk Premium Over the Six-Month Average 10-Year Treasury Bond Yield

Staff Recommended Allowed ROE	9.60%
Six Month Average 10-Year Treasury Bond Yield	2.22%
Premium Over Six-Month Average 10-Year Treasury Bond Yield	7.38%

Staff's Risk Premium Over the Six-Month Average 30-Year Treasury Bond Yield

Staff Recommended Allowed ROE	9.60%
Six Month Average 30-Year Treasury Bond Yield	2.68%
Premium Over Six-Month Average 30-Year Treasury Bond Yield	6.92%

Staff's Risk Premium Over the Six-Month Average BBB/Baa Utility Bond Yield

Staff Recommended Allowed ROE	9.60%
Six-Month Average BBB/Baa Utility Bond Yield	4.47%
Premium Over Six-Month Average BBB/Baa Utility Bond Yield	5.13%

Staff's Risk Premium Over the Six-Month Average BBB/Baa Utility Bond Yield

Staff Recommended Allowed ROE	9.60%
Six-Month Average BBB/Baa Utility Bond Yield	4.20%
Premium Over Six-Month Average BBB/Baa Utility Bond Yield	5.40%

Sources:

- 1) Yield on U.S. 10-Year Treasury Bond reported at <https://fred.stlouisfed.org/>
- 2) Yield on U.S. 30-Year Treasury Bond reported at <https://fred.stlouisfed.org/>
- 2) Yield on Baa Corporate Bonds reported at <https://fred.stlouisfed.org/>
- 4) Yield on BBB/Baa Publicly Utility Bonds reported in Value-Line Investment Survey, Selections and Opinions

1

2 The 9.60% ROE also allows for a sizable premium over forecasted returns in the equity
3 market. Over the coming decade, global capital management companies forecast returns

1 on equities to be in the range of 6.76% to 7.00%.⁷

2 **Q. For a point of comparison, could you please summarize ROE decisions by this**
3 **Commission and Commissions across the country?**

4 A. The first table contains allowed return on equity decisions made by this Commission in
5 litigated rate cases. As a point of reference to the prevailing capital markets at that time, I
6 included the yield on Baa rated corporate bonds as of the month of the Commission's
7 decision. In addition to these Commission determinations, in recent dockets, Staff,
8 intervenors, and Evergy, Inc. reached an agreement to set rates using a return on equity of
9 9.30% for Westar (18-WSEE-328-RTS) and Kansas City Power & Light, Company (18-
10 KCPE-480-RTS). The Commission issued Orders accepting the terms of these agreements
11 on September 27, 2018, and December 13, 2018, respectively.

⁷ See market returns used in Staff's capital asset pricing models
J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions, 2019 Edition, J.P. Morgan Asset
Management (published October of 2018).
www.jpmorganinstitutional.com/pages/jpmorgan/am/ia/research_and_publications/long-term_capital_market
<https://www.blackrockblog.com/blackrock-capital-markets-assumptions/>

Risk Premium of Recent Electric and Gas Dockets						
Docket	Testimony Date	Company	Equity Ratio	Staff Recmmnd	*BBB/Baa Utility Bond yld.	Resulting Rp
15-KCPE-116-RTS	5/11/2015	Kansas City Power & Light	50.48%	9.25%	4.62%	4.63%
15-WSEE-115-RTS	7/9/2015	Westar Energy	53.12%	9.25%	4.69%	4.56%
16-KGSG-491-RTS	9/7/2016	Kansas Gas Service	55.00%	8.75%	4.05%	4.70%
16-ATMG-079-RTS	12/21/2016	Atmos Energy	56.12%	9.10%	4.74%	4.36%
18-KCPE-095-MER	1/29/2018	Kansas City Power & Light	*	9.30%	4.18%	5.12%
18-WSEE-328-RTS	6/11/2018	Westar Energy	51.24%	9.30%	4.61%	4.69%
18-KCPE-480-RTS	9/12/2018	Kansas City Power & Light	49.09%	9.30%	4.66%	4.64%
18-KGSG-560-RTS	10/29/2018	Kansas Gas Service	55.00%	9.15%	4.96%	4.19%
19-EPDE-223-RTS	5/13/2019	Empire District Electric Co	51.65%	9.30%	4.37%	4.93%
Average Risk Premium from Recent Gas & Electric Dockets						4.65%
* Yield on Baa/BBB Utility Bonds reported by Value-Line Investment Survey at date of Staff's testimony						

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Last of all, we can review the actions of regulatory agencies that set allowed returns for natural gas and electric utilities. There is ample information on the allowed returns granted to gas and electric utilities while unfortunately there is virtually no reporting of the returns granted to local exchange carriers across the nation. This comparison to other rate-of-return regulated industries is helpful as allowed returns on other rate of return regulated industries have moved in parallel with broad measures of capital costs. The next table shows average observation for returns granted from each quarter. Thus, there have been many opportunities for regulatory commissions to evaluate evidence on investors' required returns. From this data, it is apparent that regulatory commissions concluded that capital costs have trended downward over the past 19 years.

Median Return on Equity		
	Natural	
Date	Gas	Electric
12/31/2000	11.16%	11.50%
12/31/2001	11.00%	11.00%
12/31/2002	11.00%	11.28%
12/31/2003	11.00%	10.75%
12/31/2004	10.50%	10.70%
12/31/2005	10.40%	10.35%
12/31/2006	10.50%	10.23%
12/31/2007	10.20%	10.20%
12/31/2008	10.45%	10.30%
12/31/2009	10.26%	10.50%
12/31/2010	10.10%	10.30%
12/31/2011	10.03%	10.17%
12/31/2012	10.00%	10.08%
12/31/2014	9.78%	9.78%
12/31/2015	9.68%	9.65%
12/31/2016	9.50%	9.75%
12/31/2017	9.60%	9.60%
12/31/2018	9.60%	9.58%
3/30/2019	9.70%	9.70%
6/30/2019	9.73%	9.50%
Source: S&P Market Intelligence; RRA		

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2 I am not presenting this table to argue that RLEC services are either more or less risky than
3 gas and electric utility services. Instead, I am using this table to highlight that for rate of
4 return regulated companies, public service commissions across the country recognize the
5 decline in capital costs over the past decade.

6 **Corporate Structure**

7 **Q. Please describe Golden Belt.**

8 A. Golden Belt is a Kansas rural local exchange carrier (RLEC) organized as a cooperative
9 association serving 3,800 land lines in Kansas.

1 **Q. Is Golden Belt’s corporate structure as a cooperative a factor in determining the**
2 **allowed return?**

3 A. It is an important fact, but it does not change the methodology that Staff uses to estimate
4 the allowed return for KUSF support. Golden Belt is a cooperative association, but the
5 decision was made when Staff began the KUSF audits that we would estimate the cost of
6 capital for RLECs organized as cooperatives using data from the financial markets exactly
7 as we do for the investor-owned RLECs. Thus, we have consistently used the same
8 financial framework and models for both cooperatives and investor owned RLECs
9 throughout the KUSF audits. Staff’s methodology which uses competitive, market-based
10 financial estimates to determine the cost of equity in KUSF support calculations is
11 reasonable because it balances the competing interests of setting the KUSF support at a
12 level that provides affordable services to rural customers, while not burdening the KUSF.

13 Cooperative associations are different from investor-owned public utilities; cooperative
14 associations’ not-for-profit status is the underlying difference between the two.
15 Cooperatives are set up for the sole purpose of serving the needs of its members who are its
16 only customers and its only investors. The cooperative’s members provide it with equity
17 capital to finance plant and equipment just as investors provide investor-owned utilities with
18 equity capital. The key difference between the two types of organizations lies in the
19 investors’ reason for providing equity capital. Common stock holders of investor-owned
20 utilities make the investment because they expect to share in the company’s profits. A
21 cooperative’s members/customers must provide equity capital to their cooperative
22 associations to finance the plant and equipment that provides them with telephony services.

1 **Cost of Debt**

2 **Q. Please discuss your review of Golden Belt's cost of debt?**

3 A. I agree with the 3.65% cost of debt calculated in Section 7 of the Application. I verified
4 that the cost of debt is traceable back to the financial statements and reflects its borrowing
5 costs.

6 **Capital Structure**

7 **Q. Please describe Golden Belt's capital structure presented in Section 7 of its**
8 **Application.**

9 A. Golden Belt reports a capital structure of 87% equity. As you can see in the following table,
10 debt capital was a small portion of its capitalization. I verified that the 87% equity ratio in
11 Section 7 accurately depicts Gold Belt's actual capitalization.

Rate of Return Requested By Golden Belt Telephone Association. Inc.				
	Balance	Weight	Cost	Weighted Avg Cost
Equity	\$ 85,143,244	86.99%	*	*
Debt	\$ 12,729,437	13.01%	3.65%	0.47%
	\$ 97,872,681			10.25%
Source: Section 7; Schedule 1 of Application; Annual Report				

12

13 **Q. Did you use Golden Belt's actual capital structure with 87% equity ratio to calculate**
14 **the ROR?**

1 A. No, I did not because Golden Belt did not provide evidence that it is a cost effective capital
2 structure. Instead, I recommend that the Commission rely on a hypothetical capital structure
3 that contains 40% debt capital and 60% equity capital to calculate the ROR.

4 **Q. Why are you recommending something other than the actual capital structure?**

5 A. Establishing a subsidy payment out of the KUSF should balance the interests of the RLECs
6 that receive the subsidy and Kansas telephony consumers who fund the subsidy, an act that
7 requires that the revenue requirement be estimated using reasonable and cost-effective
8 inputs. There is no evidence that an 87% equity capital structure is cost-effective for an
9 RLEC, thus, it should not be used in the KUSF calculations. I recommend using a
10 hypothetical capital structure to balance the divergent interests of the RLEC and Kansas
11 telecommunications consumers. Golden Belt, like most Kansas RLECs, has access to
12 relatively low cost debt capital. The KUSF subsidy should recognize that RLECs can
13 employ a lower cost capital structure than one that is nearly all equity.

14 **Q. Did Golden Belt provide evidence that its capital structure is cost-effective?**

15 A. No, it did not.

16 **Q. Is Staff recommending that Golden Belt's management change its equity ratio?**

17 A. No. Staff's recommendation pertains only to the capital structure used to calculate the
18 KUSF revenue requirement. Staff is not requesting that Golden Belt change its equity ratio.
19 Staff leaves capitalization decisions to company management.

1 **Q. How did you conclude that a hypothetical capital structure with 60% equity is**
2 **reasonable?**

3 A. Over the course of performing KUSF audits during the past two decades, I have found that
4 an equity ratio of 60% has been the high-end of the range observed for publicly traded
5 telecommunications companies and RLECs operating in Kansas. Staff believes the 60%
6 equity ratio provides RLECs with a reasonable return and a reasonable cost structure for the
7 KUSF subsidy.

Standards for a Just & Reasonable Rate of Return

8 **Q. What standards should public utility commissions consider when authorizing a rate**
9 **of return?**

10 A. The standards for setting a just and reasonable rate of return require that, to be reasonable,
11 the allowed return must reflect the risks associated with an equity investment in the utility.
12 For the allowed return to be in that reasonable range, it must compensate for those added
13 risks while capturing a fair proportion of benefits for consumers. The allowed ROE is best
14 described as the forward-looking discount rate that is necessary to induce equity investors
15 to commit their capital to the enterprise. Standards used to gauge the fairness and
16 reasonableness of an allowed ROE have been stated by courts, as the result of appeals of
17 decisions issued by regulatory agencies. Financial analysts and policy-makers rely on the
18 courts' decisions as a guide in estimating the appropriate cost of capital. The opinions do
19 not articulate precisely how to estimate or model a reasonable cost of capital. Instead, the

1 decisions provide critical questions for policy makers and analysts to consider in
2 determining a reasonable return for a regulated utility. There are several court cases that,
3 as a group, are viewed as the keystone to measuring the adequacy of a utility's allowed
4 return. The earliest of these decisions go back to an era when it was not only the "rate of
5 return" at issue but also the fundamental measurement of the investment in the utility
6 enterprise, commonly referred to as rate base. This is less of an issue today as regulators,
7 utility management, and investors readily accept actual historic-depreciated value as the
8 measure of investment to estimate the value of a utility's rate base (as opposed to
9 reproduction cost or market value). The Court's decision in *Bluefield* addressed both rate
10 base and ROR.⁸

11 In general, United States Supreme Court decisions state that returns granted to regulated
12 public utilities should: 1) be commensurate with returns on investments of similar risk; 2)
13 be sufficient to assure the financial integrity of the utility under efficient economic
14 management; and 3) change over time with changes in the money market and business
15 conditions.⁹ An important take-away from these decisions is that the Supreme Court of the
16 United States has afforded regulatory agencies a significant amount of latitude in
17 establishing an appropriate ROR and ROE for a utility. The Kansas Supreme Court has
18 recognized and follows this body of law.¹⁰ This Commission has noted this fact in Orders

⁸ *Bluefield Water Works & Improvement Co. v. Pub. Svc. Comm'n of West Virginia*, 262 U.S. 679, 692-3 (1923).

⁹ *Smyth v. Ames*, 169 U.S. 466 (1898); *Wilcox v. Consolidated Gas Co.*, 212 U.S. 19, 48-49 (1909); *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-3 (1923); *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591, 603 (1944).

¹⁰ *Kansas Gas & Elec. Co. v. State Corp. Comm'n*, 239 Kan. 483, 491, 720 P. 2d 1063, 1072 (1986).

1 issued in previous dockets.¹¹

2 **Q. How do financial analysts apply the standards established by the Court.**

3 A. For an allowed ROE to meet the legal standards, the return should be as specific as possible
4 to the utility in question. Financial analysts achieve this goal by analyzing not only the
5 utility in question, when it is possible to do so, but also a proxy group of similarly situated
6 utilities. Treatises on rate of return for public utilities, such as The Cost of Capital – A
7 Practitioner’s Guide, agree that *Bluefield* lays out the four standards for a fair return.

- 8 1) *Comparable Earnings* – a utility is entitled to a return similar to that
9 being earned by other enterprises with similar risks, but not as high
10 as those earned by highly profitable or speculative ventures;
11 2) *Financial Integrity* – a utility is entitled to a return level reasonably
12 sufficient to assure financial soundness;
13 3) *Capital Attraction* – a utility is entitled to a return sufficient to
14 support its credit and raise capital; and
15 4) *Changing Level of Returns* – a fair return can change along with
16 economic conditions and capital markets.¹²

17 As a financial analyst formulating rate of return analyses for our state commission, I take
18 from *Bluefield* that the Court requires a rate Order that allows a utility an opportunity to
19 earn a return consistent with the utility’s risk profile and consistent with observations in the
20 capital markets. The Court’s decision in *Hope*,¹³ like that in *Bluefield*, dealt with both

¹¹ Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests, Docket No. 10-KCPE-415-RTS, November 22, 2010, 37-38.

¹² The Cost of Capital – A Practitioner’s Guide by David C. Parcell, Prepared for the Society of Utility and Regulatory Financial Analysts, 1997, pp. 3-13 to 3-14.

¹³ *Federal Power Comm’n. v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). “The rate-making process under the Act, i.e., the fixing of ‘just and reasonable’ rates, involves a balancing of the investor and the consumer interests.

1 valuation of rate base, as well as rate of return on that rate base. With respect to the rate of
2 return, the Court in *Hope* affirmed the four standards set out in *Bluefield*.

3 **In-Depth Discussion of Staff's Cost of Equity Analysis**

4 **Proxy Group Selection**

5 **Q. How did you select a proxy group for your analysis?**

6 A. I began with the FCC proxy group¹⁴ and eliminated companies: 1) that do not pay a
7 dividend; 2) that are not followed by Value Line Investment; and 3) that do not have growth
8 rate estimates reported by YahooFinance. These screens ensured that the analysis is
9 performed on a group of companies in the relevant industry with publicly available financial
10 data and growth forecasts.

Thus, we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view, it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. The conditions under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at. For we are of the view that the end result in this case cannot be condemned under the Act as unjust and unreasonable from the investor or company viewpoint."

¹⁴ Prescribing the Authorized Rate of Return; Analysis of Methods for Establishing Just and Reasonable Rates for Local Exchange Carriers; Wireline Competition Bureau, Staff Report; WC Docket No. 10-90; May 16, 2013. Appendix I3.

FCC Proxy Group

Alaska Communications Systems Group	ACS
Alteva	ALTV
AT&T	T
Century Link	CTL
Cincinnati Bell	CBB
Consolidated Communications Holdings	CNSL
FairPoint	FRP
Frontier Communications Corp	FTR
Hawaiian Telecom	HCOM
Hickory Tech Corp	HTCO
Lumos	LMOS
New Ulm	NULM
Shenandoah Telecommunications Co	SHEN
Telephone & Data Systems	TDS
Verizon	VZ
Windstream	WIN

Source:

Connect America Fund, WC Docket No. 10-90,
Report and Order, May 16, 2016; Appendix I

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With each passing year since the FCC Staff Report in 2013¹⁵ and the following Order from the FCC in 2016, the number of telecommunications companies that can meet the three selection criteria falls. Several of those in the FCC Proxy Group have merged, and that group is smaller. At this point in, there are five companies that meet Staff's selection criteria.

¹⁵ Prescribing the Authorized Rate of Return; Analysis of Methods for Establishing Just and Reasonable Rates for Local Exchange Carriers; Wireline Competition Bureau, Staff Report; WC Docket No. 10-90; May 16, 2013.

KCC Staff Proxy Group

AT&T	T
Century Link	CTL
Shenandoah Telecommunications Co	SHEN
Telephone & Data Systems	TDS
Verizon	VZ

1

2 Each of the proxy companies provides local exchange services in addition to other services,
3 such as digital subscriber line, broadband internet access, cable television, and wireless. It
4 would be ideal to have a group of companies strictly in the business of providing local
5 exchange services in rural areas; that is not a realistic selection criteria as such companies
6 simply do not exist. It is necessary for the proxy companies to be publicly traded to provide
7 a market determined stock price, which is a required input for the DCF model, since prices
8 determined in an efficient market encase all of the information available to investors.

9 **Q Because of these other lines of business and services, do the cost of equity estimates for**
10 **the proxy companies include growth potential that do not apply to RLEC services?**

11 **A** Yes, each of the proxy companies is engaged in other segments of the telecommunications
12 industry and these services have higher growth rates than services that are under the KUSF
13 umbrella. In fact, just like most RLECs in Kansas, the members of the proxy group are
14 losing local service, wire-line customers to other forms of telephony service. The proxy
15 companies that are growing wire-line customers are doing so by mergers and acquisitions.

16 The other services are provided in a competitive environment. The local, wire-line services

1 that most RLECs in Kansas provide do compete against other services, but at the same time,
2 RLECs have access to state and federal subsidies to stabilize cash-flows, recover invested
3 capital, and earn their allowed return. Support from the KUSF and USF enable local wire-
4 line service providers to recoup costs of providing service and capital investments without
5 raising local rates, thus reducing the risk of recovering capital investments. In addition to
6 these subsidies, a local telephone company that has opted for traditional rate of return
7 regulation in Kansas can file for a revenue adjustment (either through the KUSF or local
8 rates) when it fails to earn its allowed return on capital. Rate of return established revenue
9 streams and regulation are not an option for the business units of the proxy companies
10 operating in a competitive environment, thus making those competitive services riskier than
11 the KUSF supported services.

12 **DCF ANALYSIS**

13 **Q. Please discuss the DCF analysis that you performed.**

14 A. The DCF model is one of the most important and frequently cited tools of regulatory
15 agencies for setting allowed returns because typically the publicly traded regulated utilities
16 exhibit stable forecasted growth rates. Unfortunately, that is not the case for the
17 telecommunications industry. Unlike the electric and natural gas distribution industries, the
18 telecommunications growth rates vary widely across companies, as well as time, from
19 quarter to quarter.

20 **Q. Does the DCF model meet the legal standards discussed earlier in your testimony?**

21 A. Yes, a cost of equity estimate derived from the DCF model meets the legal standards

1 discussed above if the model incorporates current information from the capital markets via
2 current stock prices and accurate data that investors use to establish their discount rate. This
3 market-based information ensures the cost of equity estimates evaluate investors' required
4 rate of return or discount rate that reflects the current economic environment.

5 The DCF model is a valuation model used by investors to value different types of
6 investments such as real estate, bonds, and equity securities. The DCF model is a useful
7 tool to value any investment that involves regular, periodic cash flows. The notion of
8 discounting a future receipt of cash back to the present so as to place a price or value on an
9 investment goes back centuries.¹⁶ The premise of the DCF model in the valuation of
10 common stock is that investors determine the value of a company's common stock by
11 discounting its future dividend payments back to the present. The foundation of the DCF
12 model is the process of discounting those future cash flows back to the present at the
13 investors' required return. An investor's required rate of return is risk-sensitive and
14 sensitive to the returns available on investments of comparable risk throughout the global
15 capital markets. In other words, as the risk of the investment increases, so will the investors'
16 required return. A higher required rate of return decreases the present value of the stream
17 of dividends that equates to the price of the stock. So, all other variables being equal,
18 investors price the riskier of two common stocks lower because the cash flows or dividends
19 are discounted back to the present at a higher rate.

¹⁶ The formal presentation of the DCF model as we use it today dates back to the 1930's in Irving Fisher's book: The Theory of Interest and John Burr Williams' 1938 text: The Theory of Investment Value. These two authors expressed the DCF model in modern economic terms.

1 The form of the DCF model that regulatory agencies are accustomed to seeing is often
2 referred to as the Gordon Growth Model, which is a model that values the security at the
3 present value of a stream of cash flows (dividends) growing at a constant rate into
4 perpetuity. The basic form of this DCF equation is:

$$5 \quad P_0 = \frac{D_0(1 + g)}{(Ke - g)}$$

6 where:

7 P_0 = the value of the common stock or asset

8 D_0 = the current dividend of the stock or annual cash flow from the asset

9 g = the annual growth rate of the dividend or cash flow forever

10 Ke = cost of equity or required rate of return for the stockholders

11 Or

12 Stock Price = Annual Dividend / (Req'd Rate of Return – Dividend Growth Rate)

13 This is the form of the equation commonly found in texts regarding finance, investments,
14 and asset valuation. Such texts are inclusive of both theory and practical application of the
15 DCF model in utility regulatory settings.

16 Regulatory agencies responsible for setting rates and revenue requirements want to know
17 the investors' required rate of return or Ke in the equation. So, we solve the equation for
18 that variable. The equation below shows the algebraic isolation of the investors' required
19 rate of return. By isolating investors' required rate of return in the equation, we can estimate
20 it by knowing the stock's dividend yield and the annual dividend growth rate expected by
21 investors. That form of the equation is:

$$22 \quad Ke = \frac{D_0(1 + g)}{P_0} + g$$

1 This equation is frequently written out as:

$$\begin{array}{l} 2 \text{ Req'd Rate of Return} = (\text{Dividend/Current Stock Price}) + \text{Dividend Growth Rate} \\ 3 \text{ or} \\ 4 \text{ Required Rate of Return} = \text{Dividend Yield} + \text{Dividend Growth Rate} \end{array}$$

5
6 Or as commonly abbreviated by regulatory agencies

$$7 \text{ } K_e = y + g$$

8 Where: y = Dividend Yield

9 g = Expected Dividend Growth

10 Through a handful of inputs, the DCF model distills down to an equation, a complex
11 cognitive process performed by investors to value a security. As with any equation that
12 attempts to model behavior, there are a host of assumptions that come along with it. Those
13 assumptions are:

- 14 • K_e corresponds only to the specific stream of future dividends, rather than earnings,
15 and that constitutes the source of value;
- 16 • the discount rate (K_e) must exceed the growth rate (g);
- 17 • the constant growth rate will continue for an indefinite future;
- 18 • investors require the same discount rate (K_e) each year; and
- 19 • there is no external financing.

20 **Q. Why is it reasonable to accept these assumptions?**

21 A. The DCF model is attempting to emulate investors' behavior; distilling human behavior
22 into a handful of inputs demands simplifying assumptions. The question becomes whether
23 the assumptions are so contrary to investors' behavior in the real-world that the model
24 output becomes meaningless or illogical. I do not believe the assumptions of the DCF
25 model are contrary to investor behavior and I do not know of any regulatory agency that
26 has dismissed the DCF as being contrary to human behavior. Moreover, there are methods
27 I use to evaluate whether an output falls outside of the realm of reality. For example, the
28 output can be compared with the returns available on other investments such as long-term

1 corporate bonds. There were no observations eliminated using this screen.¹⁷

2 **Q. How did you calculate the dividend yield (y) component of the DCF model?**

3 A. The dividend yield (y) is the easier of the two components to measure as it is easily
4 observable in daily stock price reports. It is calculated by dividing the stock's annual
5 dividend payment per share by its market price per share. The calculations of the DCF
6 model along with the proxy-company growth forecasts appear in the following tables. The
7 stock prices used in the calculation of the dividend yield appear in Schedule AHG-1. The
8 first table incorporates a growth forecast based on forecasted earnings per share growth
9 rates and forecasted long-run nominal GDP growth. As I discuss latter, the instability
10 exhibited in the earnings of these telecommunications companies makes it unwise to place
11 any weight on these DCF results.

¹⁷ Staff applies this screen using the interest rates of Baa Utility Bonds and the yields on utility-specific debt shown in the Risk Premium Table. Staff adds 100 basis points to these yields as a minimum risk premium test. Cost of equity observations below this level are eliminated from the average. FERC proceedings apply a similar test for outliers.

The six month average Baa Utility Bond Yield cited in Staff's Risk Premium study was 4.20% + 1.00% minimum risk premium = 5.20% threshold.

Discounted Cash Flow (DCF) Analysis 19-GNBT-505-KSF						
		Dividend Yields		Growth	DCF Estimated	
		Min	Max	Rate	Required Return	
AT&T	T	5.86%	7.01%	4.33%	11.34%	10.19%
Century Link	CTL	7.58%	10.37%	3.48%	13.86%	11.06%
Shenandoah Telecom Co	SHEN	0.68%	1.03%	10.98%	12.01%	11.66%
Telephone & Data Systems	TDS	1.99%	2.82%	18.43%	21.25%	20.43%
Verizon	VZ	3.95%	4.46%	3.89%	8.35%	7.85%
Average of each column		4.01%	5.14%	8.22%	13.36%	12.24%
1) Dividend divided by maximum price observed from February 25, 2019, through August 26, 2019						
2) Dividend divided by minimum price observed						
3) Forecasted long-run growth rate is the average of forecasted 3 to 5 year earnings per share growth and forecasted long-run GDP growth						
4) Low-end estimate = col 1 + col 3						
5) High-end estimate = col 2 + col 3						

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DCF calculations in this second table utilize forecasted nominal GDP growth as an estimate of long-run growth for the proxy group's dividends. As I discuss later, this view offers a more realistic expectation of potential growth in earnings and dividends. I place considerably more confidence in this view of potential growth and the corresponding results.

Discounted Cash Flow (DCF) Analysis 19-GNBT-505-KSF						
		Dividend Yields		Growth	DCF Estimated	
		Min	Max	Rate	Required Return	
AT&T	T	5.86%	7.01%	4.50%	11.51%	10.36%
Century Link	CTL	7.58%	10.37%	4.50%	14.87%	12.08%
Shenandoah Telecom Co	SHEN	0.68%	1.03%	4.50%	5.53%	5.18%
Telephone & Data Systems	TDS	1.99%	2.82%	4.50%	7.32%	6.49%
Verizon	VZ	3.95%	4.46%	4.50%	8.96%	8.45%
Average of each column		4.01%	5.14%	4.50%	9.64%	8.51%
1) Dividend divided by maximum price observed from February 25, 2019, through August 26, 2019						
2) Dividend divided by minimum price observed						
3) Forecasted long-run growth rate is forecasted long-run growth for U.S. nominal GDP						
4) Low-end estimate = col 1 + col 3						
5) High-end estimate = col 2 + col 3						

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8

Q. What is the source of the dividend information?

1 A. Historic and current dividend information is easily obtained from public subscription
2 services such as Value-Line and non-subscription services such as YahooFinance. The
3 DCF model requires a forward-looking dividend payment which is often the current year's
4 dividend payment increased by the forecasted growth rate for next year. I obtained the 2020
5 forecasted dividend per share information from Value-Line Investment Survey. The Value-
6 Line reports for each of the proxy companies are attached as Schedule AHG-2. I obtained
7 the stock prices for the dividend yields from YahooFinance.

Forecasted Growth Rates for the DCF Model

8 **Q. How did you estimate the growth rate in the DCF model?**

9 A. I relied on a combination of short-term and long-term growth forecasts, the same growth
10 forecasts that investors apply to value common stocks. The appropriate growth estimate to
11 use in the DCF model is that which is expected by the market and factored into investors'
12 analyses to estimate stock prices. The growth rate for the RLEC segment of the
13 telecommunications industry is difficult to determine because of the reasons I discussed
14 regarding declining subscribership. The difficulty stems from trying to ascertain what
15 growth estimate investors apply to the dividend stream over a very long time horizon and,
16 in this instance, we are dealing with growth estimates for a specific segment of the broader
17 telecommunications industry. At the broad level, the industry is growing; this segment of
18 basic telephony services is not growing, it is contracting. Thus, as best we can ascertain,
19 there is little to no positive growth for earnings and dividends from this narrow sector of
20 the industry.

1 **Q. Where did you obtain the short-term growth rate estimates?**

2 A. For my DCF analysis of the telecommunications service providers, I relied on two sources
3 for projected earnings growth rates: Value-Line Investment Survey and ThomsonFN
4 (formerly known as Institutional Brokers Estimation Service or I/B/E/S) reported at
5 YahooFinance.com. I averaged these earnings growth forecasts together to arrive at a short-
6 term growth estimate of the proxy companies.

7 Value-Line is a respected source for financial analyses, capital market commentary, and
8 financial forecasts of publicly traded stocks. Its forecasts and commentary are readily
9 available to institutional and individual investors. Value-Line's forecasts have been
10 scrutinized in numerous academic studies and demonstrated to be a good source for
11 financial forecasts used in the DCF and similar models. As a result, Value-Line is the most
12 frequently-quoted source for growth forecasts used in regulatory proceedings.

13 ThomsonFN is owned by Thomson-Reuters, and its five-year growth estimates are reported
14 through YahooFinance. The forecasted growth rates it reports provide a different
15 perspective from Value-Line. These are not growth estimates prepared by ThomsonFN;
16 they are the forecasts of analysts who actively follow the companies. I incorporated
17 ThomsonFN forecasts because these are the product of analysts working for institutional
18 money managers; their decisions and forecasts affect investors' expectations and valuations
19 of a stock's price.

Growth Rate Summary 19-GNBT-505-KSF												
		Value-Line Historic Data				Forecasted Growth Rates						
		Earnings Growth		Dividend Growth		Value Line		IBES	Zacks	Short-run	Long-term	Average
		10 Year	5 Year	10 Year	5 Year	EPS	DPS	EPS	EPS	Average	nGDP	Growth Rate
AT&T	T	2.50%	6.00%	3.00%	2.00%	5.50%	4.50%	2.20%	4.43%	4.16%	4.50%	4.33%
Century Link	CTL	-8.50% *		12.00%	-4.00%	1.00%	-12.50%	10.70%	10.67%	2.47%	4.50%	3.48%
Shenandoah Telecom Co	SHEN	5.00%	12.00%	8.00%	9.00%	20.50%	7.50%	24.40%		17.47%	4.50%	10.98%
Telephone & Data Systems	TDS	-4.50%	-4.50%	5.50%	5.50%	7.50%	3.00%	86.60%		32.37%	4.50%	18.43%
Verizon	VZ	5.00%	8.00%	3.00%	3.00%	4.00%	2.00%	2.86%	4.27%	3.28%	4.50%	3.89%
	Min	-8.50%	-4.50%	3.00%	-4.00%	1.00%	-12.50%	2.20%	4.27%	2.47%		3.48%
	Max	5.00%	12.00%	12.00%	9.00%	20.50%	7.50%	86.60%	10.67%	32.37%		18.43%
	Mean	-0.10%	5.38%	6.30%	3.10%	7.70%	0.90%	25.35%	6.46%	11.95%		8.22%
Columns: 1) - 6) Historic 5 & 10 Year & Forecasted growth rates as reported by Value-Line on June 14, 2019 7) 5-year forecasted annual earnings per share growth rate. Consensus forecasts gathered by Thomson-Reuters (aka I/B/E/S) and reported at YahooFinance on August 26, 2019 8) 5-year forecasted annual earnings per share growth rate. Consensus forecasts gathered by Zack's Investments gathered on August 26, 2019 9) Average of 3 to 5-year forecasted annual growth rates (columns 5 through 9) Long-term forecasted nominal GDP growth rate. Average of long-term forecasts by the U.S. Energy Information Agency and Social Security Administration Office of the Chief Actuary. SSA-OADSI 2019 Trustee Report 11) Average of short-term and long-term growth rates applied in DCF analysis												

Q. Please discuss the importance of the growth rate in the DCF equation.

A. The “g” represents the anticipated annual growth rate in cash-flows that investors expect to receive through dividends from the stock. This is a challenging and contentious issue in a DCF analysis for two reasons. First, it is a key element in the DCF model or any form of a discounted cash flow analysis because the growth rate has a one-for-one effect on the required return produced by the model. All other factors being equal, a higher growth rate results in an equally higher cost of equity for the utility. Second, it is highly subjective due to the uncertainty about future earnings and dividends, as well as the economy.

Q Do you believe these short-term, three-to-five year, earnings growth forecasts are useful for estimating the cost of equity for RLECs in Kansas in these KUSF audits?

A I believe these growth estimates are of a limited value in a DCF analysis of RLEC segment of the telecommunications industry. In the broad picture of the telecommunications

1 industry, earnings have been volatile. As you can see in the Value-Line reports in Schedule
2 AHG-2 and the previous/following table, the proxy group exhibits historic earnings that
3 have gone from strongly negative to forecasts of double-digit positive growth. This
4 volatility does not lend itself to estimating a long-run growth rate necessary for use in DCF
5 analysis. Some of these three-to-five year earnings growth forecasts are a sharp contrast to
6 the contraction in wire-line services. Granted, a reduction in lines does not necessarily
7 transfer to a comparable reduction in earnings; it is conceivable there can be some earnings
8 growth even with declines in access lines, although it is unlikely to continue in the long-
9 run.

10 **Q. How do investors estimate the dividend growth rate beyond the three to five-year**
11 **horizon of the short-term growth forecasts?**

12 A. For the long-term perspective of potential growth, investors rely on forecasts of the broad
13 economy as measured by annual changes forecasted for the nation's gross domestic product
14 (GDP). There are sources for long-term growth estimates of this country's GDP that extend
15 out more than 20 years. Academic texts and investment professionals use these forecasts
16 in DCF models as a forecast of potential long-term growth of corporate dividend payments.

17 GDP refers to the market value of all final goods and services produced within a country in
18 a given period. Nominal GDP (nGDP) is that measure of goods and services which *includes*
19 effects of price changes - better known as inflation. Inflation must be included for our
20 forecast because the DCF analysis is interested in the nominal required return. That is to
21 say, investors' expectations of inflation are contained in their required return. Keep in mind

1 that the “headline” GDP reported in the media is *real* GDP, which is GDP *less* the inflation
2 experienced over the measurement period.

3 **Q. Is there academic support for this issue?**

4 A. Yes, academic research has shown that nGDP growth forecasts are an important input to
5 valuation studies because the analyst has to consider whether a company’s annual earnings
6 can grow as fast as, or even faster than, the broad economy. In two of his books devoted to
7 the subject of asset valuation, Dr. Aswath Damodaran discusses the nature of a stable
8 growth rate for DCF models.¹⁸ He argues for viewing nominal economic growth as the
9 absolute maximum when using a stable-growth model, such as the DCF model we are using.

10 “The stable growth rate cannot exceed the growth rate of the
11 economy in which a firm operates, but it can be lower. There is
12 nothing that prevents us from assuming that mature firms will
13 become a smaller part of the economy and it may, in fact, be the more
14 reasonable assumption to make. Note that the growth rate of an
15 economy reflects the contributions of both young, higher growth
16 firms and mature, stable growth firms. If the former grow at a rate
17 much higher than the growth rate of the economy, the latter have to
18 grow at a rate that is lower.” (Damodaran on Valuation: Security
19 Analysis for Investment and Corporate Finance, 2nd edition, Aswath
20 Damodaran, p. 148)

21 “The growth rate of a company cannot be greater than that of the
22 economy but it can be less. Firms can become smaller over time
23 relative to the economy. Thus, even though the cap on the growth
24 rate may be the nominal growth rate of the economy, analysts may
25 use growth rates much lower than this value for individual
26 companies.” (Damodaran on Valuation: Security Analysis for
27 Investment and Corporate Finance, 2nd edition, Aswath Damodaran,
28 p.159)

¹⁸ Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 2nd Edition and Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd Edition.

1 It is worth noting that Professor Damodaran cites the nGDP growth projection as a *ceiling*
2 for long-term growth in most valuation studies. Certainly, there are industries that will
3 exceed the average for a period of time, but even for those industries, such growth cannot
4 continue forever.

5 **Q. Does the view that nGDP growth is a ceiling on long-term earnings growth exist**
6 **outside of academia?**

7 A. Yes, valuation analysts carefully consider the long-run growth rates used to value assets
8 very carefully because using an incorrect growth estimate will lead to incorrectly valuing
9 an asset. Institutions directly involved in asset valuation and asset management that apply
10 valuation models to analyze potential acquisition and merger transactions recognize that
11 estimates of firm-specific growth are a driver to the value of an asset; overstating growth
12 would cause a model to overestimate the value of the asset, which would result in an
13 economic loss to the investor. These experts also warn of a ceiling to earnings growth rates
14 as being no more than that of broad economic growth.

15 “Growth rate: Few companies can be expected to grow faster than the
16 economy for long periods. The best estimate is probably the expected long-
17 term rate of consumption growth for the industry’s products, plus inflation.”
18 (Valuation: Measuring and Managing the Value of Companies, Tim Koller,
19 Mark Goedhart, and David Wessels, McKinsey & Co; 4th ed, p. 275.)

20 The following quote from J.P. Morgan Asset Management (JPMAM) addresses the macro
21 or economy-wide measures of profits, and it is consistent with the firm-specific view
22 expressed by asset valuation experts in that analysts must be aware of the forecasted growth

1 rates applied in valuation models and how those growth forecasts comport with broad
2 measures of forecasted economic growth.

3 “One common mistake is to assume that earnings and dividends received by
4 investors can grow in line with—or even in excess of—overall economic
5 growth (GDP) in perpetuity. Granted, it is almost a truism that aggregate
6 earnings must grow at the same pace as the overall economy in the very long
7 run; otherwise, profits would eventually outstrip the size of the entire
8 economy or dwindle to an insignificant share of it. But not all of this
9 earnings growth accrues to existing shareholders. On the contrary, a large
10 portion of economic growth comes from the birth of new enterprises. Some
11 commentators suggest (for example, Bernstein and Arnott, 2003; Cornell,
12 2010) that new enterprises account for more than half of GDP growth in the
13 U.S., while in some rapidly developing economies new enterprises may
14 account for the lion’s share of overall economic growth.”¹⁹

15 Peter L. Bernstein and Robert D. Arnott, referenced in the quote, have both published in
16 peer-reviewed academic journals and books on investment strategy, as well as building
17 careers in the field of asset management and investment strategy. Their research suggests
18 that relying on GDP as the long-run growth estimate could actually be overly optimistic.
19 Research by Bernstein and Arnott warns practitioners that a portion of nGDP growth is
20 created by new enterprises and that portion of nGDP growth does not contribute to the
21 earnings growth of existing enterprises.²⁰

22 Professional investment managers apply these principles. J.P. Morgan Asset Management
23 describes how they arrive at their equity market assumptions.²¹

¹⁹ Long-term Capital Market Return Assumptions: 2015 Estimates and Thinking Behind the Numbers, J.P. Morgan Asset Management, p. 25, <https://am.jpmorgan.com/us/institutional/lcmra>

²⁰ Earnings Growth: The Two Percent Dilution, William J. Bernstein and Robert D. Arnot, Financial Analysts Journal, September/October 2003, pp 47-55.

²¹ “Long-Term Capital Market Assumptions: 2014 Assumptions and the Thinking Behind the Numbers”; J.P. Morgan Asset Management, p50;

1 *“Our framework begins with underlying economic activity—real GDP growth*
2 *plus inflation—which we believe ultimately drives earnings growth in the long*
3 *run.”*

4 Thus, it becomes clear that the linkage between expected economic growth and the growth
5 potential of corporate earnings and dividends is more than just an academic principle in
6 finance; professional money managers accept the relationship between GDP growth and
7 corporate earnings growth when forming their long-run forecasts.

8 **Q Is there a definitive growth trend for the RLEC industry?**

9 A For the past 20 years, there is a definitive trend in the growth of land-line subscription; that
10 trend is negative. Based on reports and industry research, that trend is likely to continue.
11 I have not found any research material to suggest that land-line growth will be positive or
12 even flat. For example, Standard & Poors had this to say regarding growth expectations in
13 the telecommunications industry and its sub-categories.

14 Under our baseline economic assumptions, while we expect revenues
15 across the telecommunications and cable-TV sectors to be fairly flat
16 on an aggregate basis, there are varying prospects for different
17 segments. For the wireline sub-segment, we anticipate generally flat
18 to negative revenue trends as residential voice customers are lost to
19 wireless and to cable competition, and as the pace of new digital
20 subscriber-line (DSL) customer additions wanes. In contrast,
21 prospects for the wireless industry are considerably better and we
22 anticipate that increasing data usage, spurred by the growing
23 proportion of smartphones, should somewhat offset lower voice
24 yields, which, combined with some increase in subscribers, should
25 enable the largest wireless operators to post modest revenue increases
26 in 2012. (p4)
27

http://www.jpmorganinstitutional.com/pages/jpmorgan/am/ia/research_and_publications/long-term_capital_market

1 In marked contrast to a still-growing wireless industry, landline
2 telephone companies continue to see mid-single- to low-double-digit
3 erosion of their residential voice customer base. While some of those
4 losses are to cable telephony, the more important longer term issue for
5 the wireline industry is the continuing, significant loss of voice access
6 lines to wireless substitution, as more customers--especially younger
7 ones--increasingly choose to have only a wireless device. (p6)²²
8

9 Standard & Poor's reiterated this sentiment in a recent update on the industry, "In wireline,
10 we expect revenues to decline in the mid-single-digit percent area in the U.S. due to the loss
11 of voice access lines to wireless substitution, and broadband customers to cable."²³ Thus,
12 the sentiment underlying the substitution of other services for traditional land-line telephony
13 service has been in place and recognized by analysts for at least six years.

14 The capital markets recognize that the traditional wire-line services and the basic telephony
15 services that fall under the KUSF umbrella are not driving the telecommunications
16 industry's growth; they are likely a drag on future growth. This point is important when it
17 comes to applying the DCF models to estimate the required return on equity in KUSF audits,
18 such as we are doing here. In applying the DCF model, it is vital to review the growth
19 forecasts to make certain that they represent a realistic expectation for the future. Based on
20 the research cited above, we cannot simply apply a forecasted growth rate of the
21 telecommunications industry or telecommunications company because that would include
22 the potential of wireless, broadband, and cable television services. Those are not KUSF
23 covered services. And because of these growth expectations, I believe the best information

²² Industry Report Card: U.S. Telecommunications And Cable: Some Islands Of Weakness In A Relatively Stable Sea, Standard & Poors' Ratings Direct on the Global Credit Portal, April 25, 2012;
www.standardandpoors.com/ratingsdirect

²³ Industry Top Trends 2019: Telecommunications, Standard & Poors' Ratings, November 15, 2018, p. 6.

1 available for a DCF analysis of land-line segment of this industry is a forecast of the broad
2 U.S. economy such as nGDP.²⁴ The rationale for using this estimate in a DCF analysis is
3 that, despite volatility of short-term corporate earnings or dividend forecasts, a mature
4 industry, such as provision of basic telecommunications services, is likely to experience
5 long-term growth no greater than that of the general economy. The Commission has found
6 that Staff's use of nGDP growth forecasts in the DCF model is reasonable and appropriate.²⁵

7 **Q. How did you estimate long-run nominal GDP growth?**

8 A. I averaged the long-run nGDP forecasts of the Energy Information Agency (EIA) and the
9 Social Security Administration (SSA). The average of these two forecasts composes the
10 long-run growth estimate in the DCF analysis. The nGDP growth forecasts published by
11 EIA and SSA are the same sources that I have relied on over the past decade. FERC also
12 uses these two sources for nGDP estimates.

²⁴ nGDP is a measure of the United States' economic output -- the market value of all final goods and services made within the borders of the country in a year and includes the year-to-year effects of general price increases or inflation.

²⁵ Order Setting Annual Cost-Based Kansas Universal Fund Support For LaHarpe Telephone Company, Inc.; June, 26, 2013; Docket No. 12-LHPT-875-AUD; para 20.

<u>Nominal GDP Estimates</u>	
Energy Information Agency (EIA) 2017 - 2050	4.67%
Social Security Administration (SSA)	
OASDI Trustees Report 2018 - 2095	4.36%
Average	4.51%
Sources:	
EIA Annual Energy Outlook 2019, Table B4	
Forecasted Nominal GDP, 2019, OASDI Trustees Report Office of the Chief Actuary, Table V.B1.—Principal Economic Assumptions Table V.B2.—Additional Economic Factors	

1

2 **Q. Are these two the only two sources for long-run GDP forecasts?**

3 A. There are other source shown in the table and they are wholly consistent with the EIA and
4 SSA forecasts.

<u>Additional GDP Estimates</u>	
Exxon-Mobile 2018 Outlook for Energy 2018 - 2040	
2.2% Real GDP + 2.2 GDP Deflator from SSA	4.40%
Congressional Budget Office Nominal GDP Forecast	4.28%
Federal Reserve Open Market Committee Long-run Forecast	
2.0% Real GDP + 1.9% PCE Inflation	3.90%
Sources:	
ExxonMobile 2018 Outlook for Energy: A View to 2040, p. 60	
An Update to the Economic Outlook: 2019-2029, Congressional Budget Office, August 2019	
Economic Projections of Federal Reserve Board Members & Bank Presidents Under Their Individual Assessment of Projected Appropriate Monetary Policy, June 2019	

5

6 **Q What do you believe to be an appropriate estimate of growth for this segment of the**
7 **telecommunications industry?**

8 A For the services covered by the KUSF and the limited growth expected of those services
9 provided by the RLEC, I believe the best alternative available for a DCF analysis is using a

1 forecast of the broad U.S. economy such as nGDP. The rationale for using this estimate in
 2 a DCF analysis is that a mature industry that is in decline, such as provision of basic land-
 3 line telecommunications services, is likely to experience long-term growth no greater than
 4 that of the general economy. Below are two tables of DCF inputs and results. The first
 5 table utilizes forecasted earnings and dividend growth rates for the short-term and
 6 forecasted nGDP growth as a long-run growth estimate. The second table relies only on the
 7 nGDP forecasted growth rate, leaving out the volatile short-term growth forecasts.

Discounted Cash Flow (DCF) Analysis						
19-GNBT-505-KSF						
		1	2	3	4	5
		Dividend Yields		Growth	DCF Estimated	
		Min	Max	Rate	Required	Return
AT&T	T	5.86%	7.01%	4.33%	11.34%	10.19%
Century Link	CTL	7.58%	10.37%	3.48%	13.86%	11.06%
Shenandoah Telecom Co	SHEN	0.68%	1.03%	10.98%	12.01%	11.66%
Telephone & Data Systems	TDS	1.99%	2.82%	18.43%	21.25%	20.43%
Verizon	VZ	3.95%	4.46%	3.89%	8.35%	7.85%
Average of each column		4.01%	5.14%	8.22%	13.36%	12.24%
1) Dividend divided by maximum price observed from February 25, 2019, through August 26, 2019						
2) Dividend divided by minimum price observed						
3) Forecasted long-run growth rate						
4) Low-end estimate = col 1 + col 3						
5) High-end estimate = col 2 + col 3						

8

Discounted Cash Flow (DCF) Analysis 19-GNBT-505-KSF						
		1	2	3	4	5
		Dividend Yields		Growth	DCF Estimated	
		Min	Max	Rate	Required Return	
AT&T	T	5.86%	7.01%	4.50%	11.51%	10.36%
Century Link	CTL	7.58%	10.37%	4.50%	14.87%	12.08%
Shenandoah Telecom Co	SHEN	0.68%	1.03%	4.50%	5.53%	5.18%
Telephone & Data Systems	TDS	1.99%	2.82%	4.50%	7.32%	6.49%
Verizon	VZ	3.95%	4.46%	4.50%	8.96%	8.45%
Average of each column		4.01%	5.14%	4.50%	9.64%	8.51%
1) Dividend divided by maximum price observed from February 25, 2019, through August 26, 2019						
2) Dividend divided by minimum price observed						
3) Forecasted long-run growth rate						
4) Low-end estimate = col 1 + col 3						
5) High-end estimate = col 2 + col 3						

1

2 **Q What is your conclusion from the DCF analyses?**

3 A. As I discussed in the Executive Summary, I am placing minimal weight on the DCF
 4 analyses that contain forecasted earnings and dividend growth rates because those growth
 5 rates are volatile and do not reflect growth associated with land-line telephony services.
 6 The DCF analyses that relies on long-term growth of the broad economy is somewhat
 7 informative as its indicative of the expected returns on equity securities generally even
 8 though it is not directly tied to RLEC telephony services.

9 **CAPM ANALYSIS**

10 **Q. Why do you incorporate a capital asset pricing model (CAPM) analysis in your**
 11 **evaluation of Golden Belt's cost of equity?**

12 A. The CAPM is one of the cornerstone financial models. For example, every merger and
 13 acquisition analysis performed by an investment banker involving a Kansas utility has

1 incorporated a CAPM analysis as a critical component of the valuation process.

2 **Q. Would you please describe the CAPM?**

3 A. The CAPM is an important tool of finance because it offers an explanation of the positive
4 relationship between risk and ROR required by investors.²⁶ It is appealing to regulators
5 because it meets the legal standards I discussed above, as it can be structured to incorporate
6 current data from the financial markets and the unique risks of the utility in question.

7
$$K_e = R_f + \text{Beta} (R_m - R_f) \text{ or}$$

8
$$K_e = R_f + \text{Beta} (R_p)$$

9 Where:

10 K_e = required return on equity

11 R_f = return on a risk-free security

12 R_m = an expected return from the market as a whole

13 R_p = risk premium available to investors through purchasing common stocks instead of risk-free
14 securities often calculated as $R_m - R_f$

15 Beta = volatility of the security's or portfolio's return relative to the volatility of the market's return
16 with the market beta equal to 1.0

17 **Rf**

18 The R_f estimate is the interest rate investors believe represents a riskless return. Although
19 it is a simple concept, the answer is not universally agreed upon. It is widely accepted that
20 a debt instrument issued by the U.S. Government is a risk-free instrument. An investment
21 in U.S. Treasury Bonds is a risk-free investment, if the investor plans to hold it until
22 maturity. The risk-free instrument chosen will have an effect on the results of the CAPM
23 analysis. Whichever instrument is selected, it should be used consistently in the equation.

²⁶ The theoretical support for the CAPM is the work done by Harry Markowitz ("Portfolio Selection," Journal of Finance, March, 1952). W.F. Sharpe added the concept of a risk-free rate of return to the Markowitz model ("A Simplified Model of Portfolio Analysis," Management Science, January, 1963).

1 **Beta**

2 The beta coefficient measures the volatility of the return earned by the utility's stock relative
3 to the volatility of the returns earned by the broader equity market. The broad equity market
4 is frequently measured using the S&P 500 Index. This measure provides a look at the risk
5 and volatility of a stock relative to other investments. A stock with a beta of 1 is equally as
6 volatile as the market as a whole. A stock with a beta of 0.5 is half as volatile as the market.
7 Value-Line reports that the proxy group has a beta coefficient of 0.94 with a range of 0.75
8 to 1.15.

9 **Rm**

10 Rm is the expected return on the stock market as measured by a broad market index such
11 as the S&P 500. This represents the total return consisting of the price change of the index
12 plus dividends earned for the year.

13 **Rp**

14 The risk premium is the difference between investors' expected return from the stock
15 market and their expected return from the risk-free investment over the same time period.
16 The risk premium is written as $R_m - R_f$. The market return and the risk-free return should
17 be taken from the same time period so as to accurately measure the additional return
18 required by investors to take on the risk of common stocks over the risk-free investment
19 over that forecasted or historic time period.

1 **Q. Does the CAPM meet the Hope-Bluefield legal standards discussed earlier in your**
2 **testimony?**

3 A. Yes, a cost of equity estimate derived from the CAPM meets those legal standards if the
4 model incorporates current information from the capital markets that investors rely on to
5 evaluate investment options. This market-based information ensures the cost of equity
6 estimates evaluate investors' required rate of return or discount rate that reflects the current
7 economic environment. In the CAPM analysis, such information is the expected returns in
8 the broad equity market and the return available on risk free investment vehicles.

9 **Q. Please discuss your CAPM analysis.**

10 A. I took two distinct approaches to the CAPM analysis that are commonly found in both cost
11 of capital studies in regulatory and asset-valuation arenas. I performed one analysis using
12 purely historic measures of returns from the stock and bond markets. The second analysis
13 incorporates forecasted returns on debt and equity capital from three different sources. The
14 results are very different with the two approaches because historic returns on equity capital
15 are drastically higher, 11.36%, compared to forecasted returns of 6.76% to 9.00%; reflecting
16 the overwhelming evidence that expectations for future returns on debt and equity
17 investments are much lower than those experienced by investors over the past century.
18 Keep in mind that there are several unique and distinct sources for the forecasted returns
19 and none of them are anywhere near the level of historic returns.

20 Both forms of my CAPM analysis incorporate the high and low beta coefficients observed
21 in the proxy group. The average beta of the proxy group is about 94% of that exhibited by

1 the broad equity market, clearly indicating that telecommunications companies are viewed
2 as slightly less volatile (and less risky) than the broad stock market.

Beta Coefficients		
AT&T	T	0.750
Century Link	CTL	1.050
Shenandoah Telecommunications Co	SHEN	1.000
Telephone & Data Systems	TDS	1.150
Verizon	VZ	0.750
		0.940
Source: Value-Line Investment Survey, June 14, 2019		

3
4 **Q. Please describe your forecasted CAPM analyses.**

5 A. For the forecasted CAPM analyses, I obtained forecasts of long-run returns for common
6 equity and U.S. Treasury Bonds from three distinct sources: J.P. Morgan Asset
7 Management (JPMAM); BlackRock Investments (BlackRock); and Duff & Phelps.
8 Combined, JPMAM and BlackRock oversee more than \$8.5 trillion dollars with individual
9 and institutional clients worldwide. Thus, it is reasonable to assume their published
10 forecasts influence the expectations of investors beyond just their own client base. JPMAM
11 and BlackRock each publish annually their views of long-run (more than 15 years) returns
12 available of numerous asset classes. Their respective forecasts are not identical, and taken
13 together they provide a range for long-run returns on asset classes by the largest asset
14 management companies. Duff & Phelps is a global provider of advisory services to the
15 financial industry and corporations.

**Summary of Market Returns
Used in CAPM Studies**

Forecasted Market Return	
J.P. Morgan	6.76%
Black Rock	7.00%
Duff & Phelps	9.00%
Historic Market Returns	
Damodam - Arithmetic Returns	11.36%
Damodam - Geometric Returns	9.49%

1

Summary of CAPM Findings

	Low Beta	High Beta
Forecasted Data:		
J.P. Morgan	5.84%	7.22%
Black Rock	6.79%	8.91%
Duff & Phelps	7.63%	9.83%
Historic Data:		
Arithmetic Returns	9.58%	12.08%

2

3 **Q. How is JPMAM data applied to the CAPM analysis?**

4 A. For this CAPM analysis, we are interested in their forecasted returns on common stock in
 5 the U.S. and U.S. Treasury Bonds published by JPMAM to establish the expected return for
 6 the market. JPMAM publishes 10 to 15-year forecasts of expected returns on dozens of
 7 investment asset classes in its annual publication, the Long Term Capital Market Return
 8 Assumptions (LTCMRA).²⁷ JPMAM forecasts an annual return on common stocks of

²⁷ J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions, 2019 Edition, J.P. Morgan Asset Management (published October of 2018).

1 6.76%. The JPMAM's forecasted returns on common stocks has declined over the past four
2 years; generally a product of the increase in stock prices. Following the calculations and
3 inputs through the CAPM equation in line 2 of the following table, the forecasted return on
4 a risk-free investment, 10-Year U.S. Treasury Bonds, is subtracted from the expected return
5 on common stocks, resulting in a risk premium of 3.45%. This risk premium is the
6 additional return necessary to induce investors to take on the added risk associated with
7 common stocks over the risk-free investment in a U.S. Treasury Bond. The beta coefficient
8 is applied to the risk premium to ascertain how much of a risk premium is necessary for
9 investors to take on risks of investing in utility stocks as opposed to the risk free U.S.
10 Treasury Bond.

**Capital Asset Pricing Model -- Forecasted Risk Premium
Using Forecasted Market Returns & Treasury Bond Yields
by J.P. Morgan Asset Management
19-GNBT-505-KSF**

		Low Beta	High Beta
1) Forecasted Returns on Common Stocks		6.76%	6.76%
2) Forecasted Total Return on 10-Year T-Bonds	-	3.31%	3.31%
3) Equity Risk Premium		3.45%	3.45%
4) Beta Coefficient	x	0.75	1.15
5) Beta Adjusted Risk Premium		2.59%	3.97%
6) Forecasted Yield on 10-Year T-Bonds	+	3.25%	3.25%
7) For Cost of Equity		5.84%	7.22%

- 1) Forecasted 10 to 15-year annual arithmetic return on stocks
J.P. Morgan Asset Management, 2019 Edition
- 2) Forecasted 10 to 15-year annual arithmetic return on intermediate term
U.S. Government bonds by J.P. Morgan Asset Management, 2019 Edition
- 3) Resulting risk premium (1-2)
- 4) Beta coefficient range of proxy group reported by Value-Line
- 5) Row 3 x Row 4 = asset specific risk premium
- 6) Forecasted yield on 10-Year U.S. Treasury bonds forecasted by
J.P. Morgan Asset Management, 2019 Edition (page 57)
- 7) Forecasted cost of equity capital row 5 + row 6

Sources:

J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions,
2019 Edition, J.P. Morgan Asset Management (published October of 2018)

1

2 The expected risk-free yield of 3.25% forecasted by JPMAM is added to the beta specific
3 risk premium to arrive at the cost of equity for the given beta coefficients of 0.75 to 1.15.

4 As you can see in the next table, a CAPM analysis that incorporates BlackRock's long-term
5 return projections are modestly higher than those published by JPMAM.

**Capital Asset Pricing Model -- Forecasted Risk Premium
Forecasted Market Returns & Treasury Bond Yields
by BlackRock Investments
19-GNBT-505-KSF**

	Low Beta	High Beta
1) Forecasted Returns on Common Stocks	7.00%	7.00%
2) Forecasted Total Return on 10+ Year U.S. T-Bonds	- 1.70%	1.70%
3) Equity Risk Premium	5.30%	5.30%
4) Beta Coefficients of Proxy Group	x 0.75	1.15
5) Beta Adjusted Risk Premium	3.98%	6.10%
6) Forecasted Yield on 10-Year T-Bonds	+ 2.81%	2.81%
7) Cost of Equity	6.79%	8.91%

- 1) Forecasted 25-year annual geometric returns on U.S. common stocks
- 2) Forecasted 25-year annual geometric return on intermediate term Treasury bonds
- 3) Resulting risk premium (1-2)
- 4) Beta coefficient range of proxy group reported by Value-Line
- 5) Proxy Group risks premium
- 6) Forecasted yield on 10-Year U.S. Treasury bonds published in Survey of Professional Forecasters (Federal Reserve Bank of Philadelphia)
- 7) Forecasted cost of equity capital row 5 + row 6

Sources:

<https://www.blackrockblog.com/blackrock-capital-markets-assumptions/>
<https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/2018/survq118>

1

2 **Q. What is the third source of data used in the forward looking CAPM analyses?**

3 A. I relied on data published by Duff & Phelps, a global financial services company. Specific
 4 to cost of capital estimation, Duff & Phelps provides forward looking estimates of an equity
 5 risk premium (ERP) and a risk-free return. Just as in the previous CAPM equations, the
 6 ERP is multiplied by the beta coefficient of the proxy group and that product is added to the
 7 risk-free rate of return to arrive at the cost of capital for those specific assets. As capital
 8 markets change, Duff & Phelps changes its ERP and risk-free return estimates.

**Capital Asset Pricing Model -- Duff & Phelps' Forecasted Risk Premium
Using Forecasted Market Returns & Treasury Bond Yields**

19-GNBT-505-KSF

	Low Beta	High Beta
1) Duff & Phelps U.S. ERP	5.50%	5.50%
2) Beta Coefficient	x 0.75	1.15
3) Proxy Group Risk Premium	4.13%	6.33%
4) Duff & Phelps U.S. Risk-Free Rate of Return	+ 3.50%	3.50%
5) Proxy Group Cost of Equity	7.63%	9.83%

- 1) Duff & Phelps U.S. Equity Risk Premium (effective December 31, 2018)
- 2) Beta coefficient range of proxy group reported by Value-Line & Zack' Investment Research
- 3) Resulting risk premium for proxy group (1-2)
- 4) Duff & Phelps U.S. Risk-Free Rate of Return (affirmed December 31, 2018)
- 5) Forecasted Cost of Equity Range for Proxy Group

Sources:

Valuation Insights, First Quarter 2019, U.S. Equity Premium Recommendation;
February 19, 2019; Duff & Phelps
<https://www.duffandphelps.com>

1

2 These three capital asset pricing models vary with respect to the precise return each projects
3 that is demanded by investors going forward. What is very apparent is that the models from
4 all three of these sources project that returns on equity capital in the future will be lower
5 than the historic returns. Their view of lower returns is virtually universally accepted across
6 the investment banking and asset management industry.

7 **Q. Does the historic CAPM corroborate the findings of your forecasted CAPM analyses?**

8 A. No, the cost of equity or expected returns calculated using purely historical data are
9 significantly greater than found with the three scenarios using forecasted return. For the
10 historical CAPM, I relied on data of returns earned from 1928 through 2018.

Capital Asset Pricing Model -- Historic Risk Premium Based on Historic Arithmetic Risk Premiums from 1928 to 2018 19-GNBT-505-KSF		
	High Beta	Low Beta
1) Total Return on Common Stocks	11.36%	11.36%
2) Total Return on Government Bonds	- 5.10%	5.10%
3) Resulting Risk Premium	6.26%	6.26%
4) Beta Coefficient	x 0.75	1.15
5) Risk Premium	4.70%	7.20%
6) Historic Yield on Government Bonds	+ 4.88%	4.88%
7) Forecasted Cost of Equity Based on Historic Returns	9.58%	12.08%
1) Historic returns on common stocks 1928-2017 2) Historic returns on intermediate-term government bonds 1928-2017 3) Resulting risk premium (1-2) 4) Beta coefficient of the proxy group (Reported by Value-Line) 5) Row 3 x Row 4 = Asset Specific Risk Premium 6) Historic year-end yield on intermediate-term government bonds 1928-2017 7) Forecasted cost of equity capital, row 5 + row 6		
Sources: Damodaran Online http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html & Value-Line Investment Survey		

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If we rely on purely historic data, we have to assume that certain trends, particularly economic growth, observed in the past 80 years will continue in the future. It is well established that the U.S. economy is projected to grow at a slower rate than that experienced in the past. The projected growth rate is 4.50% compared to the historic growth rate of 6.11%.²⁸ Additionally, it would assume that this historical stock market data accurately measures the past returns. There is evidence that these frequently-quoted historic returns

Nominal GDP	
2018 \$	20,580.20
1929 \$	104.60
Growth Rate	6.11%
Source: www.bea.gov Bureau of Economic Analysis	

28

do not present a complete picture in part due to the beginning period that is often used in the calculation.²⁹ The simple step of beginning the measurement period in 1920's brings questions as to whether the time period represents all of the modern-era securities trading. Whether or not 1920's is the best point in time to begin measuring historic returns, these historic returns are widely reported and frequently referred to in discussions of the capital markets and potential returns. There are well regarded financial publications that focus solely on this type of historic data and how to apply it in cost of capital studies. Thus, measurements from this time period likely influence expectations despite warnings that surround historic economic growth rates and market returns. I have to agree that the historic data is often cited and is part of the cost of capital universe, but I believe it has significant limitations and policy makers should give it only light consideration in their final decision.

Risk Premium Analysis

Q. Did you determine whether a 9.60% ROE is adequate in the current capital markets?

A. Yes, the following table calculates the difference between the 9.60% allowed return and the return available on less risky fixed income investments. The basics of capital markets theory is that riskier investments, such as equity, demand a higher return than less risky fixed income investments, such as bonds. This is known as a risk-premium. A positive risk premium is necessary to induce investors to take the additional risk of an equity investment over the safety of a bond that offers a regular interest payment. The following table shows the risk premium of a 9.60% ROE over the current market yield on various fixed income

²⁹ McQuarrie, Edward F, "The Myth of 1926: How Much Do We Know Long-Term Returns on U.S. Stocks?" The Journal of Investing; Winter 2009, p. 96.

1 securities. As a historic comparison, over the past 80 years, common stocks have provided
 2 a 6.26% risk premium over the returns on U.S. Treasury Bonds. Thus, I conclude that using
 3 a 9.60% ROE provides a reasonable level of compensation over less risky investments.

**KCC Staff's Risk Premium Over Fixed Income Yields
Based on a 9.60% Return on Equity**

Monthly Averages	10-Year T-Bond Yield¹	30-Year T-Bond Yield²	Baa Corporate Bond Yield³	BBB/Baa Utility Bond Yield⁴
March, 2019	2.60%	3.00%	4.86%	4.57%
April, 2019	2.54%	2.94%	4.70%	4.43%
May, 2019	2.31%	2.75%	4.60%	4.31%
June, 2019	2.05%	2.56%	4.40%	4.12%
July, 2019	2.08%	2.59%	4.30%	4.02%
August, 2019	1.72%	2.22%	3.95%	3.74%
Six Month Average	2.22%	2.68%	4.47%	4.20%

Staff's Risk Premium Over the Six-Month Average 10-Year Treasury Bond Yield

Staff Recommended Allowed ROE	9.60%
Six Month Average 10-Year Treasury Bond Yield	2.22%
Premium Over Six-Month Average 10-Year Treasury Bond Yield	7.38%

Staff's Risk Premium Over the Six-Month Average 30-Year Treasury Bond Yield

Staff Recommended Allowed ROE	9.60%
Six Month Average 30-Year Treasury Bond Yield	2.68%
Premium Over Six-Month Average 30-Year Treasury Bond Yield	6.92%

Staff's Risk Premium Over the Six-Month Average BBB/Baa Utility Bond Yield

Staff Recommended Allowed ROE	9.60%
Six-Month Average BBB/Baa Utility Bond Yield	4.47%
Premium Over Six-Month Average BBB/Baa Utility Bond Yield	5.13%

Staff's Risk Premium Over the Six-Month Average BBB/Baa Utility Bond Yield

Staff Recommended Allowed ROE	9.60%
Six-Month Average BBB/Baa Utility Bond Yield	4.20%
Premium Over Six-Month Average BBB/Baa Utility Bond Yield	5.40%

Sources:

- 1) Yield on U.S. 10-Year Treasury Bond reported at <https://fred.stlouisfed.org/>
- 2) Yield on U.S. 30-Year Treasury Bond reported at <https://fred.stlouisfed.org/>
- 2) Yield on Baa Corporate Bonds reported at <https://fred.stlouisfed.org/>
- 4) Yield on BBB/Baa Publicly Utility Bonds reported in Value-Line Investment Survey, Selections and Opinions

Q. How does the risk-premium shown above, calculated at this time, compare to those of past KUSF dockets?

A. The risk-premium resulting from a 9.60% allowed ROE and the interest rates in the current fixed income market compares favorably to the risk-premiums of past KUSF dockets. In the following table, I compare Staff's recommendations in recent KUSF dockets to the interest rates on BBB/Baa public utility bonds. As an additional point of comparison, the risk-premium from recent electric and natural gas dockets is 4.79%. On average, the risk-premium in KUSF dockets has averaged 5.41%, with a range of 4.56% to 6.23%. In this Docket, the comparable risk-premium 5.40%.

Staff Positions in Recent KUSF Dockets						
Docket	Testimony Date	Company	Equity Ratio	Staff ROE	Baa/BBB Yields*	Resulting Rp**
12-GRHT-633-KSF	10/18/2012	Gorham Telephone Company	29.69%	10.50%	4.27%	6.23%
12-LHPT-875-AUD	12/19/2012	LaHarpe Telephone Company	90.00%	10.00%	4.33%	5.67%
13-CRKT-268-KSF	3/13/2013	Craw-Kan Telephone Cooperative, Inc.	60.00%	10.00%	4.48%	5.52%
13-ZENT-065-AUD	5/17/2013	Zenda Telephone Company, Inc.	Confidential	10.00%	4.42%	5.58%
13-JBNT-437-KSF	5/23/2013	J.B.N. Telephone Company, Inc.	46.50%	9.75%	4.52%	5.23%
13-PLTT-678-KSF	9/24/2013	Peoples Telecommunications, LLC	55.83%	9.75%	5.19%	4.56%
14-WTCT-142-KSF	2/5/2014	Wamego Telecommunications Co.	61.43%	9.60%	4.78%	4.82%
14-S&TT-525-KSF	9/25/2014	S&T Telephone Cooperative, Inc.	54.86%	9.75%	4.45%	5.30%
15-MRGT-097-KSF	1/20/2015	Moundridge Telephone Co.	Confidential	9.75%	3.91%	5.84%
15-TWVT-213-AUD	9/4/2015	Twin Valley Telephone Co.	47.81%	9.75%	4.56%	5.19%
17-RNBT-555-KSF	10/26/2017	Rainbow Telecomm Assoc. Coop	60.00%	9.75%	4.21%	5.54%
Average Risk Premium of Recent KUSF Dockets						5.41%
* Yield on Baa/BBB Utility Bonds reported by Value-Line Investment Survey at date of Staff's testimony						
**Risk premium of Staff's ROE Recommendation over the Baa/BBB Utility Bond Yield						

There is no definitive risk-premium to apply to assess whether an allowed return for a utility is reasonable. The tenets of the Hope and Bluefield Decisions demand that an allowed return on equity be set at a rate that reflects the risks of the investment. The risk-premium is a useful tool to measure the difference between market determined capital costs of a less

1 risky investment in public utility debt (in this instance a BBB/Baa public utility bond) and
 2 the allowed return set for stockholders. The risk-premium of 5.40% from an allowed return
 3 on equity of 9.60% meets this threshold test of the Hope and Bluefield Decisions in that it
 4 offers a premium above lower risk investments and it is comparable to risk-premiums
 5 offered in similar capital market conditions.

6 **Q. Please discuss your observations of interest rates on public utility debt over the past**
 7 **four years?**

8 **A.** The average yield on public utility bonds has declined to the mid-4.00% range since 2013.

**Average Utility Debt Yields
 Reported By Value-Line Investment Survey
 Annual Averages**

	A/A	Baa/BBB
2006	6.00%	6.34%
2007	6.07%	6.24%
2008	6.32%	6.65%
2009	5.87%	6.90%
2010	5.50%	5.97%
2011	5.03%	5.55%
2012	3.98%	4.42%
2013	4.35%	4.79%
2014	4.29%	4.60%
2015	4.15%	4.54%
2016	3.95%	4.45%
2017	4.01%	4.35%
2018	4.26%	4.61%
2019	3.97%	4.33%

Source: Value-Line Investment Survey

9

**Average Utility Debt Yields
Reported By Value-Line Investment Survey
Monthly Averages for 2019**

	A/A	Baa/BBB
January	4.36%	4.76%
February	4.29%	4.66%
March	4.20%	4.56%
April	4.11%	4.47%
May	4.02%	4.37%
June	4.25%	4.60%
July	3.68%	4.02%
August	3.25%	3.63%
September		
October		
November		
December		

Source: Value-Line Investment Survey

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2 Interest rates on public utility debt and the cost of equity move in the same direction,
3 although not in lock-step with one another. Current interest rates have moved downward,
4 below levels seen in past dockets, which is an indication that there is a downward movement
5 in the cost of capital from 2008 to the present.

6 **Q. Please discuss the expected returns on common stocks as forecasted and published by**
7 **asset management companies.**

8 A. For another perspective of the capital markets, I reviewed returns expected on common
9 stocks over the next 10 to 15 years. JPMAM directly manages more than one-trillion dollars
10 of assets making their forecasts an important indicator of the expectations of sophisticated,
11 institutional investment advisors. J.P. Morgan's forecast is not unique, the expectations of
12 other money management firms are similar. In the last three years, these firms maintained
13 relatively low expected returns on common stocks and corporate bonds. This information

1 is an indication that sophisticated institutional investors continue to expect low returns on
 2 investments into the future, and that has been their expectation for each of the last six years.
 3 The following table shows the 10 to 15 year projected returns published by JPMAM for
 4 each of the previous six years; the same time period that Staff has advocated the 9.60%
 5 ROE for RLECs.

J.P. Morgan Asset Management Long-Term Capital Market Assumptions Forecasted 10 to 15 Year Total Returns		
	Large Companies	Mid-Size Companies
2012	9.69%	11.35%
2013	8.71%	10.23%
2014	8.49%	9.10%
2015	7.60%	8.34%
2016	8.09%	8.54%
2017	7.25%	8.03%
2018	6.41%	6.39%
2019	6.03%	6.79%
Sources: https://am.jpmorgan.com/us/		

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7 **Coverage Ratio Test of a 9.60% Return on Equity**

8 **Q. Did Staff evaluate whether a 9.60% ROE produces sufficient revenues for Golden Belt**
 9 **to maintain financial health and access to capital?**

10 **A.** Yes, Staff Schedule D-1 contains a TIER calculation. TIER stands for times-interest-
 11 earned-ratio which conveys sufficiency of revenues to cover interest and principal

1 payments. Staff's revenue requirement produces an interest coverage ratio of 19.77; by
2 rational standards, this is a healthy level of coverage over and above its annual debt service.

3 **Q. Does this conclude your testimony?**

4 **A. Yes.**

AT&T (T)				Century Link (CTL)				Shenandoah Telecom. Co (SHEN)				Telephone & Data Systems (TDS)				Verizon (VZ)			
Date	High	Low	Close	Date	High	Low	Close	Date	High	Low	Close	Date	High	Low	Close	Date	High	Low	Close
2/25/2019	\$ 31.27	\$ 30.64	\$ 30.82	2/25/2019	\$ 13.20	\$ 12.88	\$ 12.97	2/25/2019	\$ 46.92	\$ 44.22	\$ 46.26	2/25/2019	\$ 32.45	\$ 31.74	\$ 32.15	2/25/2019	\$ 57.61	\$ 56.35	\$ 56.96
3/4/2019	\$ 30.95	\$ 29.67	\$ 29.96	3/4/2019	\$ 12.90	\$ 11.52	\$ 12.30	3/4/2019	\$ 46.99	\$ 44.86	\$ 45.12	3/4/2019	\$ 32.24	\$ 30.73	\$ 31.05	3/4/2019	\$ 57.35	\$ 55.45	\$ 56.53
3/11/2019	\$ 30.90	\$ 29.95	\$ 30.67	3/11/2019	\$ 12.51	\$ 11.90	\$ 12.09	3/11/2019	\$ 47.00	\$ 45.14	\$ 46.61	3/11/2019	\$ 32.52	\$ 30.99	\$ 31.70	3/11/2019	\$ 58.51	\$ 56.75	\$ 58.39
3/18/2019	\$ 31.34	\$ 30.40	\$ 31.07	3/18/2019	\$ 12.33	\$ 11.76	\$ 12.17	3/18/2019	\$ 47.07	\$ 44.63	\$ 44.68	3/18/2019	\$ 32.44	\$ 31.23	\$ 31.43	3/18/2019	\$ 60.00	\$ 57.11	\$ 59.76
3/25/2019	\$ 31.64	\$ 30.65	\$ 31.36	3/25/2019	\$ 12.35	\$ 11.87	\$ 11.99	3/25/2019	\$ 46.90	\$ 44.12	\$ 44.36	3/25/2019	\$ 32.00	\$ 30.53	\$ 30.73	3/25/2019	\$ 61.19	\$ 58.32	\$ 59.13
4/1/2019	\$ 32.36	\$ 31.54	\$ 32.35	4/1/2019	\$ 12.69	\$ 12.06	\$ 12.55	4/1/2019	\$ 44.89	\$ 43.41	\$ 43.82	4/1/2019	\$ 32.55	\$ 30.74	\$ 32.09	4/1/2019	\$ 59.41	\$ 58.34	\$ 59.09
4/8/2019	\$ 32.52	\$ 31.54	\$ 32.20	4/8/2019	\$ 12.71	\$ 12.10	\$ 12.12	4/8/2019	\$ 45.27	\$ 42.49	\$ 44.04	4/8/2019	\$ 32.33	\$ 31.62	\$ 31.81	4/8/2019	\$ 59.13	\$ 58.04	\$ 58.74
4/15/2019	\$ 32.25	\$ 31.85	\$ 32.03	4/15/2019	\$ 12.29	\$ 11.85	\$ 12.14	4/15/2019	\$ 44.61	\$ 41.42	\$ 42.30	4/15/2019	\$ 32.10	\$ 30.45	\$ 31.40	4/15/2019	\$ 58.98	\$ 57.28	\$ 58.04
4/22/2019	\$ 32.28	\$ 30.05	\$ 30.68	4/22/2019	\$ 12.13	\$ 11.40	\$ 11.62	4/22/2019	\$ 42.93	\$ 41.37	\$ 41.92	4/22/2019	\$ 32.74	\$ 31.32	\$ 31.81	4/22/2019	\$ 58.49	\$ 55.75	\$ 56.58
4/29/2019	\$ 31.31	\$ 30.57	\$ 30.70	4/29/2019	\$ 11.77	\$ 11.28	\$ 11.68	4/29/2019	\$ 42.62	\$ 40.86	\$ 42.58	4/29/2019	\$ 34.12	\$ 31.67	\$ 33.68	4/29/2019	\$ 58.23	\$ 56.52	\$ 57.24
5/6/2019	\$ 30.72	\$ 30.13	\$ 30.62	5/6/2019	\$ 11.73	\$ 10.28	\$ 10.89	5/6/2019	\$ 42.68	\$ 40.84	\$ 41.49	5/6/2019	\$ 33.45	\$ 31.13	\$ 31.70	5/6/2019	\$ 57.09	\$ 55.93	\$ 56.91
5/13/2019	\$ 32.00	\$ 30.34	\$ 31.80	5/13/2019	\$ 11.06	\$ 10.44	\$ 10.59	5/13/2019	\$ 42.59	\$ 39.93	\$ 41.93	5/13/2019	\$ 31.44	\$ 30.08	\$ 30.87	5/13/2019	\$ 58.48	\$ 56.17	\$ 58.09
5/20/2019	\$ 33.08	\$ 31.93	\$ 32.27	5/20/2019	\$ 10.57	\$ 9.64	\$ 10.11	5/20/2019	\$ 44.46	\$ 41.91	\$ 43.03	5/20/2019	\$ 31.84	\$ 30.12	\$ 30.81	5/20/2019	\$ 60.54	\$ 58.00	\$ 59.32
5/27/2019	\$ 32.42	\$ 30.38	\$ 30.58	5/27/2019	\$ 10.86	\$ 10.11	\$ 10.45	5/27/2019	\$ 43.24	\$ 40.16	\$ 40.21	5/27/2019	\$ 30.91	\$ 28.73	\$ 28.81	5/27/2019	\$ 59.87	\$ 54.26	\$ 54.35
6/3/2019	\$ 32.70	\$ 30.68	\$ 32.49	6/3/2019	\$ 10.62	\$ 9.98	\$ 10.54	6/3/2019	\$ 41.33	\$ 38.33	\$ 38.36	6/3/2019	\$ 30.51	\$ 28.86	\$ 30.18	6/3/2019	\$ 58.14	\$ 54.56	\$ 57.24
6/10/2019	\$ 33.00	\$ 31.86	\$ 32.35	6/10/2019	\$ 11.20	\$ 10.29	\$ 11.10	6/10/2019	\$ 39.35	\$ 37.58	\$ 38.99	6/10/2019	\$ 30.35	\$ 28.79	\$ 29.31	6/10/2019	\$ 58.56	\$ 55.95	\$ 58.28
6/17/2019	\$ 32.70	\$ 32.17	\$ 32.45	6/17/2019	\$ 11.57	\$ 11.10	\$ 11.34	6/17/2019	\$ 41.11	\$ 37.67	\$ 40.09	6/17/2019	\$ 34.00	\$ 28.99	\$ 32.48	6/17/2019	\$ 58.33	\$ 56.93	\$ 57.77
6/24/2019	\$ 33.55	\$ 32.45	\$ 33.51	6/24/2019	\$ 11.83	\$ 10.67	\$ 11.76	6/24/2019	\$ 40.15	\$ 36.40	\$ 38.52	6/24/2019	\$ 32.73	\$ 29.62	\$ 30.40	6/24/2019	\$ 58.67	\$ 56.83	\$ 57.13
7/1/2019	\$ 34.37	\$ 33.37	\$ 34.30	7/1/2019	\$ 11.97	\$ 11.54	\$ 11.77	7/1/2019	\$ 39.78	\$ 38.06	\$ 39.64	7/1/2019	\$ 31.72	\$ 30.08	\$ 31.61	7/1/2019	\$ 58.51	\$ 56.60	\$ 58.31
7/8/2019	\$ 34.36	\$ 33.26	\$ 33.65	7/8/2019	\$ 12.22	\$ 11.61	\$ 12.20	7/8/2019	\$ 39.75	\$ 38.06	\$ 38.99	7/8/2019	\$ 31.93	\$ 30.97	\$ 31.79	7/8/2019	\$ 58.30	\$ 56.26	\$ 57.19
7/15/2019	\$ 33.74	\$ 32.77	\$ 32.79	7/15/2019	\$ 12.34	\$ 11.25	\$ 11.37	7/15/2019	\$ 39.23	\$ 37.68	\$ 37.74	7/15/2019	\$ 33.15	\$ 31.31	\$ 32.70	7/15/2019	\$ 57.80	\$ 56.57	\$ 56.59
7/22/2019	\$ 34.23	\$ 31.52	\$ 34.15	7/22/2019	\$ 11.77	\$ 10.86	\$ 11.75	7/22/2019	\$ 41.63	\$ 36.66	\$ 41.30	7/22/2019	\$ 33.61	\$ 31.13	\$ 33.44	7/22/2019	\$ 57.23	\$ 54.56	\$ 57.08
7/29/2019	\$ 34.64	\$ 33.54	\$ 34.17	7/29/2019	\$ 12.44	\$ 11.57	\$ 12.02	7/29/2019	\$ 41.41	\$ 35.97	\$ 36.98	7/29/2019	\$ 33.64	\$ 25.41	\$ 27.41	7/29/2019	\$ 57.60	\$ 54.77	\$ 55.59
8/5/2019	\$ 34.59	\$ 33.19	\$ 34.54	8/5/2019	\$ 11.95	\$ 10.29	\$ 10.78	8/5/2019	\$ 36.85	\$ 32.96	\$ 33.72	8/5/2019	\$ 27.50	\$ 25.47	\$ 25.51	8/5/2019	\$ 56.06	\$ 54.41	\$ 55.78
8/12/2019	\$ 35.00	\$ 33.96	\$ 34.97	8/12/2019	\$ 11.72	\$ 10.50	\$ 11.21	8/12/2019	\$ 34.28	\$ 32.76	\$ 32.79	8/12/2019	\$ 25.87	\$ 24.37	\$ 24.81	8/12/2019	\$ 56.69	\$ 55.07	\$ 56.65
8/19/2019	\$ 35.50	\$ 34.64	\$ 34.82	8/19/2019	\$ 11.71	\$ 11.17	\$ 11.21	8/19/2019	\$ 32.98	\$ 31.21	\$ 31.31	8/19/2019	\$ 25.17	\$ 24.11	\$ 24.21	8/19/2019	\$ 57.50	\$ 55.62	\$ 55.92
8/26/2019	\$ 35.14	\$ 34.71	\$ 34.93	8/26/2019	\$ 11.61	\$ 11.31	\$ 11.60	8/26/2019	\$ 32.21	\$ 31.31	\$ 32.11	8/26/2019	\$ 24.68	\$ 24.27	\$ 24.61	8/26/2019	\$ 56.73	\$ 55.82	\$ 56.71
Min	\$ 29.67			Min	\$ 9.64			Min	\$ 31.21			Min	\$ 24.11			Min	\$ 54.26		
Max	\$ 35.50			Max	\$ 13.20			Max	\$ 47.07			Max	\$ 34.12			Max	\$ 61.19		
Mean	\$ 32.91	\$ 31.77	\$ 32.45	Mean	\$ 11.93	\$ 11.16	\$ 11.57	Mean	\$ 41.79	\$ 39.26	\$ 40.33	Mean	\$ 31.41	\$ 29.42	\$ 30.31	Mean	\$ 58.33	\$ 56.23	\$ 57.38

Source: YahooFinance.com accessed on August 26, 2019

AT&T INC. NYSE-T

RECENT PRICE

31.48

P/E RATIO

8.7

(Trailing: 8.9)

Median: 13.0)

RELATIVE P/E RATIO

0.53

DIV YLD

6.5%

VALUE LINE

TIMELINESS

2

Raised 4/26/19

SAFETY

1

Raised 3/28/08

TECHNICAL

5

Lowered 6/7/19

BETA

.75

(1.00 = Market)

High:

41.9

29.5

29.6

31.9

38.6

39.0

37.5

36.4

43.9

43.0

39.3

33.1

Low:

20.9

21.4

23.8

27.2

29.0

32.8

31.7

31.0

33.4

32.6

26.8

28.3

LEGENDS

6.0 x "Cash Flow" p sh

Relative Price Strength

Options: Yes

Shaded area indicates recession

2022-24 PROJECTIONS

Price

Gain

Ann'l Total Return

High

60

(+90%)

22%

Low

50

(+60%)

18%

Insider Decisions

A

S

O

N

D

J

F

M

A

to Buy

1

0

0

0

0

0

0

0

Options

2

0

1

2

0

8

9

1

To Sell

0

0

0

0

0

0

1

0

Institutional Decisions

3Q2018

4Q2018

1Q2019

to Buy

1082

977

1236

to Sell

1100

1286

965

Hld's(000)

391790939062453871867

Percent shares traded

12

8

4

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

© VALUE LINE PUB. LLC

22-24

12.36

12.36

11.31

16.24

19.83

21.05

20.84

21.05

21.38

22.83

24.64

25.53

23.89

26.68

26.15

23.45

25.15

25.40

Revenues per sh

26.85

3.91

3.77

3.42

4.63

5.36

5.56

5.46

5.60

5.31

5.70

6.10

6.04

6.05

7.07

7.04

7.19

7.70

8.10

"Cash Flow" per sh

9.15

1.52

1.47

1.72

2.34

2.76

2.16

2.12

2.29

2.20

2.33

2.50

2.50

2.69

2.84

3.05

3.52

3.60

3.70

Earnings per sh ^A

4.35

1.37

1.25

1.29

1.33

1.42

1.60

1.64

1.68

1.72

1.76

1.80

1.84

1.88

1.92

1.96

2.00

2.04

2.08

Div'ds Decl'd per sh ^B

2.52

1.58

1.54

1.44

2.14

2.93

3.34

2.81

3.30

3.39

3.49

4.01

4.09

3.26

3.50

3.51

2.92

3.15

3.45

Cap'l Spending per sh

4.10

11.57

12.29

14.11

29.76

19.09

16.35

17.34

18.94

17.85

16.61

17.50

16.76

19.96

20.06

22.94

25.28

26.70

27.40

Book Value per sh ^C

31.10

3305.2

3300.9

3876.9

3882.0

6043.5

5893.0

5901.9

5911.1

5926.5

5581.4

5226.3

5186.9

6144.9

6139.0

6139.4

7281.6

7300.0

7300.0

Common Shs Outst'g ^D

7300.0

15.6

17.2

13.9

12.6

14.2

15.4

12.1

11.7

13.4

14.5

14.2

13.8

12.6

13.8

12.7

9.5

Bold figures are Value Line estimates

Avg Ann'l P/E Ratio

13.0

.89

.91

.74

.68

.75

.93

.81

.74

.84

.92

.80

.73

.63

.72

.64

.51

Bold figures are Value Line estimates

Relative P/E Ratio

.70

5.8%

5.0%

5.4%

4.5%

3.6%

4.8%

6.4%

6.3%

5.8%

5.2%

5.1%

5.3%

5.6%

4.9%

5.1%

6.0%

Bold figures are Value Line estimates

Avg Ann'l Div'd Yield

4.5%

CAPITAL STRUCTURE as of 3/31/19

Total Debt \$175480 mill. Due in 5 Yrs \$60000 mill.

LT Debt \$163942 mill. LT Interest \$8250 mill.

123018

124399

126723

127434

128752

132447

146801

163786

160546

170756

183600

185600

Revenues (\$mill)

196000

12535

13612

13103

13698

13463

13056

15188

17577

18860

23957

26300

27000

Net Profit (\$mill)

31800

32.4%

39.3%

33.6%

32.6%

33.2%

34.6%

32.4%

32.7%

9.5%

19.7%

19.0%

19.0%

Income Tax Rate

22.0%

10.2%

10.9%

10.3%

10.7%

10.5%

9.9%

10.3%

10.7%

11.7%

14.0%

14.3%

14.5%

Net Profit Margin

16.2%

38.7%

34.5%

36.7%

41.7%

43.1%

46.7%

48.9%

47.8%

47.0%

46.2%

45.5%

45.0%

Long-Term Debt Ratio

40.0%

61.3%

65.5%

63.3%

58.3%

56.9%

53.3%

50.7%

51.8%

52.6%

51.1%

54.5%

55.0%

Common Equity Ratio

60.0%

167045

170921

167097

159053

160772

162935

242155

237791

267979

360134

359000

362000

Total Capital (\$mill)

377000

100093

103196

107087

109767

110968

112898

124450

124899

125222

131473

132500

133000

Net Plant (\$mill)

135000

8.5%

8.8%

8.9%

9.7%

9.6%

9.1%

7.2%

8.5%

8.2%

8.0%

8.5%

8.5%

Return on Total Cap'l

9.5%

12.3%

12.2%

12.4%

14.8%

14.7%

15.0%

12.4%

14.3%

13.4%

13.0%

13.5%

13.5%

Return on Shr. Equity

14.0%

12.3%

12.2%

12.4%

14.8%

14.7%

15.0%

12.4%

14.3%

13.4%

13.0%

13.5%

13.5%

Return on Com Equity

14.0%

2.8%

3.3%

2.8%

3.7%

4.1%

4.0%

4.1%

4.7%

4.8%

5.7%

6.0%

6.0%

Retained to Com Eq

6.0%

77%

73%

78%

75%

72%

73%

67%

67%

64%

56%

57%

56%

All Div'ds to Net Prof

58%

BUSINESS:

AT&T Inc., formerly SBC Communications, is one of the world's largest telecom carriers and is the largest in the U.S. Its traditional (SBC only) wireline subsidiaries provide services in 13 states, including California, Texas, Illinois, Michigan, Ohio, Missouri, Connecticut, Indiana, Wisconsin, Oklahoma, Kansas, Arkansas, and Nevada. Also owns AT&T Wireless (previously

Cingular).

Acquired AT&T Corp., 11/05; BellSouth, 12/06; DirecTV, 7/15; Time Warner, 6/18. '18 sales mix: Service, 89%; Equipment, 11%. Has about 262,290 employees. BlackRock, 6.2% of common stock; Officers & directors own less than 1% (3/19 Proxy). Chrmn. & CEO: Randall Stephenson. Inc.: DE. Addr.: 208 S. Akard St., Dallas, Texas, 75202. Tel.: 210-821-4105. Internet: www.att.com.

AT&T shares have been solid performers since our March review.

This likely reflects a flight to quality on the part of jittery investors, as market volatility has picked up in tandem with trade tensions between the U.S. and China. Indeed, equity investors appear to be getting more defensive at present, seeking out companies with predictable business models that generate most of their revenue on the home front. Dividend-paying issues are also being aggressively sought after, especially with the Federal Reserve indicating that further interest rate increases will probably be on hold for a while.

Recent results have been mixed.

The core wireless segment showed surprising strength during the first quarter, with AT&T adding 80,000 net new phone subscribers, considerably more than we had anticipated. But pricing trends remained on the soft side, as the carrier has had to reduce plan rates in order to keep Verizon and other competitors at bay. Moreover, video losses, across both the DirecTV and U-verse platforms, continued to mount, as cord cutting accelerates in U.S. households. And the company is still work-

ing to digest the large Time Warner acquisition, though the integration process seems to be progressing smoothly thus far.

We still expect the company to be a slow-and-steady grower in the years ahead.

The traditional wireless unit should continue to show signs of maturity, suggesting that gains there will be hard to come by. The over-the-top streaming video service, DirecTV Now, ought to drive the top line, however, particularly as AT&T steps up original-content investments at its HBO and Warner Studios properties. In addition, advertising revenues will probably become more meaningful (they're now just a small piece of the overall pie), as the company looks to further leverage its streaming franchise by selling more targeted digital ads. This could be a huge moneymaker, in our view, at a time when advertisers are increasingly turning away from linear TV.

We continue to like this timely (2) stock for the conservative buy-and-hold crowd.

Notably, we think the generous dividend payout is safe, despite some investor concerns about the high debt load.

Justin Hellman

June 14, 2019

ANNUAL RATES

Past 10 Yrs.

Past 5 Yrs.

Est'd '16-'18 to '22-'24

of change (per sh)

3.0%

2.0%

1.0%

Revenues

3.0%

4.5%

4.5%

"Cash Flow"

2.5%

6.0%

5.5%

Earnings

3.0%

2.0%

4.5%

Dividends

.5%

5.5%

5.5%

Book Value

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2016

40535

40520

40890

41841

163786

2017

39365

39837

39668

41676

160546

2018

38038

38986

45739

47993

170756

2019

44827

45123

45650

48000

183600

2020

45300

45600

46200

48500

185600

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2016

.72

.72

.74

.66

2.84

2017

.74

.79

.74

.78

3.05

2018

.85

.91

.90

.86

3.52

2019

.86

.90

.95

.89

3.60

2020

.88

.93

.98

.91

3.70

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2015

.47

.47

.47

.47

1.88

2016

.48

.48

.48

.48

1.92

2017

.49

.49

.49

.49

1.96

2018

.50

.50

.50

.50

2.00

2019

.51

.51

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CenturyLink, Inc. NYSE-CTL

RECENT PRICE10.35

P/E RATIO8.0

(Trailing: 8.1 Median: 20.0)

RELATIVE P/E RATIO0.48

DIV'D YLD9.7%

VALUE LINE

High: 42.0

Low: 20.5

37.2

23.4

46.9

14.2

46.8

31.2

43.4

36.3

42.0

29.9

45.7

27.9

40.6

24.1

33.4

21.9

27.6

13.2

24.2

14.0

16.8

9.6

LEGENDS

2.5 x "Cash Flow" p sh

Relative Price Strength

Options: Yes

Shaded area indicates recession

Target Price Range

202220232024

2022-24 PROJECTIONS

Ann'l Total Return

Price Gain

High Low

201320 (+95%)24%

13 (+25%)14%

Insider Decisions

A S O N D J F M A

to Buy 0 0 0 0 1 0 0 4 0

Options to Buy 0 0 0 3 0 0 0 6 0

Options to Sell 1 0 0 0 1 0 0 0 0

Institutional Decisions

3Q2018 4Q2018 1Q2019

to Buy 380 357 389

to Sell 315 383 346

Hld's(000) 810811 814161 810863

Percent shares traded 30 20 10

% TOT. RETURN 5/19

THIS STOCK VL ARITH. INDEX

1 yr. -34.8 -6.7

3 yr. -47.6 24.4

5 yr. -56.2 30.8

200320042005200620072008200920102011201220132014201520162017201820192020

16.4818.1918.9121.6124.0225.9125.5923.0924.8229.3731.0031.7232.9231.9616.5121.7020.4520.00

5.656.336.617.898.218.698.618.077.448.889.479.1510.489.594.615.915.856.00

2.392.402.493.073.133.373.463.411.071.251.642.612.722.451.581.191.301.30

.22.23.24.25.261.542.802.902.902.902.162.162.162.162.162.161.001.00

2.622.913.172.773.012.862.522.833.904.675.225.365.285.452.912.943.403.30

24.0425.7027.5428.1131.4231.5531.6431.6433.6730.8329.4626.4225.8624.5221.9718.3615.1015.45

144.36132.37131.07113.25108.49100.28299.19304.95618.51625.66583.64568.52543.80546.551069.21080.21100.001100.00

13.412.913.412.514.510.08.910.936.231.421.314.011.611.413.915.8

.76.68.71.67.77.60.59.692.2001.20.74.59.59.70.85

.7%.7%.7%.7%.6%4.6%9.1%7.8%7.5%7.4%6.2%5.9%6.9%7.7%9.8%11.5%

© VALUE LINE PUB. LLC

22-24

Revenues per sh20.60

"Cash Flow" per sh6.40

Earnings per sh A1.40

Div'ds Dec'd per sh B1.00

Cap'l Spending per sh3.50

Book Value per sh C18.80

Common Shs Outst'g D1100.00

Avg Ann'l P/E Ratio12.0

Relative P/E Ratio.65

Avg Ann'l Div'd Yield6.0%

CAPITAL STRUCTURE as of 3/31/19

Total Debt \$35490 mill. Due in 5 Yrs \$12200 mill.

LT Debt \$34858 mill. LT Interest \$2100 mill.

(Total interest coverage: 1.0x) (72% of Cap'l)

Pension Assets-12/18 \$10033 mill. Oblig. \$11594 mill.

Common Stock 1,090,445,000 shares

MARKET CAP: \$11.3 billion (Large Cap)

CURRENT POSITION (SMILL.)

Cash Assets 551 488 441

Other 3643 3332 3379

Current Assets 4194 3820 3820

Accts Payable 1555 1933 1481

Debt Due 443 652 632

Other 2859 2946 3260

Current Liab. 4857 5531 5373

ANNUAL RATES

Past 10 Yrs. Past 5 Yrs. Est'd '16-'18 to '22-'24

Revenues - - -4.0% -2.0%

"Cash Flow" -2.5% -6.0% .5%

Earnings -8.5% - -1.0%

Dividends 12.0% -4.0% -12.5%

Book Value -3.5% -7.0% -2.5%

Cal-endar

QUARTERLY REVENUES (\$mill.)

Mar.31 Jun.30 Sep.30 Dec.31

Full Year

2016 4401 4398 4382 4289 17470

2017 4209 4090 4034 5323 17656

2018 5945 5902 5818 5778 23443

2019 5647 5650 5600 5603 22500

2020 5500 5500 5500 5500 22000

Cal-endar

EARNINGS PER SHARE A

Mar.31 Jun.30 Sep.30 Dec.31

Full Year

2016 .71 .63 .56 .54 2.45

2017 .52 .46 .42 .18 1.58

2018 .25 .26 .30 .37 1.19

2019 .34 .31 .32 .33 1.30

2020 .32 .32 .33 .33 1.30

Cal-endar

QUARTERLY DIVIDENDS PAID P=

Mar.31 Jun.30 Sep.30 Dec.31

Full Year

2015 .540 .540 .540 .540 2.16

2016 .540 .540 .540 .540 2.16

2017 .540 .540 .540 .540 2.16

2018 .540 .540 .540 .540 2.16

2019 .250 .250 .250 .250 1.00

BUSINESS: CenturyLink, Inc., formerly CenturyTel, is the third-largest telephone company in the U.S. It provides broadband, voice, and wireless services to consumers and businesses across the country. It also offers advanced entertainment services under the CenturyLink Prism TV, and DIRECTV brands. Acquired Level 3 Communications, 11/17; Verizon wireline assets in Alabama, 7/02; Verizon wireline assets in Missouri, 9/02; Qwest, 4/11. Employs about 51,000. All Off/Dir. as a group own less than 1% of common stock; Temasek Holdings, 9.8%; Vanguard Group, 9.7%; (4/19 Proxy). Chairman: William A. Owens. CEO: Jeffrey K. Storey. Inc.: Louisiana. Address: 100 CenturyLink Drive, Monroe, Louisiana 71203. Telephone: 318-388-9000. Internet: www.centurylink.com.

CenturyLink shares have not been kind to investors lately. In fact, the large-cap stock has fallen more than 30% year to date, owing to a slew of factors that have weighed on its performance. To recap, the company's acquisition of Level 3 Communications has not lived up to expectations. That deal was supposed to help CTL compete with large telecoms like AT&T and Verizon; instead, profits have fallen by half, debt has soared, and the dividend was cut earlier this year to preserve cash. Recent trends haven't been all that inspiring, either. During the March period, sales declined in six of eight categories, with the Consumer and Wholesale segments leading the way. As was the case in the previous quarter, fierce competition from cloud companies and wireless operators continued to weigh on results. Meantime, earnings increased for the second-consecutive quarter—albeit off a low base—though much of this was due to cost cutting and a lower tax rate. Management is exploring strategic options for the consumer unit. Consumer revenues make up about a quarter of CenturyLink's overall business, and a sale

could potentially bring in several billion dollars. From our perspective, a divestment makes sense because it fits with management's enterprise strategy and would allow the company to pare its debt load. However, we still have some concerns. For starters, the Consumer unit generates a significant amount of cash, and selling it would call into question the long-term sustainability of the dividend, in our view. If management does decide to proceed with a sale, the price tag would have to be appealing enough to offset this risk. For now, a review process is underway, and we don't expect any final determinations for a least a few months. This stock should be of interest to income-oriented accounts. Even with the recent dividend cut, the current yield is still a healthy 9.7%. However, as previously mentioned, there is some risk here. CTL has already slashed the dividend once, and a sale of its profitable consumer business could once again put the payout on shaky ground. As a result, we think most conservative accounts would be best served looking elsewhere. Daniel Henigson, CFA

June 14, 2019

■ Dividend reinvestment plan available. Excludes one-time dividend: Q3 '08, \$0.633. (C) Includes intangibles. In 2018: \$29,899 million; \$27.68 per share. (D) In millions.

■ Dividend reinvestment plan available. Excludes one-time dividend: Q3 '08, \$0.633. (C) Includes intangibles. In 2018: \$29,899 million; \$27.68 per share. (D) In millions.

Company's Financial Strength	B
Stock's Price Stability	45
Price Growth Persistence	5
Earnings Predictability	55

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SHENANDOAH TELCM, NDQ-SHEN						RECENT PRICE	39.95	P/E RATIO	32.0	(Trailing: 37.0) (Median: 22.0)	RELATIVE P/E RATIO	1.94	DIV'D YLD	0.8%	VALUE LINE	Target Price Range				
TIMELINESS	2	Lowered 5/17/19	High: 14.1	14.2	10.6	9.8	9.5	14.6	17.0	25.7	42.7	41.8	51.4	51.2						
SAFETY	3	New 3/27/09	Low: 6.2	8.0	7.8	4.5	4.5	6.5	11.5	13.8	19.2	25.3	29.9	39.4						
TECHNICAL	3	Lowered 6/7/19	LEGENDS — 10.0 x "Cash Flow" p sh Relative Price Strength 3-for-1 split 8/07 2-for-1 split 1/16 Options: Yes Shaded area indicates recession																	
BETA	1.00	(1.00 = Market)																		
2022-24 PROJECTIONS																				
Price Gain Ann'l Total Return																				
High	80	(+100%)	19%																	
Low	55	(+40%)	9%																	
Insider Decisions																				
A S O N D J F M A																				
to Buy	0	0	0	1	0	0	0	1	0											
Options	4	4	4	4	6	9	14	5	4											
to Sell	2	1	0	5	0	0	0	1	0											
Institutional Decisions																				
3Q2018 4Q2018 1Q2019																				
to Buy	77	87	88																	
to Sell	52	68	64																	
Hld's(000)	23298	23888	24406																	
Percent shares traded																				
12																				
8																				
4																				

(A) Diluted earnings. Next earnings report late Aug. Year-end eps may not sum due to rounding. Excl. extra. losses/gains: '07, 36¢. Excl. n/r gains: '03, (\$0.02); '04, (\$0.63). (B) Dividends © 2019 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. The PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.	historically paid in late March, June, Sept., & Dec. ■ Div'd re. plan avail. (5% discount). (C)		Company's Financial Strength	B
	In millions, adjusted for stock split. Common stock, 1 vote/sh.; Series A, 10 votes/sh.		Stock's Price Stability	50
			Price Growth Persistence	15
			Earnings Predictability	10
To subscribe call 1-800-VALUELINE				

VERIZON

NYSE-VZ

RECENT PRICE

56.22

P/E RATIO

11.8

(Trailing: 11.9)

Median: 13.0

RELATIVE P/E RATIO

0.72

DIV YLD

4.4%

VALUE LINE

TIMELINESS

1

Raised 11/16/18

SAFETY

1

Raised 9/28/07

TECHNICAL

3

Lowered 6/7/19

BETA

.75

(1.00 = Market)

2022-24 PROJECTIONS

Ann'l Total Return

Price Gain

High 100 (+80%) 18%

Low 85 (+50%) 14%

Insider Decisions

A S O N D J F M A

to Buy 0 0 0 0 0 0 0 0 0 0

Options 0 1 0 1 0 0 2 10 2 2

to Sell 0 0 0 0 0 0 1 1 1

Institutional Decisions

3Q2018 4Q2018 1Q2019

to Buy 1072 1219 1255

to Sell 889 969 976

Hld's(000)27000982739727271564

Percent shares traded 24 16 8

LEGENDS

1.35 x Dividends p.sh divided by Interest Rate

..... Relative Price Strength

Options: Yes

Shaded area indicates recession

High: 44.3 34.8 36.0 40.3 48.8 54.3 53.7 50.9 56.9 54.8 61.6 61.2

Low: 23.1 26.1 26.0 32.3 36.8 41.5 45.1 38.1 43.8 42.8 46.1 52.3

Target Price Range

2022 2023 2024

160 120 100 80 60 50 40 30 20 15

% TOT. RETURN 5/19

THIS STOCK VL ARITH. INDEX

1 yr. 19.0 -6.7

3 yr. 22.4 24.4

5 yr. 36.7 30.8

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
24.46	25.73	25.59	30.29	32.56	34.27	38.02	37.68	39.10	40.53	29.11	30.58	32.31	30.90	30.89	31.67	31.90	32.25	Revenues per sh	34.50
7.55	7.64	7.24	7.07	7.40	7.65	8.12	8.01	7.96	7.85	6.79	7.19	7.94	7.79	7.91	8.88	8.90	9.00	"Cash Flow" per sh	9.25
2.62	2.59	2.56	2.54	2.34	2.54	2.40	2.21	2.15	2.32	4.00	3.35	3.99	3.87	3.74	4.71	4.75	4.85	Earnings per sh (A)	5.25
1.54	1.54	1.62	1.62	1.65	1.78	1.87	1.93	1.96	2.02	2.08	2.16	2.23	2.29	2.29	2.37	2.37	2.42	Div'ds Decl'd per sh (B)	2.62
4.29	4.79	5.24	5.88	6.11	6.07	6.01	5.82	5.73	5.66	4.01	4.14	4.36	4.18	4.23	4.03	4.25	4.25	Cap'l Spending per sh	4.40
12.08	13.56	13.56	16.68	17.62	14.68	14.67	13.64	12.69	11.60	9.38	2.96	4.03	5.53	10.95	12.86	13.25	13.50	Book Value per sh	13.65
2769.4	2770.0	2926.8	2909.9	2871.0	2840.6	2835.7	2828.1	2835.5	2858.3	4141.1	4155.4	4073.2	4076.7	4079.5	4132.0	4145.0	4150.0	Common Shs Outst'g (C)	4000.0
13.7	14.8	13.2	13.4	17.6	13.7	12.7	13.8	17.1	18.1	12.2	14.5	11.8	13.3	12.9	11.1	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	17.5
.78	.78	.70	.72	.93	.82	.85	.88	1.07	1.15	.69	.76	.59	.70	.65	.60			Avg Ann'l P/E Ratio	.95
4.3%	4.0%	4.8%	4.8%	4.0%	5.1%	6.1%	6.3%	5.3%	4.8%	4.3%	4.4%	4.7%	4.5%	4.7%	4.5%			Avg Ann'l Div'd Yield	2.8%

CAPITAL STRUCTURE as of 3/31/19

21 Debt \$113659 mill. Due in 5 Yrs \$35014 mill.

LT Debt \$105045 mill. LT Interest \$1800 mill.

Incl. \$758.0 mill. capitalized leases.

(Total interest coverage: 7.1x)

(65% of Total Cap'l.)

Leases, Uncapitalized Annual rentals \$4043 mill.

Pension Assets-12/18 \$17816 mill.

Oblig. \$19567 mill.

Pfd Stock None

Common Stock 4,135,706,646 shs.

MARKET CAP: \$233 billion (Large Cap)

CURRENT POSITION	2017	2018	3/31/19
(SMILL.)			
Cash Assets	2079	2745	2322
Other	27834	31891	31075
Current Assets	29913	34636	33397
Accts Payable	21232	22501	18664
Debt Due	3453	7190	8614
Other	8352	8239	11329
Current Liab.	33037	37930	38607

BUSINESS:

Verizon Communications was created by the merger of Bell Atlantic and GTE in June of 2000. It is a diversified telecom company with a network that covers a population of about 298 million and provides service to nearly 98.2 million. Acquired MCI, 1/06; Alltel, 1/09; Verizon Wireless, 2/14. Also the largest provider of print and on-line directory information. Has a wireline presence in 28 states & Washington, D.C.; a wireless presence in 50 states & D.C.; operations in 19 countries. 2018 revenue breakdown: wireline, 23%; domestic wireless, 69%; corporate & other, 8%. Has about 144,500 employees. Chairman: Lowell McAdam; CEO: Hans Vestberg, Inc.: Delaware. Addr.: 1095 Avenue of the Americas, NY, NY 10036. Tel.: 212-395-1000. Internet: www.verizon.com.

Verizon once again seems set for another record year.

To wit, the telecommunications giant and Dow-30 component reported first-quarter earnings of \$1.20 a share, four cents above our estimate and three cents above the year-ago figure, on a modest 1.1% top-line advance. It is important to note that during the first quarter, Verizon's performance was tempered by a reduction in benefits from the adoption of a revenue recognition standard, primarily due to the deferral of commission expense, and the adoption of a lease accounting standard. The combined impact pared earnings by \$0.04 a share. However, the better-than-expected bottom-line performance can be attributed to VZ Wireless. Indeed, the division reported a 3.7% uptick in March-quarter revenue, the sixth time the company has reported year-over-year wireless revenue growth in two years. Too, service revenues, which were in decline last year, were up a solid 4.4% in the first quarter, driven by customer step-ups to higher-priced plans, contributions from strong retail postpaid net additions in the fourth quarter of last year, and an increase in connections per account.

But the news is not all good.

Top-line growth in 2019 is likely to be fairly modest, as elevated competition in a mature industry may stymie the company's ability to attract new customers. And Verizon has earmarked \$17 billion to \$18 billion for capital expenditures in 2019, due to the launch and continued buildout of its 5G Ultra Wideband network, the growth in data and video traffic on the company's 4G LTE network, the deployment of significant fiber in markets nationwide, and the upgrade to Verizon's Intelligent Edge Network. Yet, the company is on schedule to achieve \$10 billion in total cash savings by 2021, which augurs well for the bottom line going forward.

Blue-chip Verizon stock has something for investors of all ilks.

Notably, the issue is ranked to best the year-ahead market averages. And at the recent quotation, its capital-appreciation potential 3 to 5 years hence is above that of the average selection under our review. Finally, income-seeking investors are apt to like Verizon's dividend yield, which is almost twice that of the Value Line median.

Kenneth A. Nugent

June 14, 2019

(A) Based diluted shares. Excl. n/r gains (losses): '03, (\$1.51); '04, \$0.08; '06, (\$0.42). Next earnings report Aug. 1st. (B) Div'd paid in early Feb., May, Aug. & Nov. ■ Div'd reinv. plan avail. (C) In mill. (D) Including financial subsidiary. (E) '06 MCI pro forma.

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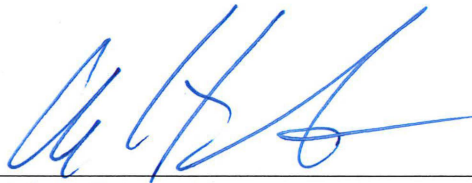
Company's Financial Strength	A++
Stock's Price Stability	95
Price Growth Persistence	30
Earnings Predictability	65

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STATE OF KANSAS)
) ss.
COUNTY OF SHAWNEE)

VERIFICATION

Adam Gatewood, being duly sworn upon his oath deposes and states that he is a Senior Managing Financial Analyst for the Utilities Division of the Kansas Corporation Commission of the State of Kansas, that he has read and is familiar with the foregoing *Direct Testimony*, and attests that the statements contained therein are true and correct to the best of his knowledge, information and belief.



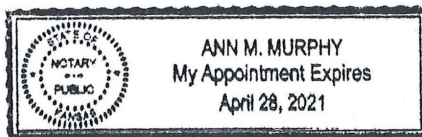
Adam Gatewood
Senior Managing Financial Analyst
State Corporation Commission of the
State of Kansas

Subscribed and sworn to before me this 11 day of October, 2019.



Notary Public

My Appointment Expires: 4-28-21



CERTIFICATE OF SERVICE

19-GNBT-505-KSF

I, the undersigned, certify that a true and correct copy of the above and foregoing Direct Testimony was served via electronic service this 11th day of October, 2019, to the following:

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